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A Comparative Psychomecanical Study of Arabic and English Causative Verbs

Thèse

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Résumé

Cette thèse examine les alternances transitives en arabe et en anglais d'un point de vue sémantique. La différence entre l'anglais et l'arabe en ce qui concerne les alternances transitives manifeste la pauvreté de la morphologie anglaise par rapport à la richesse de l'arabe dans ce domaine d'usage. En fait, la même forme du verbe est utilisée en anglais à la fois comme transitive et intransitive. L'existence de plusieurs formes morphologiques du verbe arabe est due à la possibilité d'exprimer la causalité même avec des verbes inergatifs.

Le cadre théorique utilisé dans la thèse est inspiré de la grammaire cognitive et de la psychomécanique du langage. Les deux approches soutiennent que le sens est dans l'esprit plutôt que dans le monde référentiel ou dans des constructions théoriques de modèle encadrées en termes d'ensembles de référents ou d'ensembles de mondes possibles dans lesquels une phrase serait considérée comme vraie. La psychomécanique fait en outre une distinction cruciale entre les deux états dans lesquels le sens existe dans l'esprit: sous la forme sous laquelle il existe avant d'être utilisé, il s'agit d'un potentiel décontextualisé en position de cause possible de la gamme variée de messages qu'il peut être observé pour exprimer dans ses divers usages dans le discours; dans l'état dans lequel il existe lorsqu'il est utilisé, il s'agit d'un réel contextualisé en position d'effet, déployé avec un contenu contextuel et situationnel pour véhiculer un message particulier parmi tous les messages qu'il est capable de contribuer à exprimer. Cette étude est également fermement basée sur le principe sémiologique proposé par Duffley (2014), à savoir que « le langage humain n'est pas principalement fondé sur la forme, mais sur les appariements forme-sens ».

La plupart des recherches précédentes sur la causalité ont été exclusivement syntaxiques, la sémantique n'étant impliquée que dans la classification des lexèmes verbaux en groupes partageant des éléments sémantiques de signification basés sur un comportement syntaxique similaire. Notre étude propose un sens potentiel capable d'expliquer l'ensemble de leurs usages pour l'ensemble des six dispositifs identifiés dans la littérature comme causativants ou dé-causativants en arabe, à savoir ablaut, gémination, préfixation par *a*-, *ta* + gémination, préfixation avec *ta*- + allongement de la voyelle du milieu, et préfixation avec *n*-. L'étude des trois premières formes a montré que la causalité n'est pas la signification potentielle de ces formes, mais plutôt un seul type de message parmi de nombreuses autres significations réelles véhiculées lorsqu'elles sont utilisées en contexte. Notre analyse a également conclu que les trois dernières formes de la liste ne sont pas non plus intrinsèquement décausativantes,

mais que les significations potentielles de ces formes impliquent la réflexion et la réciprocité, des notions qui s'opposent à la nature de la causalité qui est orientée vers l'extérieur, car l'action comme restant interne à l'auteur de l’action ou comme retournant réciproquement à celui-ci.

Abstract

This thesis examines the transitive alternations in Arabic and English from a semantic point of view. The difference between English and Arabic with regard to transitive alternations manifests the poverty of English morphology compared to the richness of Arabic in this area of usage. In fact, the same form of the verb is used in English as both transitive and intransitive. The existence of several morphological forms of the Arabic verb is due to the possibility of expressing causation even with unergative stems.

The theoretical framework employed in the thesis is inspired by Cognitive Grammar and the Psychomechanics of Language. Both approaches hold that meaning is in the mind rather than in the referential world or in model-theoretical constructs framed in terms of sets of referents or sets of possible worlds in which a sentence would be considered true. Psychomechanics further makes a crucial distinction between the two states in which meaning exists in the mind: in the form in which it exists before being used, it is a decontextualized potential in the position of possible cause of the variegated range of messages it can be observed to express in its various uses in discourse; in the state in which it exists when used, it is a contextualized actual in the position of effect, being deployed along with contextual and situational content to convey a particular message from among all the messages it is capable of contributing to express. This study is also firmly based on the semiological principle proposed by Duffley (2014), namely that “human language is not primarily about form, but about form-meaning pairings”.

Most of the previous research on causation has been exclusively syntactic, with semantics being involved only in the classification of verbal lexemes into groups that share semantic elements of meaning based on similar syntactic behavior. Our study proposes a potential meaning capable of explaining all of their uses for all of the six devices identified in the literature as causativizing or de-causativizing in Arabic, namely ablaut, gemination, prefixation by *a*-, *ta* + gemination, prefixation with *ta*- + lengthening of the middle vowel, and prefixation with *n*-. The study of the first three devices showed that causativization is not the potential meaning of these forms, but rather only one type of message among many other actual meanings conveyed when they are used in context. Our analysis also concluded that the last three forms in the list are not inherently de-causativizing either, but that the potential meanings of these forms involve reflexivization and reciprocity, notions which are opposed to the externally-

oriented nature of causation, as they construe the action as remaining internal to the causer or as returning reciprocally upon the latter.

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Dedication

I would like to thank my parents Mohamed Hedi and Rafika who have supported my education with unexpectedly extraordinary sacrifice and patience, my brothers and sister. Many thanks to my wife and my children, who stood by me while I was writing this dissertation, for their patience and moral support. I also thank the one above all of us, the omnipresent God for giving me strength to continue my studies.

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A word of thanks is also due to Mr. Bruno Courbon and Mr. Manuel.Espanol-Echevarria for their valuable advice and helpful references.

Introduction

This thesis offers a detailed study of transitivity alternations, with particular reference to Arabic and English. More precisely, it will seek to reach a principled explanation of the variation in the way causativization is expressed in these two languages. The lexical-semantic and morphosyntactic properties of morphological causatives will be examined in detail and will be distinguished from middle constructions.

The introduction will be divided into four subsections: first, we will give a brief overview explaining the rationale for choosing the topic to which the theoretical framework will be applied; second, we will present the objectives and the hypotheses of the study; then we will introduce the research problems to be investigated; also we will deal with the research methodology and the techniques of data collection; and finally we will outline the organization of the thesis.

Rationale of the study

Based on Langacker's assertion (1987:5) that *"the most fundamental issue in linguistic theory is the nature of meaning and how we deal with it,*" this study will examine the meaning of verbs that express causation[1] in Arabic and English. Most of the previous research into causativization has been syntactic, and although sometimes semantics has been involved, verbs have been classified into groups that are held to share semantic elements of meaning because they exhibit similar syntactic behaviour. Unlike previous studies, our study will be based on the Guillaumian framework, in which potential and actual meaning are fundamental tools of analysis. We will follow Gustave Guillaume in seeing the word as the basic unit of language, with each word constituting the means by which a speaker can voice, through discourse or inner dialogue, their experience. In Hirtle's words (1985:73), *"Psychomechanics postulates that all the senses of a morpheme like -s observed in usage are actualizations of a single potential meaning. Because this potential meaning can never emerge into consciousness, it is not directly observable and so must be imagined by the linguist, reconstructed as they say in comparative grammar, on the basis of its observed senses."* In this study, we assume that each linguistic means

[1] In this thesis, causation, causativity and causativization refers to the same operation that indicates that a subject either causes someone or something else to do or be something or causes a change in state of an event.

of expressing causation has a potential meaning which gives rise to various actual meanings when used in discourse. We will study the three forms which are claimed to express causation in Arabic (gemination, prefixation by *a-* and ablaut of the second vowel in the word) in terms of their potential and actualized meanings. One of the problems addressed will be the identification of those meaning-components which determine whether a verb does or does not undergo causativization.

The approach adopted here will therefore not follow Chomsky (1957)'s view that "it is questionable that the grammatical devices in language are used consistently enough so that meaning can be assigned to them directly" (p. 108). This affirmation implies that the form of a verb has no regular predictable link with its meaning. The point of view adopted in this study, on the other hand, will seek correlations between the different verb forms of the verb (gemination, ablaut and prefixation by a-) and their meanings (potential/actual).

Many previous classifications of verbs have been ontologically and philosophically inspired, going as far back as Aristotle (cf. Kenny 1963). Aristotle distinguished three sorts of event: (a) states (b) performances and (c) activities. This ontological classification later acquired linguistic legitimacy through Vendler's classic (1967) study. Vendler broadened the Aristotelian system to four aspectual types, splitting up performances into what he called Achievements and Accomplishments. This classification seems to be relevant to Arabic in that the use of ablaut with a triconsonantal root evoking a stative notion such as H-Z-N 'related to sadness' conveys a causative sense in which the state is the result of the causation. Verbs of change of state have been studied in English by Levin and Rappaport Hovav (1995), who have examined lexemes like *break* and *burn* and their participation in transitive and intransitive patterns. Levin and Rappaport Hovav treat the transitive as the basic form of these verbs, and the intransitive as a sort of "derivative" of the transitive. This position is known as the causative analysis of unaccusative verbs. Consistent with their analysis, Hallman (2006) argues that unaccusatives can be made into causatives in Arabic, as in example (1) below. Contrary to Levin and Rappaport Hovav's analysis, however, he claims that Arabic unergatives can also be causativized, as in example (2) below:

(1)

a) غلى الماء **(I)**

Ghalā al-ma’u

Boil-PRET the water

The water boiled.

b) يغلي الولد الماء **(T)**

yaghli Al-waladu al-ma’a

The boy is boiling the water.

(2)

a) هدِم المنزل **(I)**

hadima almanzil

The house collapsed.

b) هدَم الرجل المنزل **(T)**

hadama alrajul almanizil

The man demolished the house.

It is significant here that the English unergative does not allow either transitivization or causativization, although in English in certain situations when the object is designed so as *to collapse* and thereby occupy less space. For example one can collapse telescope but cannot collapse a roof or a house, one can produce a sentence as (2c) below:

(2)

c) He collapsed the folding chair and stored it under the stairs.

However, in Arabic, the causative is marked in the verb’s morphology by ablaut of the verb’s middle vowel as in (2b), which raises the question as to what this vowel change contributes to the expression of causation.

Moving from syntactic frameworks towards theories that tend to rely more on semantics, Lexical Conceptual Structure (LCS) uses an elaborate form of semantic representation with a strong cognitive dimension. LCS is mainly organized around the notion of motion, with other semantic/cognitive fields being derived from motion by analogy. This theory was introduced by Jackendoff (1983) in his book *Semantics and Cognition* and is based on a small number of conceptual primitives. The main ones are BE, which represents any state, and GO, which represents any action. Other primitives include: STAY (a BE with an idea of duration), CAUSE (causality), and INCH (for inchoative interpretations of events). Thus, *John opened the door* is represented as:

[$_{Sit}$ CAUSE ([John], [$_{Sit}$ BE ([the door], [$_{Property}$ OPEN])])]; [$_{Time}$ PAST]

One of the problems with this notation is that it does not distinguish between *John opened the door* and *John caused the door to open*. The semantic analysis proposed in this thesis will be more fine-grained than Jackendoff's system and will try to address distinctions such as that between the two English sentences just cited.

In this study, we adopt a Guillaumian framework based on the fundamental distinction between potential and actual meaning. Hirtle (1985) explains the application of Guillaume's theory to the *-s* and zero morphemes with the noun in English:

> As in the case of the -s morpheme, zero morpheme confronts the linguist with various senses and leads anyone working within the framework of Psychomechanics to postulate an underlying potential meaning as the principle giving rise to these various manifestations. However, it is not enough simply to postulate the existence of a potential meaning. A linguist must somehow describe it, showing how it is organized, and so distinguish it from the potential meaning of other morphemes. (p. 73)

The need for such an approach in the study of Arabic causatives can be illustrated by the fact that two of the forms used to express causation can also express other types of message. Thus, ablaut is found not only in causatives but also in the second syllable of all action verbs, as illustrated in the examples in (3):

(3) a) أكَل

ak**a**la

/eat/

b) ضرَب

dhar**a**ba

/hit/

c) خرَج

xar**a**ja

/leave/

d) فتَح

fat**a**ha

/open/

This suggests that it must have a more general potential meaning that can evoke causation under certain conditions in actual use. Gemination can also be used to express intensification of an action, as in example (4) below, where (a) denotes an action and (b) a more intense form of actualization of the same action:

(4) a) كسر الولد المزهرية

kasara alwaladu almizhariat

broke the boy the vase

the boy broke the vase

b) كسّر الولد المزهرية

kassara alwaladu almizhariat

broke (into pieces) the vase

the boy smashed the vase into pieces (idea of intensification)

This entails that the use of gemination to express causation is also but one actual use of a higher-level potential. The same thing is true of English, where

transitivization can express not only causation, as in (1b) above, but also production, (5), accompaniment, (6), transportation, (7) or de-reflexivization, (8):

(5) a) Heat radiates from the sun.
b) The sun radiates heat.

(6) a) She walked home.
b) He walked her home.

(7) a) I drove home.
b) She drove me home.

(8) a) The boy undressed.
b) She undressed the baby. (≠ 'caused the baby to undress')

An approach predicated on the potential/actual distinction thus promises to shed light on the nature of the linguistic means used to express causation in both English and Arabic, as well as on the relation between these means and the communicative goal to which they are directed.

The objectives and the hypotheses

The goal of the present thesis is to reach a principled semantically based explanation of the cross-linguistic variation in the way causativization is expressed in English and in Arabic. The main questions that will be explored are:

- testing David Ford (2009)'s affirmation that there are three forms that express causativization in Arabic: gemination, prefixation by a- and ablaut.
- showing that the variety of forms of morphological causativization in Arabic is explainable by the semantics of gemination, prefixation by a- and ablaut.
- demonstrating that there are certain parallels between the way in which English and Arabic express causation.

In achieving these goals, we will pursue the following objectives:

- to compare causativization in English and Arabic.
- to verify whether David Ford (2009)'s affirmation that ablaut expresses causativity is valid.
- to examine English middle constructions that do not have a counterpart in Arabic but rather a form derived from the basic verb stem.
- to understand and analyze why verb classes behave as they do with respect to causativization and whether there are any (semantic) matches between English and Arabic causatives.

Research problem

In addition to the above hypotheses, the study will also be concerned with the following general question raised by Pustejovesky (1991) – *"whether we are any closer to understanding the underlying nature of verb classes, why the classes develop as they do"* – as we will attempt to see whether the Arabic data shed any light on this question.

The morpho-syntactic properties of morphological causatives in Arabic and English and their developments will be examined in detail. The means for expressing causation in Arabic (gemination, ablaut and prefixation by a-) will however be the main focus of the study.

Many recent studies fail to take into account the richness of Arabic morphology in this area. One of the problems that needs to be looked into in more detail is the correlation between the meaning and the form of the verb (root, stem, derivative). Levin and Rappaport Hovav (1995) point out that in many languages the causative form of the verb is morphologically unmarked. This is true in English, as we can see in examples (9-11) where (a) is unaccusative and (b) is causative:

(9) a) The window broke.
b) John broke the window

(10) a) The pot cracked.
b) Mary cracked the pot.

(11) a) The ice melted.

b) The sun melted the ice.

However, the morphological unmarkedness observed with English causatives is not the case in Arabic, where all causative verbs are morphological derivatives of the stem of the verb. Due to this flexible system of derivation, the Arabic language can create different derivational forms of the verb by gemination, ablaut, and prefixation by a-, each of which brings a different semantic value to the verb. Lecompte (1968) affirms that :

> L'arabe possède un procédé original pour exprimer par dérivation des procès de plus en plus nuancés par rapport au sens de la racine, représenté le plus souvent par le verbe trilitère que nous connaissons, et que nous appelons conventionnellement « de première forme ». Il consiste à construire sur la racine, grâce à des préfixes, à des infixes ou à des redoublements, selon des schémas immuables, des « formes verbales dérivées » exprimant toujours la meme nuance de sens par rapport à la racine, ou au verbe de forme I."
>
> (Lecompte,1968:68)
>
> [Arabic has an original means of expressing by derivation processes that are more and more nuanced in relation to the meaning of the root, represented most often by the well-known triliteral verb stem, and that we conventionally call "Form I". It consists in building on the root, using prefixes, infixes or reduplication, following stable patterns, "derived verbal forms" always expressing the same nuance of meaning with respect to the root, or to the Form I verb]
>
> (Lecompte,1968:68)

These derivational forms are very important in the verb-complement relation in Arabic, as sometimes a given form does not require a complement whereas its derivational form does, and a form can sometimes even require two complements. Hence the "basic" verb undergoes not only a morphological modification after derivation but also a semantic change, thus producing a new meaning with the new form of the verb. Although in Arabic there are 14 different forms of the verb, in this study we will limit ourselves to the three forms that can express causation: gemination, (12), prefixation by a-, (13) and ablaut, (14). Note that the (a) examples are all intransitive (I) and the (b) examples are transitive causative (T):

(12) Gemination

a) خلى البيت (I)

xalā l-bayt-u

be-vacant the-house-NOM

The house is vacant.

b) خلّى أصحابي البيت (T)

. xallā ʾaṣḥāb-ī l-bayt-a

vacate-PRET friends-my the-house-ACC

My friends vacated the house.

(13) Prefixation by a-

a) ذاب الثّلج (I)

dhāba al-thalju

melt-PRET the ice

The ice melted.

b) أذابت الشمس الثلج (T)

α-Dhāba-FEM al-shamsu al-thalja

melt-PRET the sun the ice

The sun melted the ice.

(14) Ablaut

a) حزِن الولد (I)

hazina al-waladu

be sad the boy

The boy is sad.

b) حَزَنَ الخبر الولد (T)

hazana al-khabaru al-walada

make-PRET sad the news the boy

The news made the boy sad.

Our research will build on the study of geminated and ablauted causatives carried out by Hallman (2006), on the study of all three forms including prefixation by *a-* done by Ford (2009), and on Glanville's research (2018) into prefixation and gemination. It will examine the causative use of the three forms under study in the context of its relation to other possible uses of these forms. The three forms of Arabic causatives will also be compared to English verb classes, especially those allowing middle constructions.

A basic distinction will be made here between lexical and morphological causativization. Lexical causation does not involve any special form of the verb to express causativization, this notion being expressed rather by the meaning of the verb itself. The verb *kill* is a good example of lexical causativization, as the notion of causativity is not formally expressed but is part of the semantic content of the verb. On the other hand, morphological causativation involves a morphological process or a derivational morpheme like the prefix *a-* in Arabic, where the derivative verb is causative, as in example (15) below, where (15a) is intransitive and (15b) causative:

(15)

a)	خرج	(15) b) أخرج
	xaraja	a-xraja
	leave	to drive out

The main problem to be addressed with ablaut is whether verbs derived by this process should be treated as lexical or as morphological causatives. Ford (2009) offers the following table as a visualization of the application of ablaut to the second syllable of the word:

(16)

CaCiCa
CaCuCa
CaCaCa

→ CaCaCa

Some verbs can occur in all three forms (with three different middle vowels) and remain intransitive in all three, with no change into causative, as in (17):

(17)

حسُن	HaSuNa	Be beautiful
حسِن	HaSiNa	Be beautiful
حسَن	HaSaNa	Be beautiful

These forms are treated as dialectal variants by grammarians like Ibn Manzur (1300) and Sibawayh (1988). In *lisan al-arab* (1300), Ibn Manzur explains the chronological change of the diacritics of this verb from a tribe to another. However, some individual speakers may use more than one of these forms. Above and beyond such empirical questions, there is the problem of how ablaut should be classified. Which form should be considered the basic form and which the derivative one? (17) also raises the question as to whether the three forms are perfectly synonymous and whether any semantic distinctions can be discerned between them.

This research will examine causativization in both standard and Koranic Arabic as well as in a particular Arabic dialect. The Arabic language is characterised by its internal plurality: besides Modern Standard Arabic (MSA), it includes a wide variety of dialects that differ significantly from one country to another and even from one region to another. MSA is considered to be the official version of the Arabic language in Arabic countries. Most books are written in MSA and politicians use MSA in debates and speeches. It is the written form that is generally used in the press, media, and in official documents, and is taught in schools. Dialects, on the other hand, are almost only spoken. One of our goals will be to study how causativization works in the Tunisian dialect. While many efforts have been undertaken for the understanding of verb classification in MSA, the interest in studying dialects is quite recent and published works are relatively few. Causativation in the Tunisian dialect will be studied through informal textual content generated by Tunisian users of the internet (Forums, Facebook, Messenger, WhatsApp), as well as in a four-million-word on-line corpus.

Among the theoretical interests of this study, we think that such comparative research can play an important role in understanding verb classes from a semantic point of view, as most previous studies have been based mainly on syntax. We believe also that the study of this question should be informed by computational tools for lexicology and for large lexical databases.

Research methodology and data collection techniques

The Arabic language possesses a complex system of word formation and inflection. This system includes ten important verbal systems. Most of them involve systematic formal and semantic modifications of the basic verbal stem. Hence, the focal point of Arabic causativization strategies is morphological. With regard to data collection, four strategies will be used. Firstly, we will collect internet data where we can find natural spontaneous usage that reflects the way people actually speak. Secondly, the existing literature on the Arabic language will be thoroughly reviewed. Despite the paucity of scholarship available about causativization in Arabic, previous works will receive an in-depth review. Thirdly, a strategy of elicitation will be employed. Despite the researcher being a member of this linguistic community, it is also practical to bring in other Arabic native-speakers as informants, drawing on their intuitions, that is, seeking more consensus on issues under discussion. Finally, introspection: that is, appealing to the researcher's native speaker proficiency as a data source. As Newmeyer (1993) points out, "the typical practice of generativists has been to use themselves as informants in collecting data about the acceptability and interpretation of grammatical construals". In the first phase, each observed meaning will be recorded and colligated with all the other actual meanings of the form in order to reconstruct the potential meaning. After grouping the data from the examples, a comparison will be made with previous attempts at verb classification in order to determine which description affords a better understanding of causativization with Arabic verbs.

Organization of the thesis

The introduction introduces the motivations and objectives of this thesis with references to the problems posed and the hypotheses required in order to achieve its

goals. In addition, it explains the methodology to be used and the data collection techniques.

Chapter 1 will be devoted to transitive alternation and the distinction between causative alternation and middle construction alternation. This chapter will situate the thesis with respect to studies on causative and middle verb alternation. Furthermore, this chapter will review properties of middle sentences and considers how these constructions differ from causatives.

Chapter 2 will present an overview of the relevant features of the Arabic language on the phonological, morphosyntactic and semantic levels. It will examine issues relating to the properties of transitivity with reference to germination, affixation by *a-* and ablaut.

Chapter 3 will be devoted to the study of the three Arabic forms of causativization (germination, prefixation by *a-* and ablaut). It will describe the semantic content of each form: how each form functions and what it can express beside causativization. The focus will be on previous researches on Arabic causation.

Chapter 4 will introduce the data collection.

Chapter 5 will give an analysis of the corpus through studying the causativizing morphemes 'gemination' and '*a-*'.

Chapter 6 will introduce and investigate the decausativizing three forms: Form V, Form VI and Form VII.

Chapter 7 will contrast causation within the three forms: ablaut, gemination (Form II) and prefixation with *a-*.

The conclusion will give an overview of the study, summarize the main findings and state the conclusions and prospects for further research.

Chapter 1 : Transitive alternation: Causatives vs. Middle Constructions

1.1. Introduction

The traditional notion of transitivity classifies verbs into two categories on the basis of whether the action denoted by a given verb is or is not 'transferred' from an active participant (an agent) to a passive participant from an active participant. According to Hopper and Thompson (1980) *"transitivity is traditionally understood as a global property of an entire clause such that an activity is 'carried over' or 'transferred' from an agent to a patient. Transitivity in the traditional view thus necessarily involves at least two participants (a view which we shall later qualify), and an action which is typically EFFECTIVE in some way."* (Hopper & Thompson, 1980, p251).

Naturally such transfer is possible with transitive verbs but not with intransitive ones, because the former has two arguments, whereas the latter has only one. However, in a number of languages there are verbs which do not lend themselves to a clear-cut categorization in terms of transitivity. For instance, in English the verbs *sink* and *drive* can be either transitive or intransitive depending on their syntactic environment as in examples (18) and (19) below, where (a) is transitive and (b) intransitive:

(18)

a) The artillery sank two ships.

b) The ship sank.

(19)

a) He drives this car.

b) This car drives well.

The difference in transitivity between the (a) and (b) sentences in (18) and (19) raises a number of questions which will be discussed later in section 1.3.

A related problem is the cross-linguistic status of transitivity. Some verbs which are classified as transitive in one language may behave as intransitive in another one and vice versa. In English verbs such as *laugh* are typically classified as intransitive as they do not require a direct object. In Arabic while 'dhahaka' (laugh) is classified as intransitive,

it can be transitivized by two morphological processes: gemination and prefixation by *'a-',* in which case it calls for a direct object as in the examples in (20) below:

(20)

a) dhahaka alwald
The boy smiled
b) dhah**h**aka alfilm alwald
The film made the boy smile
c) **a**dhhaka alfilm alwad
The film made the boy smile

The fact that intransitive verbs do not exhibit properties of a homogenous class in Arabic is an important field of research. Perlmutter (1978) explains this distinction by using the terms *unergative* and *unaccusative* to refer to agentive and stative intransitive verbs.

1.2. The Unaccusative Hypothesis in English and Arabic

An influential conception that has been adopted in many syntactic theories is the *Unaccusative Hypothesis* (UH) of Perlmutter (1978) which proposes a basic distinction between unaccusative and unergative verbs. For Perlmutter, the term *intransitive* encompasses a mixed group of non-transitive verbs like *die, fall, cry, sneeze,* or *read* that select a single argument. However, these verbs need to be classified. Hence, Perlmutter coins the two terms unaccusative and unergative as the two subclasses of intransitive verbs. When it is isolated from the sentence, we cannot predict whether a verb is unaccusative or unergative. Intransitive verbs are classified under these two categories according to the role of the agent in the sentence. Unergatives derive from underlying clauses with grammatical subjects but no objects and unaccusatives are derived from clauses with grammatical objects but no subjects.

(21)

a) The ship sank.
b) The enemy sank the ship.

(22)

a) The ice melted

b) The sun melted the ice

(23)

a) The plant grew

b) She grew the plant

(24)

Lynne smiles beautifully.

(25)

He died.

(26)

It belongs to Peter.

In the first series of examples (21-23) we can see that the entity which is the subject in (a) undergoes the action in (b). So, the predicates of these clauses, argued to be unaccusative, entail a *patient-like* meaning for their subject arguments in (a). In contrast, in the second series of examples (24-26), the subjects are not construed as undergoing an action of being made to smile, die or belong. The predicates, argued to be unergative, call for *agentive meaning* for their subject arguments. However, these classes cannot be taken to be valid across all languages. Dowty (1991) argues that *certain verbs with meanings like: bleed, suffer, to be afraid, talk in a delirium can be observed to behave as syntactic unaccusatives in one language, but unergatives in another one*. The examples in (27) are given by Dowty (1991) citing Rosen (1984: 64-67) to illustrate the linguistic variation of this classification between languages:

(27)

	Unergative	**Unaccusative**
'Die'	Choctaw	Italian
'Sweat'	Italian	Choctaw
'Bleed'	Italian	Turkish, Eastern Pomo
'Suffer'	Italian	Choctaw

‘Be hungry’	Lakhota	Choctaw
‘Sneeze’	Italian, Dutch	Eastern Pomo, Choctaw

In the examples in (27), we can see that a verb[2] can be either unergative or unaccusative but cannot be both unergative and unaccusative at the same time. One problem that can be observed with the Unaccusative Hypothesis in Arabic is that the same verb may occur in different pre-syntactic forms and can be intransitive or transitive after prefixation. In (28), we add to the list of Dowty (1991) some Arabic verbs and classify them according to our, initial, personal application of the Unaccusative Hypothesis to Arabic verbs:

(28)

Unergative	**Unaccusative**
(ذاب, dhāba, melt) *Arabic*	English, *Arabic* (ذوّب, dhawwaba, melt)
(غرِق, gharika, sink) *Arabic*	English, *Arabic* (غرَّق, gharraka, sink)
(ضحِك, dhahika, laugh) *Arabic*, English	*Arabic* (ضحّك, dhahhaka, make s.o laugh)

The examples above in (28) are problematic for the Unaccusative Hypothesis in Arabic, as verbs that seems intransitive can be transitivised through a lexical change. One may say that Perlmutter has not provided a detailed semantic diagnosis of the classification based on the meaning of those verbs in other languages and this classification seems to be questionable: one wonders whether it applies only to morphologically unchanged forms as in English or to forms that have undergone morphological change.

According to Perlmutter (1978) and Perlmutter and Postal (1983), unergatives select cognates of *have* and unaccusatives select cognates of *be* as their auxiliary in perfect aspect constructions. However, contrary to this assumption, Dowty (1991) affirms that Zaenen (1988*) claims that for Dutch, unergatives select the perfect auxiliary zijn “be”*

[2] **Verb** in this thesis refers to a word used to describe an action, state, or occurrence, and forming the main part of the predicate of a sentence.

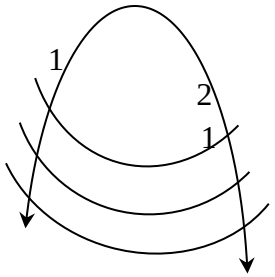
while unaccusatives select "hebben" "have"(Zaenen, 1988, p.606). The non-existence of the auxiliaries "be" and "have" in languages like Arabic raises questions as to how the classification into unergative and unaccusative could be operationalized in this language based on Perlmutter's Unaccusative Hypothesis.

Besides the association of different perfect-aspect auxiliaries with unergatives and unaccusatives, another diagnostic employed by the Unaccusative Hypothesis is the impersonal passive. In most languages that allow impersonal passives, only unergatives may undergo impersonal passivization. The ability to undergo this transformation is a frequently used test to distinguish unergative and unaccusative verbs. This universal characterization of passivization is attested across languages. Accordingly, Perlmutter and Postal (1983) give the following characterization of passives (29):

(29)

> If (i) the Relational Network for a clause Q has a nominal that bears the 2-relation in the stratum in which some nominal N_b bears the 1-relation, and (ii) if N_a bears the 1-relation in the following stratum, the Q is a passive clause. Thus, any clause in any language whose relational network contains a subpart of the form (38) [(38) is repeated here as (30)] is a passive clause.

(30)



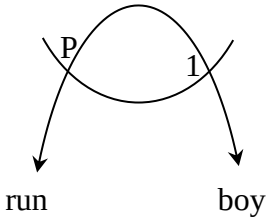
This universal characterization of passivization will be used as a basis for testing the validity of Perlmutter's Unaccusative Hypothesis on Arabic in the next section of this chapter. In terms of strata, according to the UH, initially intransitive strata are of two types: unaccusative and unergative. By way of illustration, let us consider sentences (31) and (32):

(31) The boy ran

(32) The roof collapsed

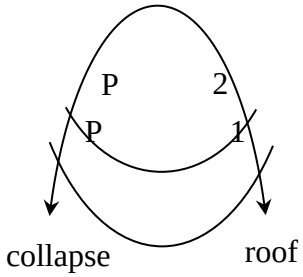
As the verb "*run*" in (31) is unergative, the unergative stratum will have a 1-arc but no 2-arc. Sentence (31) will thus be associated with the strata diagram (33):

(33)



However, as sentence (32) contains an unaccusative verb, its initial stratum contains a 2-arc rather than a 1-arc. This type of strata is illustrated in diagram (34):

(34)



These diagrams can be interpreted based on the principle that:

(35)

> Every clause with an unaccusative stratum involves an advancement to 1. (Perlmutter 1978: 161-66).

Having examined one of the important hypotheses for the classification of intransitive verbs into unergatives and unaccusatives, in the next section we will focus on the difference between unergatives and unaccusatives in English and Arabic.

1.3. Unaccusativity vs Unergativity in Arabic and English

In this section, we will see that, as in English, in Arabic we can classify verbs into unaccusative and unergative. However, it will be argued that Arabic fails to show a clear distinction between unaccusatives and unergatives.

In Arabic, there exist two types of verbs which select just one argument (i.e., which are intransitive). Consider the following examples:

(36)

نام الولد **(unergative)**

Nāma al-waladu

Sleep-PRET the boy

The boy slept

(37)

غلى الماء **(unaccusative)**

Ghalā al-ma'u

Boil-PRET the water

The water boiled

1.3.1. Tests for unergativity and unaccusativity in Arabic

I will apply three tests to determine the validity of the classes of unaccusative and unergative verbs in Arabic.

1.3.1.1. Argument structure for unergatives vs. unaccusatives

It is argued in English that the subject of the unaccusative is an underlying object, but that the subject of an unergative selects an agentive role.

This idea seems to be supported by the Arabic unergatives and unaccusatives in the examples below:

(38)

الولد يغلي الماء

Al-waladu yaghli al-ma'a

The boy PRESENT-is boiling the water

(39)

*****ينام الرجل الولد

Ynāmou al-rajulu al-walad

Present-Sleep the man the boy

*The man sleeps the boy.

Example (38) shows that we can add another argument to the verb *ghala.* This verb can select an object. However, sentence (39) is ungrammatical. It is impossible to add another argument to the verb *nāma*. The object in the sentence (38) can play the role of the subject, whereas the object in (39) cannot replace the subject. Hence, these examples prove that *nāma* is unergative and *ghāla* is unaccusative. The verb 'ghala' in Arabic is different from English 'boil' in that the English verb is morphologically identical in its intransitive and transitive uses, whereas the Arabic verb has the prefix *'a-'* in its transitive use, and this morpheme is an autonomous lexical unit that refers to a sense.

1.3.1.2. Expletive there

A second test in English to distinguish unaccusatives from unergatives is the use of "expletive *there*". It is possible to use "there" with unaccusative verbs, however, it is ungrammatical to use "there" with unergative ones. In this sense, it is possible to produce sentences like (40) but not (41):

(40)

There sank a ship.

(41)

*****There sneezes a boy.

However, there-insertion test advocated by the generativists seems to be limited and not valid as the verb *sleep* is unergative but it allows there-insertion as in (42):

(42)

In a faraway palace on a downy bed s slept a lovely princess.

(Duffley, 2018)

The reason why *slept* can be used in this construction is explained by Duffley (2018) due to its locative character as a construction that situates a figure in a previously defined

ground: sleeping implies a sleeping-place; it evokes to a locative character. However, sneezing does not.

The Arabic equivalent for “there” is “yujadou”. Let us apply this test to Arabic verbs by means of the examples (43) and (44):

(43)

* يوجد ولد يعطس

Yujadu waladun ya’tisou

There a boy sneezed

*There sneezed a boy

(44)

يوجد مركبٌ يغرق

Yujadu markabun yaghriku

There sank a ship

We can conclude from these examples (43-44) that Arabic coincides with English in the use of the “expletive there” and as a result, the verb *“atasa” (sneeze)* does not allow the use of “yujadu” (there), but, the verb “gharaka” (sink) permits the use of “yujadou’ (there). Hence, “atasa” (sneeze) is unergative whereas the verb *“gharaka”* (sink) is unaccusative.

1.3.1.3. Ism maf’uul (the name of the object affected)

A last test will be what is called in Arabic literature ‘ism maf’uul” (the name of the object affected) or passivization. If Arabic verbs can really be classified into unaccusatives and unergatives, the “ism maf’uul” will only be generated from unaccusative verbs which can assign an object argument, and not from unergatives. Here are the relevant examples:

(45)

***** الولد منوم

Al-waladu manuum

The boy has slept

*****It has been slept

(46)

الماء مغلي

Al-ma’u maghlii

Water has boiled

The water has been boiled

It appears from these examples that the subject of sentence (38), which has an unaccusative verb, can bear the morphological derivation to be “ism maf’ul” (the object affected) as in (46). However, on the other hand, the subject of sentence (39), which has an unergative verb, cannot be passivized as shown in (45). This fact provides the basis for the generative analysis of the subject of the verb *nāma* (sleep) as being generated in spec of VP position, and the subject of the verb *ghalā* (boil) as being generated in object position. Thus, it is another indication that *nāma* (sleep) is unergative and *ghalā* (boil) is unaccusative. It should be noted however that, even in the generative framework, one might argue that (46) is derived from the transitive form in (38) and not from the intransitive use in (37). Moreover, on the more general methodological level, one can question the validity of inferring the function of the noun ‘al-mau’ (the water) in (37) from its function in a different sentence, (38).

The previous tests show that Arabic verbs can be classified into unergatives and unaccusatives. Despite this possibility of classification of Arabic verbs according to the “Unaccusative Hypothesis”, the richness of Arabic morphology makes it difficult to draw a clear distinction between unaccusative verbs and unergative ones.

A further distinction will be made between causatives and middles in the next section.

1.4. Middle Constructions vs. Causatives

1.4.1. Middle Constructions

Ever since Perlmutter and Postal's (1983) work, there has been constant interest in the problem raised by transitivity alternations. This transitive/ergative (or causative/inchoative) alternation exemplified in (47a) and (47b) must be distinguished from another alternation, the transitive/middle alternation exemplified in (48a) and (48b).

(47)

a) The artillery sank two ships.

b) The ship sank.

(48)

a) I read this book.

b) This book reads well.

Prima facie, we notice that constructions like (48b) seem to be more constrained than constructions like (47b). Syntacticians like Bassac and Bouillon (2006) argue that syntactically middle constructions need an adverbial, and that semantically the time reference is not specified. Thus, they treat adverbial modification and genericity as identifying characteristics of middle constructions: genericity and adverbial modification. However, neither of these turn out to be essential characteristics[3] of these constructions, as the data of actual usage contains numerous cases both where there is no adverbial as in (49-51) and where the time reference is specified, as in (52)

(49)

Please ensure that the address reads through the window in the envelope.

(50)

This chair folds.

(51)

If it packs or ships, we've got it.

[3] More counterexamples are given in the next subsections (1.4.1.1, 1.4.1.2 and 1.4.1.3) where we study the characteristics of the middle construction.

(52)

The fabric tore when I pulled it.

1.4.1.1. Genericity

Syntactically speaking, it is argued that in middle constructions the agent theta-role is not projected in the syntax. Hoekstra & Roberts (1993) maintain that the external argument is present as pro, which in middles is syntactically inactive. Fagan (1992) holds that arbitrary arguments are saturated already in the lexicon and therefore need not project to syntax. He also argues that middles involve generic quantification over an implied argument (1992:154). Zwart (1998) for his part holds that no Agent appears in the interpretation, neither in the lexicon nor in the syntactic component. Condoravdi (1989) and Steinbach (2002), on the other hand, claim that an Agent can appear in the interpretation but nevertheless need not appear in the syntactic structure. The different analyses of middles can be grouped together on the basis of whether they argue that argument demotion/deletion (at some level of the derivation) is an inherent characteristic of middles. Semantically, a middle construction is a generic statement whatever the genericity of the surface structure subject may be – either a generic class as in (53a), or a specific referent as in (53b):

(53)

a) Minced food does not freeze well.

b) Your new hair dryer stores away neatly.

(examples from Bassac and Bouillon 2006)

For Keyser and Roeper (1984), the surface subject is generated as a deep object and then moves to its subject position to receive its case. These linguists consider the hypothesis that middles are derived from transitive verbs to be wrong because for them not every transitive verb can undergo middle formation. Moreover, according to them, middle constructions are normally non-eventive, in other words, they cannot appear in the progressive or the imperative, as shown in examples (54) and (55):

(54)

*This book is reading easily.

(55)

*Read easily, book!

However, Keyser and Roeper have not got the facts straight as far as the progressive is concerned, as sentence (54) is perfectly fine. Here are other examples of grammatical sentences (56-57) that disprove Keyser and Roeper's view:

(56)

I'm not finished the book but it is reading well so far.

(57)

The fabric is tearing.

For Keyser and Roeper, both the imperative and the progressive express a kind of activity/action. The observe that "middle predicates and stative predicates pattern alike and accordingly cannot occur in imperative or in progressive forms." However the verb *tear* in (57) is quite clearly an action, and (54) and (55) involve the developmental impression felt with actions in the progressive. According to Keyser and Roeper as well, a construction like (58) would be considered as ungrammatical as it contains a time reference:

(58)

*****This newspaper is reading better every day.

Again, this grammaticality judgement is not accurate as sentence (58) is perfectly grammatical and one can find examples like sentence (59) from a 2012 article by Matthew Fleischer intitled "*San Diego CityBeat* Hits 500 Issues, But Future Is In Doubt":

(59)

San Diego CityBeat hit a milestone this week, with the publication of its 500th issue. But while the paper is reading better than ever, it's struggling mightily on the financial end.

1.4.1.2. Modal qualification

According to pre-syntactic analyses, the Agent argument in middles is present in the lexicon and in the interpretative component, but not in the syntactic structure. Fagan thus argues that middles involve generic quantification over an implied argument (1992:154). The implied argument is interpreted as human, but with arbitrary reference. The interpretation, furthermore, attributes ability or possibility (i.e. a modal qualification) to the arbitrary argument (1992:54). A sentence like the one in (60), thus, is interpreted as in (61):

(60)

This shoe organizer mounts securely on a door or against a wall.

(61)

People, in general, can mount this shoe organizer securely on a door or against a wall.

Yet, Fagan's analysis is restricted as one can easily find sentences referring to a particular occurrence in the past and which are neither generic nor modal, as in the example:

(62)

The bike rack mounted quite easily- it only took me 15 minutes.

Massam (1992) and Spencer (1998) also propose that a middle should be defined in terms of genericity and modality properties. Even though genericity and modality properties are what the middle construction encodes, the latter is still semantically distinguishable from the generic passive. This distinction can be illustrated by the contrast between the generic passives in (63) and the middle constructions in (64):

(63)

a) These glasses are easily cleaned.

b) Bureaucrats are easily bribed.

c) This Japanese car is easily handled.

(Keyser and Roeper 1984:381)

(64)

a. These glasses clean easily.

b. Bureaucrats bribe easily.

c. Japanese cars handle easily.

For Keyser and Roeper, the surface subject is generated as a deep object and then moves to its subject position to receive its case. The motivation for this movement is that if the deep object did not move, this would result in a violation of the Case Filter as it would not be assigned case in its d-structure position. Both syntactic and pre-syntactic analyses of middles are based on the agentive interpretation of middles, recognized since at least Keyser & Roeper (1984). That is, in general, both syntactic and pre-syntactic analyses claim that an Agent is involved at some stage of the derivation.

According to Jingquan (2007), generic passives simply make generalizations of events. They are interpreted as if they contain a modal component which is not encoded. The interpretation is that if something is done, and done regularly, it can be done at any time. However, the interpretation of middle sentences is rather different: Jingquan argues that here the ability of reading in a use such as (48b) is neither encoded nor inferred, as it is in the passive. The semantic difference between middle constructions and passive constructions concerns a change of focus. Passivization focuses on the active object, but it does not change the relation between the participants and the verb. Middle constructions, however, do change the relation between the participants and the verb, as illustrated below:

(65)

The custard wasn't poured properly. (Passive)

(66)

The custard didn’t pour properly. (Middle)

In passive construction (65), *properly* modifies the unrepresented Agent, not the subject of the sentence, whereas in middle constructions (66), *properly* is understood to refer to certain qualities of the Theme subject. Semantically speaking, in sentence (65) it was the pourer's fault, whereas in sentence (66) it was the custard's fault or some other circumstantial aspect related to the 'pouring' event such us temperature.

1.4.1.3. Adverb selection

It has long been claimed that an adverb (or an adjective in some cases) is necessary for the well-formedness of middle constructions. The absence of an adverb may render the construction unacceptable, as illustrated in (67):

(67)

*****This book reads.

However, the idea of the necessity of an adverb for the well formedness of the sentence seems to be restricted, as we can produce sentences without an adverb that are grammatically correct, such as the following:

(68)

This meter reads. That one doesn't.

The adverbial paradigm is also strongly constrained; not all adverbs are acceptable with these constructions. Middle constructions in English mainly accept adverbs of manner, for example, *easily*, *well* and *smoothly*, etc. For this reason, Fellbaum (1986:27) points out that *adverbs of manner which are agentive-oriented are unacceptable in middle construction*. This restriction is depicted in the acceptability of (69a) and the unacceptability of (69b) below:

(69)

a) Neutrogena rinses away completely/easily/well.

(69)

b) *Neutrogena rinses away carefully/professionally/patiently.

Bassac and Bouillon (2006:32)

Jingquan (2007) argues that the absence an of adverbial in the middle construction is acceptable. He argues that negation as in (70), and sentential stress on the verb as in (71) evoke this type of information:

(70)

a) *This meat cuts.

b) This meat does not cut.

(71)

a) *This car drives.

b) I thought we were out of gas, but the car drives!

Jingquan argues that negation and stress add modality, i.e. one can encounter less obvious form of adverbial modification in middle constructions as in (72):

(72)

I took a self-portrait, but it would not develop.

(from The Idler 5, July–August 1994)

1.4.2. Causatives

In her book, Levin (1993) shows the correlations between the semantics of verbs and their syntactic behavior for a large set of about 3200 English verbs. More precisely, she observes that some facets of the semantics of verbs have strong correlations with syntactic behavior and with the interpretation of their arguments. She first delimits the different forms of relevant syntactic behavior. Each of these forms is described by one or more alternations. Then she proposes an analysis of English verbs according to these alternations: each verb is associated with the set of alternations that it undergoes. A preliminary investigation shows that there are sufficient correlations between certain

facets of the semantics of verbs and their syntactic behavior to allow for the formation of classes. From these observations, Levin then defines about 200 semantic classes of verbs in which all member verbs share a certain number of alternations. An alternation, roughly speaking, describes a change in the realization of the argument structure of a verb. She defined 79 alternations for English. They basically describe ‘transformations’ from a ‘basic’ form. However, these alternations have little to do with syntax, especially under the assumptions of Government and Binding and Movement Theory. The Transitivity alternations introduce a change in the verb's transitivity. The Causative/inchoative alternation is typical of this change. Verbs undergoing this alternation can roughly be characterized as verbs of change of state or position, as example (73) below shows:

(73)

a) John broke the window.

b) The window broke.

This type of alternation has been discussed extensively in the literature (Shibatani 1979, Levin 1993; Levin and Rappaport Hovav 1995, 2005; Schäfer 2008; Alexiadou 2010 among others). We present hereafter typical examples of the inchoative/causative alternation from English and Arabic:

(74)

a) The window broke

b) John broke the window

(75)

a) The ship sank

b) The enemy sank the ship

(76)

a) إنكسر الشباك

Inkasara al-shubbak

INCH-Break-PRET the window

The window broke.

b) كسر الولد الشباك

Kasara al-waladu al-shubbak

CAUS-Break-PRET the boy the window

The boy broke the window

(77)

a) غرِق المركب

Gharaka al-markabu

INCH-Sink-PRET the ship

The ship sank

b) غرَّق العدُوّ المركب

Gharraka al-aduwwu al-markaba

CAUS-Sink-PRET the enemy the ship

The enemy sank the ship.

c) أ غرِق العدُوّ المركب

Agharaka al-aduwwu al-markabu

CAUS-Sink-PRET the enemy the ship

The enemy sank the ship.

In the (a) sentences the verb is intransitive: there is no causer of the event, and if there is one, it is not explicitly specified. However, in the (b) sentences the verb is transitive and the causer of the event is explicitly mentioned. We notice that the verbs that alternate in English are homophonous, with the same morphological form being able to be either transitive or intransitive. On the other hand, the morphological form of the alternating verb in Arabic differs from the transitive to the intransitive use. Interestingly, the prefix *in-* serves to eliminate causation when added to the stem, hence the verb

becomes intransitive as in (76a), while the use of gemination or prefixation by *a-* serves to express causation, and accordingly, the verb becomes transitive as in (77b) and (77c).

In this thesis, we will be concerned with the second type of alternation where an inchoative verb in Arabic is made to be causative by a morphological change. The examples below show that the alternation is cross-linguistically productive (examples from Haspelmath 1993:89):

(78)

a) rasplavit'-sja	'melt (intr.)'	Russian
b) rasplavit'	'melt (tr.)'	

(79)

a) xajil-ax	'melt (intr.)'	Mongolian
b) xajil-uul-ax	'melt (tr.)'	

According to the previous examples, the alternating verbs are undergoing reverse word formation: in Russian, the inchoative verb is marked and derived from the causative verb, while in Mongolian, the reverse process is valid where 'uul' is considered to be the causative suffix; in other words, the causative verb is marked and derived from the inchoative verb. In Arabic, both of these processes are operations as shown in examples (80) and (81):

(80)

a) فتح الولد الشباك

Fataha al-waladu al-shubbak

Open-PRET the boy the window

The boy opened the window

b) إنفتح الشباك

In-fataha al-shubbak

Open-PRET the window

The window opened (alone/by itself)

(81)

a) عطس الطّفل

Atasa al-tiflu

Sneeze-PRET the boy

The boy sneezed.

b) عطّس الغبار الطّفل

attassa al-ghubaru al-tiflu

Make-PRET sneeze the dust the boy

The dust made the boy sneeze

In this thesis, we will be concerned with the second type of alternation where the causative form is marked and derived from the intransitive. One of the reasons for this choice is advocated by Haspelmath (1993) when he argues that *"there are independent semantic reasons to think that the causative member of the inchoative/causative alternation is semantically derived, while the inchoative member is semantically basic. Intuitively, it seems clear that A melts (tr.) B means 'A causes B to melt (intr.)', but B melts (intr.) does not mean 'B undergoes an action X of melting(tr.) B', because there is no external agent implied in inchoative verbs like melt (intr.). Thus, on purely semantic grounds we seem to be forced to conclude that causative verbs are derived from inchoatives*" (Haspelmath, 1993:89). Nevertheless, we think that these independent semantic reasons are not valid to explain how the inchoative member is derived from the causative in example (76). However, as mentioned before, this type of alternation will not be investigated in this thesis but will be left a field for further research. On the other hand, we will investigate whether gemination (77b) and prefixation by *a-* (77c) fit into these generative categories or not[4].

[4] i.e., whether they are derived from a more basic intransitive or not.

Following Haspelmath's analysis, in the causative alternation the inchoative verb is considered as the basic form and the causative as the derived one. The latter can be due to affixation, as in (82a), to auxiliary addition, as in (82b), or to stem modification, as in (82c).

(82)

a) Georgian	duy-s	'cook(intr.)'
	a-duy-ebs	'cook(tr.)'
b) French	fondre	'melt(intr.)'
	faire fondre	'melt(tr.)'
c) Arabic	darasa	'learn'
	darrasa	'teach'

The debate concerning the inchoative/causative alternation in the linguistic literature revolves around the opposition between *internal* and *external causation*. Levin and Rappaport Hovav (1995) introduce the notion of internal vs. external causation in order to account for the difference between verbs which have causative variants and those which do not. This idea was first introduced by Smith (1970), who defended the idea that alternating verbs encode eventualities that can be under the control of an external entity, whereas non-alternating verbs encode eventualities that are under internal control. For instance, the event denoted by the verb *dance* cannot be controlled by an external causer but only by the entity which is involved in the event. Levin and Rappaport Hovav (1995) use Smith's terminology but with a redefinition of the term 'control': they suggest the term *causation* instead of *control.* According to them, internal vs. external *causation* would account for the presence/lack of alternation better than internal vs. external *control*. They argue that the term *causation* already subsumes the notion of control without necessarily being equated to it. Moreover, control cannot account for the non-alternation of verbs like *tremble* and *blush,* as these verbs are not internally controlled but rather encode involuntary emotional reactions. Levin and Rappaport Hovav (1995) propose that all verbs undergoing the causative alternation are inherently transitive

and therefore have the causative Lexical Conceptual Structure (henceforth LCS) as in (83a), whereas intransitive change of state verbs which lack a transitive variant do not, as illustrated in (83b) below:

(83)

a) [x DO-SOMETHING] CAUSE [y BECOME <STATE>]]

b) [y BECOME <STATE>]

Levin and Rappaport Hovav designate the verbs with the LCS in (83a) as 'externally caused verbs' and the verbs with the LCS in (83b) as 'internally caused verbs.' The verbs in (83a) thus imply the existence of an 'external causer' with immediate control over bringing about the eventuality denoted by the verb (Levin and Rappaport Hovav 1995:92). With regard to the verbs corresponding to (83b), some properties inherent to the argument of the verb are responsible for bringing about the eventuality. Although in certain languages some externally caused verbs can leave the causer unexpressed, Levin and Rappaport Hovav (1995:53) argue that our knowledge of the world tells us that the eventuality that these verbs describe could not have happened without an external causer.

In this respect, two questions arise: firstly, how can Levin and Rappaport Hovav's terminology account for the causativization of Arabic verbs? In the Arabic literature, it is known that gemination and prefixation by *a-* are used to make the verb transitive and the causer explicit. Consequently, does a distinction between internal/external causation exist in Arabic? If it does, following Levin and Rappaport Hovav's analysis, how can we differentiate between verbs that are externally caused and verbs that are internally caused? Secondly, how can a verb such as *break*, which can be both transitive and intransitive, be encoded in the lexicon? In other words, do we have two verbs *break1* and *break2,* or do we have one basic form and a secondary derived form? If one assumes that there are two verbs, it means that they need to be listed in the lexicon as distinct individual items. The listing of each verb's different uses/senses is problematic as it would

mean that each novel use of a verb would require a different listing. According to Pustejovsky (1995), the enumerative lexicon model fails to explain a number of linguistic phenomena like sense extensions such as metaphor, metonymy, and the creative use of words; in other words, how can words take on a possibly infinite number of meanings in novel contexts? Finally, it fails to explain the expression of multiple syntactic forms: the fact that differences in syntactic realisations of words are accounted for by enumerating separate word senses for each syntactic type does not account for the relatedness that speakers feel between those word senses. Consequently, we conclude that alternating verbs are not independent verbs listed in the lexicon. This idea is obvious in Arabic where the transitive and intransitive forms of a given verb are both derived from one and the same stem: both the transitive (kas**s**ara- كسّر) and the intransitive (inkasara- إنكسر) are derived from the same root (k.s.r-ك.س.ر).

The debate about the basic variant has given rise to three competing approaches, namely the Intransitive approach, the Transitive approach and the Common approach. As will be seen below, in the Intransitive approach, the intransitive form is regarded as the basic form and is expected to be morphologically unmarked, while in the Transitive approach, the transitive form is considered the basic form, and the intransitive form is the derived one and is therefore expected to be morphologically unmarked. The Common approach, on the other hand, proposes that both variants are derived.

1.4.2.1. The Intransitive approach

The intransitive approach, also known as the causativization approach received a great deal of attention in the 60s and 70s from Lakoff (1965), McCawley (1968) and Dowty (1978). From a Generative Semantics point of view, Lakoff assumed that the meaning of a given verb can be decomposed into some kind of lexical representation. Lakoff's assumption is that English verbs should be treated within a derivational approach. In other words, unaccusative verbs are treated as basically monadic (inchoative), and the dyadic (causative) variant is derived by means of a causativization process.

After analysing a series of sentences, Lakoff proposes the idea that two sentences like (84) and (85) below have the very same deep structure:

(84)

The soup cooled.

(85)

John cooled the soup.

He argues that (84) differs from (85) in having an abstract verb with the feature +INCHOATIVE, whereas (85) has the main verb ‘cause’, ‘make’ or the semantically similar abstract verb whose feature is +CAUSATIVE, as shown in Figures (1) and (2):

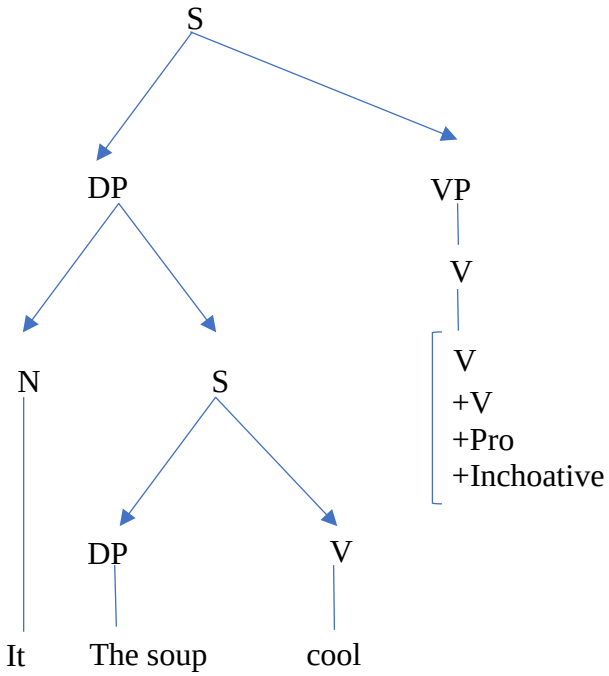


Figure 1: Lakoff’s (1965) inchoative analysis of sentence (74), quoted from Dowty (1979:43)

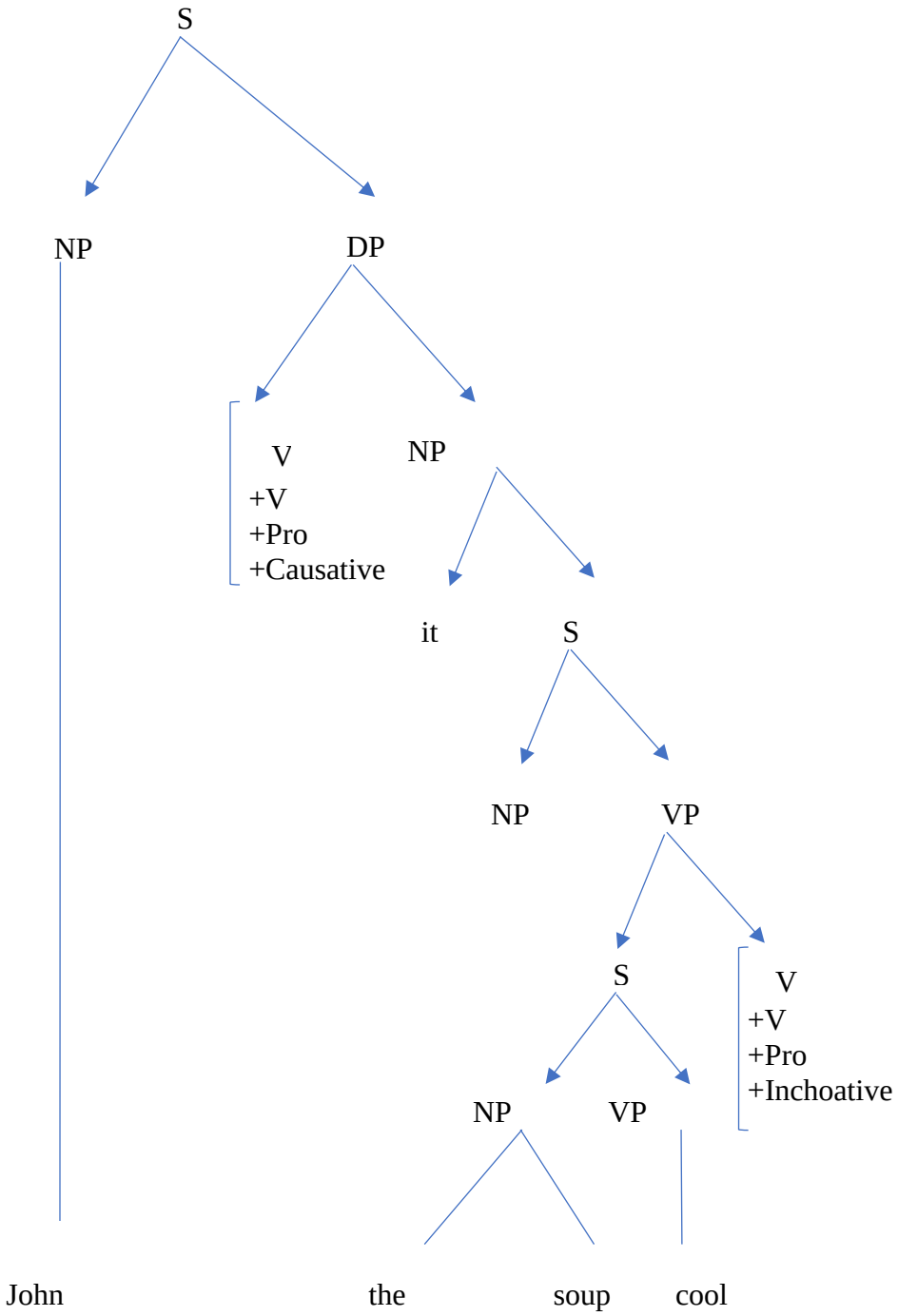


Figure 2: Lakoff's (1965) causative analysis of sentence (75), quoted from Dowty (1979:43)

Using the example of the verb 'kill', McCawley (1968) proposes that this verb is to be analysed into the components CAUSE, BECOME, NOT and ALIVE, as illustrated in Figure 3:

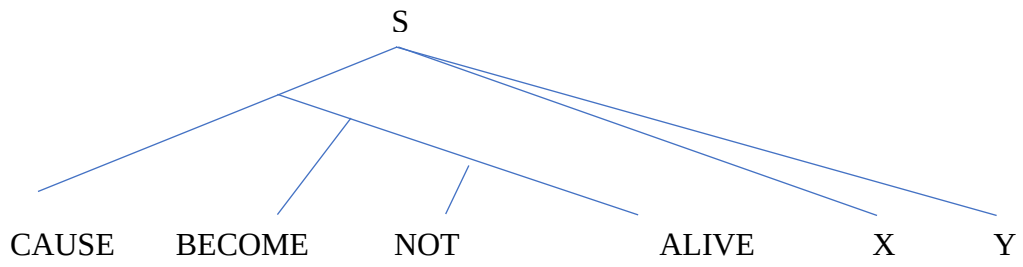


Figure 3: McCawley's analysis of the deep structure of the verb kill, from Dowty

He then proposes that from the same deep structure other English sentences could also be obtained based on an equation such as (*x causes y to become not alive, x causes y to become dead, x causes y to die, and x brings it about that y is dead*) (Dowty 1979:45).

Dowty (1979) is also a proponent of the intransitive approach. He proposes a decompositional analysis in which a causative rule derives transitive verbs from intransitive verbs and has the semantic effect of adding a predicate CAUSE to the representation of the intransitive form. To take Dowty's example of the verb *break*, the causative rule states that given $break_{intrs}$, there is a verb $break_{trans}$ and the corresponding translation rule states that the representation of $break_{trans}$ includes a predicate CAUSE, as shown in (86):

(86)

a) break $_{\text{inchoative}}$: λy [Become BROKEN (y)]

b) break $_{\text{causative}}$: λyλx [∃ P [P (x) Cause Become BROKEN (y)]]

(Dowty 1979)

1.4.2.2. The Transitive Approach

The defenders of the transitive approach (cf. Grimshaw 1982; Chierchia 1989/2004; Levin and Rappaport Hovav 1995; Reinhart 2002 among others) assume that this phenomenon is entirely lexical in nature. In her analysis of the causative alternation, Grimshaw (1982) proposes that a lexical operation of detransitivization does exactly the opposite of causativization. She argues that the causative version is the basic form, and the operation of detransitivization deletes the CAUSE predicate from the Lexical Conceptual Representation (henceforth LCR) as illustrated in (87):

(87)

(a) Causative [(x) CAUSE [BECOME BROKEN (y)]]

(b) Anticausative [BECOME BROKEN (y)]

However, a restriction criterion applies to this rule since the range of verbs that participate in the causative and the anticausative alternation varies from one language to another and within each language. Reinhart (2000, 2002) proposes a theta-system that builds on decomposition, but she assumes that lexical entries encode relations between a verb and its arguments. Reinhart proposes that theta-roles are encoded by two binary features, [+C/-C], expressing whether the argument in question is responsible for causing the verbal event or not.

Chierchia (1989/2004), proposes a different analysis of the causative and anticausative alternation which takes into consideration the fact that one may find reflexive morphology on anticausatives. He argues that anticausatives are basically transitive and the unaccusative variant is derived via the process of reflexivization. For Chierchia, in cases where no such reflexive morphology can be found, the reflexive operator is lexically incorporated into the meaning of the verb without any morphological reflexive (Chierchia 2004:42). He argues that anticausatives with no transitive variant are derived from some abstract transitive verb which is “frozen”. From the viewpoint of morphology, such accounts face analogous challenges to those of the Intransitive approach discussed earlier, since, in the Transitive approach, anticausatives are said to

be derived from a causative variant, and the morphology type found on anticausatives can be assumed to be the marker of the derivational process. However, a crucial question concerns how this approach would account for languages that mark their causative variant like Arabic.

Finally, after claiming that the transitive causative variant of an alternating pair is basic, Levin and Rappaport Hovav (1995) attempt to show how the intransitive variant is derived. They argue that the intransitive variant of an externally caused verb arises by binding the external cause within what they refer to as the *Lexical Semantic Representation* (LSR). Thus, they give the following representation for the verb *break* both in its intransitive and transitive variants (Levin & Rappaport Hovav 1995: 108):

(88)

(a) *Intransitive break*

LSR [x DO-SOMETHING] CAUSE [y BECOME *BROKEN*]

↓

Lexical binding ∅

Linking Rules ↓

Arguments <y>

(b) *Transitive break*

LSR [x DO-SOMETHING] CAUSE [y BECOME *BROKEN*]

Linking Rules ↓ ↓

Arguments x <y>

Thus, what Levin and Rappaport Hovav propose is that there is a lexical process, namely, lexical binding, which makes the cause of the event unavailable for argument structure. That is, the intransitive variants of the alternating verbs are monadic at the level of argument structure even though they are dyadic at the level of LSR. Nedjalkov (1969)'s study of the morphological relationship between causative and unaccusative variants of verbs such as *break* in sixty languages shows that, in more cases than not, the causative

variant is morphologically unmarked, “the intransitive form being identical to the transitive form” (Levin & Rappaport Hovav 1995: 88).

Although this study covers sixty languages, it is not valid for Arabic where the causative variant is morphologically marked. Hallman (2006) argues that the causative form is semantically, syntactically, and morphologically additive. Semantically, the causative form has a causative component that is not present in the unaccusative form. Syntactically, the causative form licenses an additional argument (the causer) not licensed by the unaccusative form. Morphologically, the causative form is typically marked. While not present in English, the morphological markedness of the causative form is evident in the three types of causative forms (gemination, affixation by a- and ablaut) found in Arabic, the language that this thesis is primarily concerned with. The ‘geminate’ causative is marked by doubling the middle consonant of the base; the ‘ablaut’ causative is marked by ablaut of the ‘stem vowel’, the vowel of the second syllable of the base.

We conclude that neither the intransitive nor the transitive approach can provide an explanation of the basic/variant form of the verb in Arabic alternation.

1.4.2.3. The Common Approach

Kratzer’s (1996) Common Approach proposes a conceptual source for verbal decomposition, elaborated by Pylkkanen (2002), Alexiadou et al (2006), and Schäfer (2008, 2009). Alexiadou (2010) claims that verbs are derived from category neutral roots by the addition of a verbalizing head in Marantz (1997)’s terms. The verb is claimed to be semantically closer to its internal argument than to its external argument. From the point view of semantics, the external argument is associated with the verbal event via a process called ‘event identification’. The verb combines with the external argument semantically via a compositional principle which identifies the event variables contributed by Voice[5], the verb and ‘Event Identification’ (Kratzer 1996:122). In other words, Kratzer (1996) argues that verb meanings are functions, and the agent argument is introduced by a functional head. She introduces the notion of Voice which is proposed in order to build

[5] The voice of a verb describes the relationship between the action (or state) that the verb expresses and the participants identified by its arguments.

into the syntax the semantic observation that verbs have an asymmetric relationship with objects and subjects. Thus, causatives have the decomposition in (89b) and anticausatives have the decomposition in (90b):

(89)

a) Frank breaks the window

b) [Frank [Voice [break the window]]]

(90)

a) The window breaks

b) [CAUSE [the window broken]]

Pylkkänen (2002) differs from Kratzer's (1996) postulate of an external argument with causatives, arguing that they are causative predicates without an external argument (in Schäfer 2007). She holds that it is the defining function of causativization to simply introduce an implicit argument ranging over causing events and to relate it to a non-causative event. We will not go any further into Pylkkänen's (2002) notion of Voice in this thesis. However, what is essential to mention is that semantically, Voice and CAUSE are always separate syntactically, and can either project their own syntactic heads or be tied together into a semantically complex head.

Finally, Alexiadou (2006) represents a compromise between Kratzer's (1996) and Pylkkänen's (2002) approaches to causative alternation. On the one hand, she argues that the causative alternation should be seen in terms of Voice and that alternation between causatives and anticausatives involves the same event decomposition, with a causative meaning-component present even in anticausatives. On the other hand, she contends that agentivity and causation are represented by different heads in the decomposition of causatives and that, following Kratzer (2005), the eventive head is the same in causatives and in anticausatives.

In Alexiadiou's view, there is no directionality to the causative/anticausative alternation, as none of the two constructions is directly derived from the other, both being derived instead from the same root. She proposes a decomposition of causatives as in (91) and of anticausatives as in (92).

(91)

The abstract decomposition of *causatives*

[DPext.arg VOICE [CAUS [√Root + DP theme]]]

(92)

The abstract decomposition of *anticausatives*

[CAUS [√Root + DP theme]]

Analogously to Alexiadou (2006), we adopt a semantic approach in which both causative and inchoative verbs are derived from the same root in Arabic. Unlike this author however, we will base the semantics that we will propose for these verbs on Langacker (2000:1)'s semiological principle, according to which the role of the linguistic sign is to symbolize conceptualizations. In addition, we will take into account the psychomechanical insight that language exists first as a potential which is deployed in actual uses to express particular experiences, as in Hirtle's (2007:24) representation below:

Language =	systemic potential	→	representing and expressing a given experience	→	sentence produced

(Hirtle 2007:24)

This entails that in order to explain the uses of gemination, ablaut and prefixation by *a-* to express causation in Arabic, the potential lying behind the uses of each of these prefixes combined with a verb must be uncovered. The method required to do this involves a careful and exhaustive examination of all of the uses of these three morphological devices in order to provide the empirical platform necessary in order to formulate plausible hypotheses about their potential meanings.

Chapter 2 : The Arabic language

2.1. Introduction

In the introduction it was stated that this study aims to investigate the applicability and the suitability of a semantic approach to account for transitive alternations in Arabic. In this chapter, we will explain the reasons for the choice of a corpus spanning Classical Arabic and Modern Standard Arabic (MSA). Then, we will show the richness of Arabic morphology and its effect on the Arabic verbal system. Finally, we will introduce the three forms of Arabic verbs that will be investigated in terms of their alternations in this study.

2.2. Reasons and Goals

The Arabic language is a vast treasure-house of linguistic and literary resources that extend back into the first millennium. Its grammatical tradition is over a thousand years old and contains analyses of extraordinary depth and sophistication. Many excellent and effective textbooks for teaching Classical Arabic and Modern Standard Arabic (MSA) exist, as well as published research on a range of topics in Arabic linguistics (e.g., phonology, morphology, syntax, variation theory), but information in English on MSA grammatical topics tends to be scattered, and if a complete answer to a question regarding contemporary usage is needed, sometimes a number of sources need to be consulted.

Since the seminal authority on the grammar of Classical Arabic, *Alkitaab* “The Book” by the Persian grammarian Sibawayhi in the eighth century, and up until the latest and most comprehensive works on Arabic (Fassi Fehri 1993; Badawi et al. 2004; Holes 2004; Ryding 2005; Versteegh 2006 – the general editor of the mammoth Encyclopedia of Arabic Language and Linguistics or EALL), studies of the Arabic verb system have always been at the forefront of any major grammatical endeavor. Thus, the Arabic verb has been under sustained and microscopic investigation for the past 13 centuries. These investigations are extremely varied and include scholars belonging to diverse eras and myriad schools of thought from Arab and Western linguistic traditions. However, the

wealth of information has been tainted with a major methodological flaw represented by the reliance on decontextualized samples of language. In other words, the overwhelming majority of investigations of the Arabic verb system from the era of Sibawayhi onward have analyzed verbal forms and their corresponding meanings on the basis of isolated samples represented by a very limited inventory of examples. Strictly speaking, most of the research on Arabic verbs has concerned its form, which means that it has tended to deal mainly with verbal morphology and syntax. And even though some linguists have tried to study verb meanings and their role in alternation, they have failed to explore the semantic aspect of verbal usage adequately. In our opinion, this shortcoming along with the total absence of any corpus on the basis of which the verbal system is probed, undermines to a large extent the accuracy of any conclusions relevant to the meaning and function of Arabic verbal forms.

2.3. An Overview of Arabic

Arabic is a Semitic language akin to Hebrew, Aramaic, and Amharic, and more distantly related to indigenous language families in North Africa. It possesses a rich literary heritage dating back to the pre-Islamic era, and during the rise and expansion of the Islamic empire (seventh to twelfth centuries, AD), it became the official administrative language of the Islamic empire as well as a leading language of international scholarly and scientific communication. It is today the native language of over 375[6] million people in twenty different countries as well as the liturgical language for over a billion Muslims throughout the world.

2.3.1. Classical Arabic (CA)

The beginning of the literary or Classical Arabic era is usually calculated from the sixth century, which saw a vigorous flourishing of literary language, especially in the public recitation and oral composition of poetry, a refined and highly developed formal oral art practised by all Arab tribal groups and held in the highest esteem. During the sixth century, the Arabic ode, or *qaSîda*, evolved to its highest and most eloquent form. It was

[6] https://www.birmingham.ac.uk/schools/lcahm/departments/languages/sections/lfa/about/arabic.aspx

characterized by sophisticated metrics and a highly conventionalized scheme of over sixty couplets all following an identical rhyme. The form of language used in these odes is often referred to as the standard poetic language or the poetic *koinè*, and there are conflicting theories as to its nature – whether it was an elevated, distinctive, supra-tribal language shared by the leadership of the Arabic-speaking communities, or whether it was the actual vernacular of one region or tribe which was adopted by poets as a shared vehicle for artistic expression. In particular, the debate has centered around the existence and use of desinential (i.e., word-final) case and mood inflection, a central feature of classical poetry but one which increasingly fell out of use in spoken Arabic, and which no longer exists in the urban vernaculars of today. In the seventh century AD, the Prophet Muhammad was gifted over a period of years (622–632 AD) with the revelation of verses which constituted a holy book, the Quraân, in Arabic, which became the key text of the new monotheistic religion, Islam. The text was rendered into an official version during the reign of the Caliph Uthmân (644–656 AD). From that time on, Arabic was not only a language of great poetic power and sophistication, but also permanently sacralized; as the chosen language for the Quraân, it became the object of centuries of religious study and exegesis, theological analysis, grammatical study and speculation.

Throughout the European medieval period, from the seventh through the twelfth centuries, the Arabic-speaking world and the Islamic empire expanded and flourished, centered first in Mecca and Medina, then in Damascus, and after in Baghdad. Arabic became an international language of civilization, culture, scientific writing and research, diplomacy, and administration. The vast empire eventually weakened under the growing influence and power of emerging independent Muslim dynasties, with inroads made by the Crusades, Mongol invasions from the East, and the expulsion of Muslims from the Iberian Peninsula in the West. Arabic remained the dominant language in North Africa, the Levant, the Fertile Crescent, and the Arabian Peninsula, but lost ground to indigenous languages such as Persian in the East, and Spanish in the West. The language era from the thirteenth century to the eighteenth is generally known as “Middle Arabic”. During this time, the Classical Arabic of early Islam remained the literary language, but the spoken Arabic of everyday life shifted into regional variations, each geographical area evolving a characteristic vernacular. The spoken variants of Arabic were not generally written down

and therefore not preserved or anchored in any way to formalize them, to give them literary status or grammatical legitimacy. They continued to evolve along their own lines, calibrated to the changes of everyday life over the centuries, but never reaching the status of separate languages.

2.3.2. Modern Standard Arabic (MSA)

The main form of Arabic under investigation here is Standard Arabic (henceforth SA), also known as Modern Standard Arabic (MSA), and Modern Literary Arabic (MLA). It is the uniform variety of Arabic which is used all over the Arabic-speaking world as the usual medium of written communication in books, periodicals, journals, magazines, newspapers, signs, business, and personal letters. It is also the formal means of communication in radio, television, lectures, sermons, debates, interviews, and in general on occasions accompanied by some degree of formality and solemnity, that is, it covers most forms of the formal spoken language. In many ways, SA continues, but only to a certain degree, the phonology, morphology, syntax and vocabulary of Classical Arabic, the revered language of the Holy Koran, pre-Islamic and post-Islamic poetry, literature, philosophy, theology, mathematics, sciences, and so on. It should be stressed, however, that although there is no clear-cut distinction between Classical Arabic, on the one hand, and SA, on the other, there are nevertheless cases where a distinction should be made. Indeed, the more we read classical Arabic grammar books (e.g., Sibawayhi 796, Ibn-Hishaam 1359, among many others) the more we notice differences rather than similarities. This interrelatedness is best characterized through a continuum with Classical Arabic on one end, and MSA on the other end. Each end contains the defining characteristics of each form, with different degrees of variation of the continuum in-between. Grammatical and lexical conservatism are hallmarks of MSA. Arabic language academies exist in several Arab capitals (Cairo, Damascus, Baghdad, Amman) to determine and regulate the procedures for incorporation of new terminology, and to conserve the overall integrity of MSA. Although foreign words are often borrowed into Arabic, especially for ever-expanding technical items and fields, the academies try to control the amount of borrowing and to introduce and encourage Arabic-derived equivalents. According to Versteegh (1997) *“from the start, the goal of the Academy was two-fold: to guard the integrity of the Arabic language and preserve it from dialectal and*

foreign influence, on the one hand, and to adapt the Arabic language to the needs of modern times, on the other."(p178)

One of the most complete descriptions of MSA is found in Vincent Monteil's *L'arabe moderne* in which he refers to "le néo-arabe" as "l'arabe classique, ou régulier, ou écrit, ou littéral, ou littéraire, sous sa forme moderne" [classical, or regular, or written, or literal, or literary, in its modern form] (1960, 25). That is, he understands "modern Arabic" to be the modern version of the old classical language. He also states that "on pourrait aussi le traiter d'arabe 'de presse', étant donné le rôle déterminant qu'a joué, et que joue encore, dans sa diffusion… " [it could also be called 'press' Arabic, given the decisive role that has played, and still plays, in its diffusion] (1960, 27).

Besides, Classical Arabic and Modern Standard Arabic, there exist many Arabic dialects. It is well-nigh impossible to give an exact number of dialects as there are many local variations. One of the most used ones is the "West Arabian Dialect": it is made up of the Arabian dialects of Algeria, Tunisia, and Morocco. They are very close to each other and almost identical. They are a bit hard to understand for other Arabs because they have been largely influenced by the French language due to the French colonization. The Tunisian dialect features Arabic vocabulary spiced with Berber and French words and phrases. It is also highly influenced by Latin languages such as Italian and Spanish, in addition to some Turkish loanwords. If one studies Tunisian Arabic, one will definitely notice the heavy influence from foreign languages as the Table in (93) below shows:

(93)

Tunisian Arabic	Standard Arabic	Origin	English
بوسطاجي /bɒstæʒɪ/	البريد ساعي	Turkish "postacı"	mail carrier
بانكا /bɑːnkæ/	بنك	Italian "banca"	bank[7]

[7] Refers to a financial institution.

راتصا /rɑːtsæ/	عرق،نسل	Italian “razza”	race[8]
برطمان /bɒrtmen/	شقّة	French “appartement”	apartment
ترينو /triːnu/	قطار	French “train”	train
برنوس /bærnuːs/	برنس	Berber “abernus”	burnous (cloak)
لاباس /lebes/	جيّد	Berber “labes“	fine, good
بلاصة /blɑːsæ/	مكان	Spanish “plaza”	place

In the research done for this thesis, databases and corpora of MSA have been investigated. The Koranic database also was used for data on classical Arabic.

2.3.3. Arabic Morphology

Arabic morphology exhibits a rigorous logic. It differs from that of English or other Indo-European languages because it is to a large extent based on discontinuous morphemes. It consists primarily of a system of consonant roots which interlock with patterns of vowels (and sometimes certain other consonants) to form words or word stems. Different vowels can be incorporated in order to differentiate meanings. The procedure of differentiating meaning by means of word-internal vowel change is known technically as “ablaut” or “introflection”. This process is illustrated by the stem (k-t-b/ ب ت ك) in (94) whose meaning englobes anything having to do with the action of writing.

(94)

he wrote	katab-a (v.)	كتب
he corresponded	kaatab-a (v.)	كاتَبَ
it was written	kutib-a (v.)	كُتب

[8] Referring to an ethnic group.

book	kitaab (n.sing)	كتاب
books	kutub (n.pl)	كُتُبٌ
writer	kaatib (n.)	كاتِبٌ
writers	kuttaab (n.pl)	كتّابٌ
writing	kitabatun (n)	كتابة
write!	uktub ! (v.)	أُكتب

An analogous case in English morphology referred to by Karin C. Ryding (2005) is the consonant sequences /s/…/ng/ correspond roughly to the concept of an Arabic consonantal root, whereas the vowels and affixes would correspond approximately to the Arabic concept of pattern. She observes that:

> If one looks at the consonant sequence s-ng, one knows that its meaning has to do with vocal music. By inserting different vowels into the vowel slot between the /s-/ and the /-ng/ several different English words can be formed:
>
> sing (v.)
> sang (v.)
> sung (v.)
> song (n.) (p 45-46).

However, Ryding's comparison does not apply perfectly to Arabic. In Arabic stems are divided into three separate consonants like /s/, /n/ and /g/ and not /s/ and /ng/.

As the primary focus of this research is not the Arabic morphology but rather the verbal system, we will not go in further details about the richness of Arabic morphology. However, the diversity of morphology in relation to the Arabic verbal system will be investigated in detail in the next section especially concerning the three forms of verb alternations under study here (gemination, ablaut and prefixation by *a*-).

2.4. The Arabic verbal system

There is still a paucity of studies that investigate transitive alternations in the Arabic verbal system; moreover, the few studies that have been done have privileged morphology and syntax over semantics. The theoretical framework adopted in the present study, the Psychomecanics of Language, thus offers the promise of filling a gap in the linguistic research on Arabic, as Hirtle (1985:65) observes:

> In order to fulfill its role, linguistics must observe and analyze human language in all its dimensions. That is, the following characteristics are necessary for a theory of language if it is to be commensurate with its object: (1) it must provide a place for both the Indo-European type and the other known types of language (the spatial dimension), (2) it must provide a method for analyzing language on both the diachronic and the synchronic axes (the temporal dimension), (3) it must provide a means for dealing with both the mental and the physical in language, both the meaning and the sign (the existential dimension), and (4) it must provide for an analysis of how both the word and the sentence are constructed (the operational dimension).
>
> Hirtle (1985:65)

The research presented in this thesis will investigate not only the syntactic aspect of the Arabic verb system, as in previous studies, but also and primarily the semantic dimension of the verb forms under study. It will become apparent that the English verb system stands in sharp contrast to the Arabic verb system. The reason is not hard to find. Whereas the verb plays an important and crucial role in the structure of the meaning conveyed by every English sentence, the Arabic verb plays a much more modest part. In fact, in Arabic, there are two major types of sentences: equational/nominal sentences and verbal sentences.

2.4.1. Nominal vs. Verbal sentences

The nominal sentence does not need to have a verb at all, as examples (95-97) show:

(95)

noun + adj.

التفاحة لذيذة

Al-tufahatu ladhidhatun

The apple (is) delicious

(96)

noun + prep + noun

الرجل في السوق

Al-rajulu fi al-suqi

The man (is) in the market

(97)

noun + active participle[9]+ prep. + noun

الرجل ذاهب إلى السوق

Al-rajulu dhahibun ila al-suqi

The man (is going) to the market

Some scholars consider a sentence to be nominal even if it contains a verb but the latter is not in first position. For example, example (98) is considered by these authors to be a nominal sentence as the verb is in second position:

(98)

الولد أكل التفاحة

Al-waldu akala al-tufahat.

The boy ate the apple.

In order to be verbal, the grammarians hold that the sentence must contain a verb in first position, as in example (99) below:

(99)

أكل الولد التفاحة

akala al-waladu al-tufahat

ate the boy the apple

[9] Refers to an ongoing or completed action in the active voice.

the boy ate the apple.

According to Karin .C Ryding (2005):

> Traditional Arabic grammatical theory divides sentences into two categories depending on the nature of the first word in the sentence. Sentences whose first word is a noun or noun phrase are termed jumal ismiyya (جملة إسمية) or 'nominal sentences,' and sentences whose initial word is a verb are termed jumal fifiliyya (جملة فعلية), or 'verbal sentences.' This first-word criterion is not based on whether the sentence contains a verb, but on whether the verb is initial or not.
> In the teaching of Arabic as a foreign language, however, a different distinction is often used for classifying Arabic sentences. This distinction is based on whether or not the sentence contains a verb. The English term "equational sentence" is used to refer to verbless predications. The term "verbal sentence" refers to predications that contain a verb. As Abboud and McCarus state, "Arabic sentences are of two types, those with verbs, called verbal sentences, and those not containing verbs, called equational sentences".
>
> (Ryding 2005: 58)

As our research deals with the alternations of Arabic verbs, the type of sentence which will be investigated is mainly the verbal sentence. In order to fully cover the data, however, we will treat all sentences containing a verb whatever its position.

The last distinction that should be made before going on to investigate the transitivity alternations in Arabic is the type of verb stem, as in Arabic there exist both triliteral and quadrilateral stems.

2.4.2. The Root of the Verb

Every Arabic verb has a lexical root, that is each verb is composed of set consonants in a specific order that embody a broad lexical meaning, such as the roots in examples (100) and (101):

(100)

to decorate	z-k-r-f	ز-خ - ر- ف
to mumble	h-m-h-m	ه - م - ه - م
to dominate	s-y-t-r	س- ي- ط- ر

to whisper	w-s-w-s	و - س- و س
to crystalize	b-l-w-r	ب -ل -و - ر

(101)

to go	d-h-b	ذ – ه- ب
to write	k-t-b	ك- ت- ب
to arrive	w-s-l	و- ص - ل
to hit	d-r-b	ض- ر - ب
to melt	d-w-b	ذ -و- ب

In Arabic, there are two different types of roots: some roots have three consonants, as in (101); some have four, as in (100). The three-consonant root is called a triliteral root and this is the most common type of root in Arabic. Roots which have four consonants are called quadriliteral roots, and they are less common. There exist ten forms of triliteral roots and only four of quadriliteral roots. As the purpose of this thesis is not morphological, we will not go into detail in listing these forms and in differentiating between strong and weak verbs. We will limit ourselves to the study of the transitive alternations of Arabic verbs that have triliteral roots. Quadriliteral verbs will be left as a field for further research.

2.4.3. Derived verbs

Derived verbs in Arabic are obtained through morphological processes such as adding the ‘causative’ prefix “أ” ‘a-’, doubling the middle consonant (gemination) and ablaut without any other changes to the root. As stated previously, the triliteral root may have ten different forms. In the table below, we introduce the ten forms of the triliteral verb that may occur in Arabic. In order to exemplify patterns or prosodic templates in Arabic, a model root “فَعَلَ “ (f-ʕ-l) is used so that any pattern can be formed by fitting vowels into it. The lexical root *f-ʕ-l* has the basic meaning of ‘doing’ or ‘making.’

(Active Voice)			
No additional letters	**Form I**	***faʕal(a)***	فَعَلَ
		faʕil(a)	فَعِلَ
		faʕul(a)	فَعُلَ
1 additional letter	**Form II**	***faʕʕal(a)***	فَعَّلَ
	Form III	*faaʕal(a)*	فَاْعَلَ
	Form IV	***'afʕal(a)***	أَفْعَلَ
2 additional letters	**Form V**	*tafaʕʕal(a)*	تَفَعَّلَ
	Form VI	*tafaaʕal(a)*	تَفَاْعَلَ
	Form VII	*infaʕal(a)*	اِنْفَعَلَ
	Form VIII	*'iftaʕal(a)*	اِفْتَعَلَ

	Form IX	*'ifʕall(a)*	اِفْعَلَّ
3 additional letters	**Form X**	*'istafʕal(a)*	اِسْتَفْعَلَ

Different forms of triliteral Arabic verbs

In this study, we will concentrate on the transitive alternation of Form I, Form II and Form IV.

2.5. Form I, Form II and Form IV

2.5.1. Form I

Form I فَعَلَ *faʕal(a)* expresses the general verbal meaning of the root in question. This form is considered as the base form because of its fundamental structure, it is being the simplest stem. The three root consonants are followed by vowels as in the examples in (102-104) below:

(102)

كَتَبَ	kat**a**ba	write
فَتَحَ	fat**a**ha	open
سَرَقَ	sar**a**ka	steal

(103)

شَرِبَ	shar**i**ba	drink
عَلِمَ	ʕal**i**ma	know
عَمِلَ	ʕam**i**la	work

(104)

كَبُرَ	kab**u**ra	to grow older/be big
ثَقُلَ	thaq**u**la	to be heavy
حَسُنَ	has**u**na	to be good/beautiful

Form I can have three different sub-forms depending on the middle vowels. Thus, if we consider (102) with *fatha* “a” as the original form, the two others would be considered as ablaut forms. The vowel in the examples is called *kasra* “i” in (103) and *dhamma* “u” in (104). We can summarize the structure of the three subforms of form I as CaCvCa where *C* is a *consonant* and *v* is a vowel. This latter can be *a*, *i* or *u.*

Form I is the closest indicator of the meaning of the lexical root. There are shades of meaning associated with the stem vowel differences in the past tense citation forms, but these semantic differences are very subtle. This form covers a wide semantic range and may be either intransitive or transitive. Some grammarians relate the transitivity of this form to the middle vowel. Bahloul M. (2008) argues that:

> The second vowel in the CVCV CV -pattern can be one of three: /a /, /i /, or /u /. The choice between these vowels is mostly determined by the verb’s valence. Accordingly, while the /a / vowel morpheme represents most frequently [+transitive] action verbs, the /u / vowel morpheme represents [+transitive/ +stative] verbs, and the /i /vowel morpheme typically denotes mental and psychological states with [+/- transitive] verbs.
>
> (Bahloul 2008: 33)

The question of the transitivity alternations of ablauted verbs will be investigated in detail in the next chapters.

2.5.2. Form II

Form II is characterized by the doubling of the second consonant of the triliteral stem. Form I CaCvCa changes to become CaCCaCa in Form II, as in the examples in (105-107) below: note that the doubling of the medial consonant is marked by what is called شدّة “chadda” in Arabic, which corresponds to the symbol “ّ “.

(105)

Form I	---------->	Form II
دَرَسَ		دَرَّسَ
darasa		darrasa
study		teach
كَسَرَ		كَسَّرَ
kasara		kassara
break		smash up

(106)

فَرِحَ	فَرَّحَ
fariha	farraha
be happy	make happy

(107)

حَسُنَ	حَسَّنَ
hasuna	hassana
be beautiful	make beautiful/to beautify

The repetition of the consonant is considered as evoking the repetition of the action and the intensity is the principal/potential meaning of Form II. Form II verbs are often causative and transitive. If Form I verbs are intransitive, they may become transitive in Form II. Kouloughli (1994) states that Form II is transitive 95 percent of the time. In addition, he states that Form II is *"l'une des plus vivaces de l'arabe moderne"* [one of the hardiest forms in modern Arabic] (p201). Form II verbs may also be ditransitive in some cases, as in the following example:

(108)

الرياضيات ابنه الرجل درّس

darrasa al-rajulu ibnahu al-riadhiyet

taught the man his son mathematics
the man taught his son mathematics.

Although most uses of Form II are causative-transitive, this verb pattern can also express repetition as in (109) and intensification as in (110):

(109)

وزّع الرجل الهدايا
wazzaʕa al-rajul al-hadaia
distributed the man the gifts
the man distributed the gifts (to different people)

(110)

كسّر الولد الشباك
Kassara al-walad alchobbak
Broke the boy the window (into pieces)
The boy broke the window (into pieces)

2.5.3. Form IV

Form IV is characterized by the prefixation of form I by "أ" "-a" which leads to the dropping of the first vowel of the first consonant, as shown in the examples below:

(111)

Form I	---------->	Form IV
جَخَرَ		أخْرَجَ
xaraja		a-xraja
to go out		to expel/to evict/to produce
كَتَبَ		أكْتَبَ
kataba		a-ktaba
to write		to dictate/to make someone write

جَلَسَ	أجْلَسَ
jalasa	a-jlasa
to sit	to seat (someone)

Form IV verbs are often causatives of Form I. If the Form I verb is intransitive, Form IV is transitive; if the Form I verb is transitive, Form IV may be ditransitive, taking two objects. Form IV verbs may have meanings similar to Form II verbs. Like Form II, Form IV verbs can express more than just the meaning of causation. For example, the verb أجْلَسَ 'to seat' in the third example in (111) expresses the movement of leading someone to their seat. Consequently, we will study the other possible meanings for Form IV verbs in the subsequent chapters.

It is worth mentioning the similarities and the differences between Form II and Form IV. A comparison between the semantic values of the two forms has been made by Kouloughli (1994). He explains that Form II has a factitive value and forms verbs from nouns. According to him Form II:

> a deux valeurs assez nettes sur l'ensemble lexique: la valeur factitive (avec une nette nuance conative que n'a pas la forme IV que nous verrons plus loin), et la valeur dénominative, qui consiste à former un verbe à partir d'un nom.
>
> [has two fairly clear values on the lexicon set: the factitive value (with a clear conative nuance that Form IV does not have and which we will see later), and the denominative value, which consists in forming a verb from a noun] (Kouloughli 1994: 201).

Kouloughli argues that Form IV verbs express the "purest" value of causation. He asserts that:

> cette forme est, elle aussi, largement transitive (à plus de 80%) … Quant à ses valeurs sémantiques, celle qui se dégage le plus nettement est celle de causative dans le sens le plus "pur", c'est à dire sans adjonction d'une valeur conative comme pour la forme II. On peut ainsi exhiber des contrastes entre forme II et forme IV dont le sens en français est très proche mais qui, en arabe, opposent nettement un causatif "pur" et un " factif-conatif:

Afhama	expliquer	fahham	faire comprendre
Axraja	sortir (qqch./qqn.)	xarraj	mettre dehors

aʕlam	informer	ʕallam	enseigner
asmaʕ	faire écouter	sammaʕ	faire entendre

(Kouloughli 1994: 204)

> [this form is also largely transitive (more than 80%)… As for its semantic values, the one that emerges most clearly is that of causative in the purest sense, i.e., without adjunction of a conative value as for Form II. We can thus observe contrasts between Form II and Form IV, the meaning of which in French is very similar but which, in Arabic, clearly oppose a “pure” causative and a “factive-conative:

Afhama	expliquer	fahham	faire comprendre
Axraja	sortir (qqch./qqn.)	xarraj	mettre dehors
aʕlam	informer	ʕallam	enseigner
asmaʕ	faire écouter	sammaʕ	faire entendre]

(Kouloughli 1994: p204)

This chapter has reviewed the basic semantic values of the three forms under study in this thesis as described in the grammatical literature. The potential and actual meanings of these forms will be investigated in detail in the next chapters.

Chapter 3 : Previous researches on Arabic Causatives

3.1. Introduction

Causative alternation has received attention from a member of scholars, especially alternation between Form II and Form IV, which are considered to be the main exponents of causation in Arabic. In this chapter, we will review the only previous studies on Arabic causatives that we are aware of.

3.2. Hallman (2006)

Levin and Rappaport Hovava (1995)'s approach to unaccusativity, unergativity and causativity has been very influential. Levin and Rappaport Hovav(1995) see the transitive as the basic alternative of causative alternation and the intransitive as a sort of "derivative" of the transitive. Their position is known as the causative analysis of unaccusative verbs, and is widely accepted in the literature, being defended by Perlmutter and Postal (1983), Dowty (1991) and many others. Levin and Rappaport Hovav (1995) point out that in many languages the causative form of the verb is morphologically unmarked. This is the case in English (and may be in other languages), as we can see in examples (112-114) where a) is unaccusative and b) is causative:

(112)

a) The window broke.

b) John broke the window

(113)

a) The pot cracked.

b) Mary cracked the pot.

(114)

a) The ice melted.

b) The sun melted the ice.

However, morphological unmarkedness is not the case for the causative in Arabic. Consider these examples below (115-116) (taken from Hallman's 2006 article):

(115)

a) خلى البيت

xalā l-bayt-u

Be-vacant the-house-NOM

The house is vacant.

b) خلّى أصحابي البيت

. xallā ʾaṣḥāb-ī l-bayt-a

Vacate-PRET friends-my the-house-ACC

My friends vacated the house.

(116)

a).حرُم الخروج عليه

ḥaruma l-xurūǧ-u ʿalay-hi

Be-forbidden the-leaving-NOM to-him

It is forbidden for him to go out.

b).حرَم الخروج عليه

harama ab-ū-hu l-xurūǧ-a ʾalay-hi

Forbid father-NOM-his l-leaving-ACC to-him

His father forbids him to go out.

These examples show that when a verb is causativized in Arabic, it undergoes a morphological change. The two morphological changes occurring in (115b) and (116b) are gemination and ablaut respectively. The 'geminate' causative is marked by doubling of the middle consonant of the base. The 'ablaut' causative is marked by ablaut of the stem vowel of the second syllable of the base.

To constitute a complete inventory of the forms used to express causation in Arabic, one must add to gemination and ablaut another morphological process-prefixation by α- as illustrated in example (117):

(117)

a) ذاب الثّلج

Dhāba al-thalj

Melt-PRET the ice

The ice melted.

b) أذابت الشمس الثلج

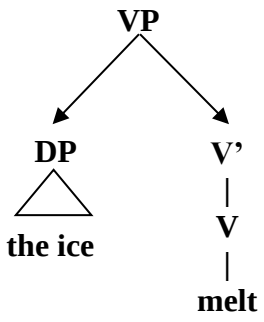
α-Dhāba-FEM al-shamsu al-thalj

Melt-PRET the sun the ice

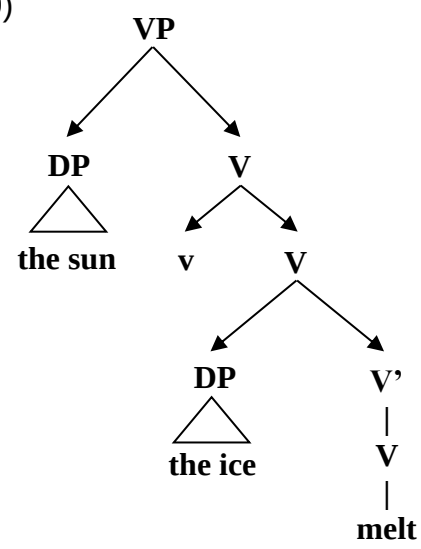
The sun melted the ice.

Hallman follows Chomsky (1995) in proposing a purely syntactic approach to explaining English causativation invoking what Chomsky terms a “little-vP”. The syntactic approach to causativation is represented in these two tree-diagrams, where (118) is unaccusative and (119) is causative:

(118)



(119)



Hallman (2006) comes to the conclusion that the causative/unaccusative alternation in English in cases such as (118) and (119) is the very same morphological process described as ‘ablaut’ in Arabic. He argues that English lacks a counterpart of gemination, and therefore does not allow the causativization of unergatives. However Hallaman’s analysis is seems to be limited. In view of Arabic facts, the failure of unergatives to

causativize in English ican be chalcked up to a lexical gap. The particle V_{gem} does not exist in English.

One question which is neglected by Hallman is the existence of different causative forms for one verb. Consider the following examples:

(120)

a) ذاب الثّلج
Dhāba al-thalj
Melt-PRET the ice
The ice melted

b) ذوّب الرجل الثّلج [gemination]
Dhawwaba al-rajulu al-thalj
Melt-PRET the man the ice
The man melted the ice.

c) أذابت الشمس الثلج [prefixation by *a*-]

Adhāba-FEM-PRET al-shamsu al-thalj
Melt-PRET the sun the ice.
The sun melted the ice.

(121)

a) غرِق المركب
Gharika al-markab
Sink-PRET the ship
The ship sank

b) غرَّق العدُوّ المركب [gemination]
Gharraka al-aduwwu al-markab
Sink-PRET the enemy the ship
The enemy sank the ship.

c) أغرقت العاصفة المركب [prefixation by *a*-]

Aghraka-FEM-PRET al-asifatu al-markaba

Sink-PRET the storm the ship

The storm sank the ship.

These examples show that an Arabic intransitive may be causativized in two different ways. In (120), ***dhāba*** can be causativised to *dhawwaba,* as in (120b) or to ***adhāba,*** as in (120c). In the same way in (121), *gharaka* has two causative forms: *gharraka* in (121b) and *aghraka* in (121c). Thus, an intransitive Arabic verb can have two different lexical forms when it becomes transitive: (i) doubling of the second consonant or (ii) prefixation by *a*. This morphological difference between causative verbs in Arabic correlates with a semantic distinction which will be the core of our focus in the subsequent chapters.

3.3. David Ford (2009)

A second approach to causativity in Arabic is that of Ford (2009). In addition to Hallman (2006)'s two causative categories (gemination and ablaut), Ford (2009) adds the third form just mentioned above - prefixation by *a*-, as in (122) below:

(122)

a) حضر الرجل

Hadara al-rajul.

Present the man.

The man is present.

b) أحضر الرجل الافطار

a-hdara al-rajul al-iftar

Bring the man the dinner

The man brought the dinner

Ford (2009) treats ablaut as a complex form which is a variation of Form I obtained by regularizing the middle short vowel to /a/ as in the following examples:

(123)

ħaz**i**na ‘to be sad’ → ħaz**a**na ‘to make s.o. sad’

ħar**u**ma ‘to be prohibited’ → ħar**a**ma ‘to prohibit s.t.’

fal**a**ta ‘to be released’ → fal**a**ta ‘to release s.o.’

An important question arises however as to why Ford considers ablaut to be a form of causation, given the example (124) below with an ablauted verb that is not causative in meaning:

(124)

حسُن	Hasuna	Be beautiful
حسِن	Hasina	Be beautiful
حسَن	Hasana	Be beautiful

In order to obtain a causative here, gemination must be applied; to obtain the form *hassana* expressing the causative notion ‘to beautify’. Ford assumes that there are no differences between the three forms expressing causation. If that is the case and if languages are “economical”, why do we find more than one causative form for the same verb in Arabic as the examples below show?

(125)

حزِن	hazina	to be sad	intransitive
حزَن	hazana	to make sad	transitive causative (Ablaut)
حزّن	hazzana	to make sad	transitive causative (gemination)
أحزن	ahzana	to make sad	transitive causative (prefixation)

Ford examines the three forms of causation in isolation from their context, which restricts the ability to investigate the precise meanings of these forms.

3.4. Peter John Glanville (2018)

Glanville (2018) only considers two of the three forms capable of expressing causation in Arabic. He calls them *pattern II faʕʕala* (form II-gemination) and *pattern IV ʔafʕala* (form IV-prefixation by *a-*) and makes a semantic distinction between the two patterns. Although both can express causation, Glanville (2018) classifies verbs that belong to pattern IV as verbs of causation and actionalization, and verbs that belong to pattern II as verbs of repetition. According to him, therefore, the main form dedicated to the expression of causation is prefixation by *a-,* as in the following examples (Glanville 2018, p 111):

(126)

dahika ‘to laugh’ int	ʔaḍhakʿa ‘to make laugh’ trns
ẓahara ‘to appear’ int	ʔaẓharά ‘to show; to demonstrate’ trns
daara ‘to revolve’ int	ʔadaara ‘to turn’ trns
samiʕa ‘to hear’ trns	ʔasmaʕa ‘to tell; to cause to hear’ ditrns
raʔaa ‘to see’ trns	ʔaraa ‘to show’ ditrns
nasiya ‘to forget’ trns	ʔansaa ‘to make forget’ trns
daxala ‘to enter’ trns	ʔadxala ‘to insert’ trns
ġariqa ‘to drown, sink’ int	ʔaġraqa ‘to drown; to sink’ trns
waṣalά ‘to arrive’ int/trns	ʔawṣalđto ‘take to’ trns
θaara ‘to revolt, rise up’ obl	ʔaθaara ‘to arouse’ trns
ʕaada ‘to return’ obl	ʔaʕaada ‘to return, take back’ trns
waqafa ‘to stand still’ int	ʔawqafa ‘to stop’ trns
fasada ‘to spoil, corrupt’ int	ʔafsada ‘to spoil, corrupt’ trns
ðaaba ‘to melt’ int	ʔaðaaba ‘to melt’ trns

However, he explains that many other senses can be expressed by this form which will be discussed in the next section.

In contrast to prefixation by *a-*, gemination is basically used to express repetition:

(127)

ṣafaqa	'to clap' int	ṣaffaqa	'to applaud' int
dalaka	'to rub, stroke' trns	dallaka	'to massage' trns
ðabaḥa	'to slaughter' trns	ðabbaḥa	'to massacre' trns
qatala	'to kill' trns	qattala	'to massacre' trns

Glanville (2018) devotes two separate chapters to the two forms. One chapter is intitled causation and actionalization in which he examines the different actual senses of Form IV (*ʔafʕala)* given that causation and actionalization are considered to be the potential meaning of this form. The other chapter deals with Form II and treats repetition as the basic meaning of gemination.

3.4.1. Pattern IV (Prefixation)

Glanville (2018) gives eight possible senses for Form IV, summarised in the table below (128):

(128)

Possible Senses of Form IV	Examples from Glanville (2018)
1.Marked Causative	• fasada 'to spoil, become corrupt' int →ʔafsada 'to spoil, corrupt' trns • ðaaba 'to melt' int →ʔaðaaba 'to melt' trns
2.Giving and sending	• quṭʕa 'plot of land' →ʔaqṭa ʕa 'to give land, allot' ditrns • xabar 'news' ʔ → axbara 'to inform' ditrns

3.Activated state	• ḥaasan ‘good’ →ʔaḥsana ‘to do well’ int/trns • sayyiʔ ‘bad’ →ʔasaaʔ a ‘to do badly; to mis-’ int/trns • xaaṭiʔ ‘wrong’ → ʔaxṭaʔa ‘to do wrong; to mis-’ int/trns
4.Base as product	• naʤiib ‘noble’ →ʔanʤaba ‘to give birth, beget, bear sth. noble’ int/trns • zahr ‘flower’ → ʔazhara ‘to flower, blossom’ int • θamar ‘fruit’ → ʔaθmara ‘to bear fruit’ int
5.Base as goal	• baḥr ‘sea’ → ʔabḥara ‘to go to sea; to set sail’ int • ṣabaaḥ ‘morning’ → ʔaṣbaḥa ‘to become morning; to become’[10] int/trns
6.Movement	• rasila ‘to flow freely’ int →ʔarsala ‘to let flow; to send’ trns/trns+obl • daara ‘to revolve’ int → ʔadaara ‘to turn’ trns
7.Result state	• ḥasan ‘good’ → ʔaḥsana ‘to do well’ int/trns • ḥaqqa ‘to be right, true’ int → ʔaḥaqqa ‘to tell the truth; be right (about)’ obl • baʕiid ‘far’ → ʔabʕada ‘to take away’ trns • ḍaʕiif ‘weak’ → ʔaḍʕafa ‘to weaken’ trns
8.Activated disposition	• ṭaaʕa ‘to be subservient’ obl → ʔaṭaaʕa ‘to obey’ trns

Glanville’s eight possible senses of Form IV

The different senses of Form IV explained in the table above can be grouped together into two major senses: causative (in 1) and actionalization (in 2-8). All eight senses involve the idea of active movement towards a goal or a result of some kind. In the causative sense, the causer moves the causee into the state denoted by the stem. In

[10] Here is an example illustrating the more general sense of ‘become’: *asbaha al-rajul ganiyan* (‘the man became rich’).

the giving/sending sense, an object is transferred into someone else's possession. In the activated state sense, the quality denoted by the stem is the goal of the action; in the base as product sense, the action results in the production of the entity denoted by the base; in the 'base as goal' type of use, reaching the base is the goal; in the movement sense, the movement is understood to be oriented in a certain direction; in the resultant state sense, the stem denotes the state resulting from the action; and in the activated disposition sense, the action manifesting the disposition is oriented towards a person or a thing to which the action demonstrates the disposition. To summarise in Glanville (2018)'s words:

> Actionalization is a term adopted from Talmy (2000) to refer to a mental operation whereby a static concept is incorporated into an activity. For example, the base verb bariʕa 'to be innocent' is static, and this concept is actionalized in causative barraʕa 'to absolve'. Similarly, inert silaaḥ 'weapon' is incorporated into an action in sallaḥa 'to arm'. In contrast, causatives formed from base verbs that already denote actions tend to be formed in pattern IV, hence daxala 'to enter', already dynamic, is causativized as ʔadxala 'to put in, insert'. The function of pattern IV also extends beyond causation to derive verbs in which the agentive subject simply acts, as with ʔaqdama ' to act boldly, embark upon' , from qaduum 'bold', ʔawraqa ' to burst into leaf ' , from waraq ' leaf ' , and ʔabḥara ' to go to sea' , where the base noun is baḥar ' sea'.
>
> (Glanville 2018: 109-110)

In contrast to other previous studies, Glanville uses a word-based approach to derivation grounded on a semantic perspective. He examines not only causative verbs derived from a base verb by means of Pattern I, but also verbs derived from nouns and adjectives. He comes to the conclusion that "*Words sharing the same consonants are related by an abstract meaning, but this cannot be taken to mean that they are all derived from a consonantal root that is paired with this abstraction.'* (p 134). And he explains the efficiency of word-based approach *"A word-based approach can easily explain this by asserting that each verb is derived from a different base. In a root-based approach there is only one base however, the root, and so there is no way to account for the different meanings of these derived verbs." (p 134).*

In this study, we will go further in the meanings expressed by Form IV (prefixation by a-) and can add three other senses to those given by Glanville. These three actual senses are respectively ‘exposure’ as in (129), ‘removal’ as in (130), and ‘enabling’ as in (131). Here are examples for each of these actual senses of Form IV:

(129)

a) اقتلت زيدا

ʔ*aktal*-tu zayd

Exposed-I to killing Zayd

I exposed Zayd to killing

b) أبعت الدار

ʔabaʕ-tu aldar

Exposed-I to selling the house

I exposed the house to selling

(130)

a) اقذيت عين زيد

ʔakdhay-tu ʕayn Zayd.

Removed-I dirt eyes Zayd

I removed the dirt from Zayd’s eyes.

b) أعجمت الكتاب

ʔʕjam-tu alkitab

Removed-I the ambiguity the book

I removed the ambiguity from the book (by putting the inflections and the dots)

(131)

a) أحلبت الرجل

ʔahlab-tu alrajul

Helped to milk-I the man

I helped the man to milk (the cow or something else)

b) أحفرت الرجل البئر

ʔahfar-tu alrajul albiʔr

Helped to dig-I the man the well

I helped the man to dig the well.

In (129a), it is significant that the verb ʔaktala does not denote the action of killing; rather it means that the speaker exposed Zayd to killing. The glottal stop ʔ (a-) means here that the subject exposed the object to the action whether the latter is fulfilled or not. Thus, there is a notion of movement directed towards the realization of killing implied in the sense of exposure. In sentences (130a) and (130b) there is also an idea of movement, this time towards a state of separation between two entities. Enabling also involves movement – by cooperating with the person helped, one moves them towards the achievement of their goal.

3.4.2. Pattern II (Gemination)

Glanville argues that Pattern II faʕʕala (gemination) is typically labelled as intensive, iterative or incremental. He proposes that gemination has the basic meaning of repetition and that this sense can be divided into three sub-uses: repeated division, repeated reconfiguration, and incremental change. On the one hand, the early Arabic grammarians relate Form II to actions carried out with great energy or vigor, or in an extended manner, for events extending over time or space. On the other hand, Greenberg (1991) concludes that Pattern II marks verbal plurality, which, following Swadesh (1946), he breaks down into temporal repetition, spatial dispersion, action by many, and action on many. The linguistic marking of repetition on the Arabic verb results in a reduplicative construction (Inkelas 2005; Inkelas and Zoll 2005), a linguistic pattern in which two semantically identical constituents are brought together. The current reduplication construction is characterized by gemination of the second consonant to produce Pattern II faʕʕala. It is conceivable and perhaps likely that this pattern was predated by full reduplication, whereby the

base word was repeated in its entirety. Miller (2003) provides several examples of full reduplication in Juba Arabic of Southern Sudan, among them *gáta-gáta*, literally 'cut-cut', which mirrors the repetitive nature of the event described through total repetition of form. The verb pattern faʕʕala, where reduplication is only partial, may well be a reduced form of such a construction. Glanville concludes that:

> Whether or not this speculation is correct, the important point is that faʕʕala and its reflexive counterpart tafaʕʕala involve reduplication of some portion of the base verb from which they are derived, namely its middle consonant, and that they construe an action that is reduplicated or repeated over time or space. They are therefore iconic, since repetition in an event is matched by repetition of phonological material.
>
> (Glanville 2018: 137-138)

3.4.2.1. Repeated division

Geminated verbs that denote repeated divisions have the semantic feature of multiple division whether this division is partial or total. The object of each Pattern II verb divides more than once, with each individual event phase being one instance of an externally controlled division, repeated within an event of breaking up, scattering, etc., as in the examples in (132) below:

(132)

a) حَطَّمَ الكِبَرُ الرَّجُلَ (Trns.)
Hatama al-kibaru al-rajul
Broke the old age the man
Old age broke the man

b) حَطِمَ الرَّجُلُ (Int.)
Hatima al-rajulu
Became weak the man
The man became weak.

c) حطّم الرَّجُلَ الزُّجَاجَ (Trns.)

Hattama al-rajul alzujaj

Broke into pieces the man the glass

The man broke the glass (into pieces).

In the above sentences, we notice that the root *h-t-m* can be transitive as in (a) and intransitive as in (b), however it is transitive in (c) because of gemination. In (b) ***hatima*** evokes of the man breaking down, dissolving, becoming more and more broken. With Form II, in (c) we notice multiple instances of division occur with an external controller that brings them about. And in (a), ***hatama*** expresses the idea of a complete breaking down of the man.

3.4.2.2. Repeated configuration and motion

Geminated verbs of repeated configuration and motion involve change of configuration or location. The event described by these verbs involve a repetition of a certain movement. A participant bends, turns, or contracts repeatedly, or moves from one point to another as in the example below:

(133)

a) نقل الرَّجُلُ إلى منطقة بعيدة

Naqala al-rajul ʔila mitakat baʕ*idat*

Move the man to a far place

The man moved to a far place

b) نقّل الرجل الأثاث

naqqala al-rajul al-athath

moved (many times/things) the man the furniture

The man moved the furniture around (many times/in many instances).

Examining sentences (a) and (b), we notice that in (a) there is only a single phase embodied in the movement of the man to a far place; however in (b) there a plural-

phase with the movement of many things at many different times. The idea of plural-phase is also obvious with the verb جمع ʤamaʕa ‘to gather’ which means ‘to amass’ with Form II جمّع ʤammaʕa.

3.4.2.3. Incrementality

Glanville argues that repeated actions can be punctual or durative. The verb كسّر *kassara* ‘break into pieces’ can convey plural divisions that occur simultaneously or can be construed as evoking a single operation of division repeated consecutively. This latter is termed *incremental*, where the action creates the notion of progress by degree. This notion is exemplified in (134):

(134)

a) مشى الرجل
maʃa al-rajul
walked the man
the man walked.

b) مشّى الرجل إبنه
maʃʃa al-rajul ibna-hu
walked the man his son
the man slowly walked his son.

The difference between (a) and (b) does not lie in duration, as both of the action may take time. However, (a) refers to continuous movement and (b) to slow steps covering the distance in increments.

To conclude, Glanville assumes that Pattern II (gemination) presents either concurrent or consecutive event phases. He concludes that:

> faʕʕala has become the pattern of choice for a derived causative in most spoken dialects. The changing function of faʕʕala is further evidence for a construction morphology in which verb patterns spell out semantic structures that deviate from prototypical transitivity. The pattern once signaled

> multiplication of the base action, accounting for verbs like mawwata ‘to die en masse’ and barraka ‘to kneel en masse’, from maata ‘to die’ and baraka ‘to kneel’ respectively. Many derived verbs, such as qaṭṭaʕa ‘to chop up’ and qattala ‘to massacre’ are causative, and the pattern has come to be associated with causation as a result.
>
> (Glanville 2018:161)

What is remarkable in Glanville’s analysis is that he studies causation with all forms of faʕala. In other words, not only intransitive verbs can be causativized, but also transitive verbs can express causation with gemination, whether they become ditransitive or remain monotransitive. However, he does not consider ablaut at all. Although its meaning can be argued to not be inherently causative- it seems to denote the idea of an action defined with respect to a (usually) resultant state- it is involved in the expression of causation in geminated forms, as gemination is always accompanied by ablaut. Consequently, its semantic contribution must also be examined something that will be done in the present study after the procedures for data collection and analysis have been described in chapter 4.

Chapter 4 : Data Collection

4.1. Introduction

As stated in the previous chapters, disagreement among researchers has mainly focused on which form is the basic one, i.e., which form is derived from the other. In this regard, three lines of argument action exist in the relevant literature: (1) causativisation approaches: Pesetsky (1995) and Hale and Keyser (2002) argue that the intransitive or anticausative form is the basic one and the transitive form is derived by causativisation, which adds the causer argument to the intransitive form; (2) decausativisation approaches: Levin and Rappaport Hovav (1995), Chierchia (2004) and Koontz-Garboden (2009) suggest that the transitive form is the basic one, whereas the intransitive is derived by decausativisation (a process that deletes the causer argument from the transitive); and finally (3) common-base approaches, where it is suggested that neither variant is derived from the other by a lexical rule or a syntactic transformation (Doron, 2003; Ramchand, 2008; Alexiadou et al., 2015, but, both causative and anticausative variants are derived from a common, category-neutral root (Schäfer, 2008; Alexiadou et al., 2015). In this study, we adopt a non-derivational approach (i.e., the common-base approach) to account for the alternation in Modern Standard Arabic (MSA) and Classical Arabic (CA), in which the two variants share a single root. The challenge is then to provide an analysis of the alternation which will account both for its productivity and for the constraints on its distribution.

In recent years, causal relations have become increasingly important for applications related to Natural Language Processing (NLP) such as Machine Translation and Text Generation. Causal relations occur between an event (the cause) and a second event (the effect). Though many of the cause-effect relations in text are implicit and have to be inferred by the reader, the Arabic language possesses a wide variety of linguistic devices for explicitly indicating cause and effect. Two significant ways of explicitly expressing cause and effect are causal[11] links and causative verbs.

[11] Refers to 'letters' used in Arabic to explain the cause-effect relation between the predicates.

4.1.1. Causal Links

Arabic features a set of bound particles that play a key role in indicating causation. They are referred to as proclitics and include: Purpose Lām (لام السببيّة), Causation Fa'a (فاء السببيّة) and Causation Ba'a (باء السببيّة). Hereafter we give an example of each type of particle:

(135)

وَجَعَلُوا لِلَّهِ أَندَادًا **لِّ**يُضِلُّوا عَن سَبِيلِهِ (Quran 14:30)

wa jaʕalou li-allahi andad **li**-yudhillou ʕn sabilihi.

And they have attributed to Allah equals to mislead [people] from His way.

(136)

درس الولد بجدّ **فـ**نجح

darasa al-walad bi-jid **fa**-najaha

studied the boy hard so (he) succeeded

The boy studied hard so he succeeded.

(137)

مات الولد **بـ**صعقة كهربائية

mata al-walad **bi**-saʕkat kahraba?iyat

died the boy with/because of an electric shock.

The boy died because of an electric shock.

Jawad Sadek and Farid Meziane (2018) point out that *"Proclitics are one of the most complicated and ambiguous particles in the Arabic language, as they have multifunctional roles and many semantics properties; some grammarians have counted more than 30 different purposes of them"*. (Jawad Sadek and Farid Meziane 2018:142).

The expression of causation by means of proclitics would constitute an interesting field of research in itself. However, in this thesis we will concentrate on the second type of device for expressing causation: causative verbs.

4.1.2. Causative VS anticausative verbs

Causative verbs are verbs whose meaning includes a causal element. As stated in the previous chapters, Arabic grammarians assume that there are three main forms that explicitly express causation: ablaut, gemination and prefixation by *a-*. They explain that there also are two forms that express anti-causativization[12], namely prefixation by *in-* and prefixation by *ta-*, as in the following examples:

(138)

a) كسر الولد الشباك

Kasara al-wald al-shubak

Broke the boy the window.

b) انكسر الشباك

In-kasara al-shubak

Broke the window

The window broke.

(139)

a) ذكر الاستاذ الاية

dakara al-ustad al-ayat

evoked/mentionned the teacher the verse

the teacher evoked/mentioned the verse.

b) تذكّر الطالب الاية

ta-dakkara-altalib al-ayat

remembered the student the verse

the student remembered the verse.

[12] In this thesis, anticausativization and decausativization refer to the same phenomenon whereby an inchoative verb is morphologically derived from its causative counterpart.

(140)

a) قتل الرجل اخوه

katala al-rajul akouh

killed the man his brother

the man killed his brother.

b) تقاتل الاخوان

ta-kaatala alakawan

fought (each other) the two brothers

the two brothers fought each other.

As the focus of this research is verb alternation, the corpora that we will be working on will be constituted of verb forms that express causation and anti-causation in order to determine the semantic value of each verb form in the various types of context in which it can be used.

4.2. The problem of the basic form

As mentioned above, there has been a debate in the literature over whether Arabic causatives are derived or non-derived. This raises the question of ‘‘whether the causative alternation depends on the existence of two independent lexical entries in the lexicon” (Zibin 2019:45). In the intransitive approach, the intransitive form is regarded as the basic form and is expected to be morphologically unmarked, while in the transitive approach, the transitive form is considered to be the basic form and the intransitive form is derived, so that the former is expected to be morphologically unmarked. Contrary to these two approaches, the common-stem approach proposes that there exists a basic form and that both variants (transitive and intransitive forms) are derived. The causative alternation in Arabic is best described from the perspective of the common approach, since the two

variants share a single root. Alexiadou et al. (2015: 18) observe furthermore that both causativisation and decausativisation approaches have certain problems in relation to the issue of which verbs alternate across different languages. For causativization approaches, internally caused events such as *blossom* constitute a problem since they do not causativise. For decausativisation approaches, verbs such as *destroy,* which in principle should alternate and yet do not, are problematic.

Haspelmath (1993) argues that in causative alternation, the inchoative verb is basic and the causative verb is derived and supports this hypothesis by the case of *darasa* 'learn' (basic form) and *darrasa* 'teach' (derived form). However, in Arabic both the form *darasa* 'learn' and the form *darrasa* 'teach' are derived from the basic stem 'd-r-s'. Alexiadou et al. (2005) observe that while the causative alternation is a semantically well-defined crosslinguistic phenomenon, languages show substantial variation in the morphological shape of the alternation to which neither of the derivational accounts can do full justice. The morphological variation found with the alternation does not support any direction of derivation in a compelling way.

4.3. Building the corpus

In this section, we present the corpora which we have investigated in order to attest and characterise potential and actual meanings for each verb form under investigation. The first step consisted in collecting the data for MSA and CA. The second step was data selection and filtering.

4.3.1. Limitations concerning the corpus

One of the major problems we faced in data collection was the scarcity of Arabic data with diacritics. Diacritics are essential to our study. They are not difficult to find in CA as most of the Quran has diacritics in order to facilitate learning and interpretation. However, diacritics are rare in MSA texts. Diacritics are necessary to study verb alternation as it allows the reader to distinguish between the different forms of the verb. In the examples below, we illustrate the indispensability of Arabic diacritics:

(141)

(a)

حزن الولد

Hazina al-waladu

Be sad the boy

The boy is sad.

(b)

حزَّن الخبر الولد

Hazzana al-khabaru al-walada

Make-PRET sad the news the boy

The news made the boy sad.

(c)

حزَن الولد على موت اخيه

hazana al-walad ʕla mawt akhih

grieved over the boy death his brother

the boy grieved over his brother's death.

Observing the stem (h-z-n) in the three sentences (a), (b) and (c) without diacritics, we would think it is the same verb in all three sentences. It would be difficult for a non-native Arabic speaker to understand that in (a) the verb is *hazina* (ablaut form), in (b) it is *hazzana* (the geminated form II) and in (c) is the verb in Form I (*hazana*). Consequently, we looked for a corpus with diacritics in order to be able to identify the presence of alternation in the verb form.

Another problem we faced in collecting the data was how to separate out the verb forms from other forms based on the same root or the same morphological device. For example, when we looked for verbs with gemination (form II), we were obliged to do manual filtering because our first searches obtained any word containing gemination (nouns, verbs, adjectives, adverbs, etc..). We proceeded in the same way in collecting the data for the other forms: prefixation with *a-* (form IV), prefixation with *ta-* (form V), prefixation with in- (form VII). The last problem to mention is that of intuition. The scarcity

of a large Arabic vocalised corpus (with diacritics) made it more difficult to identify the forms relevant to this study. Because of the absence of this type of corpora, we had to have recourse to intuition in order to identify whether a verb is causative or anti-causative. The fragility of intuition is brought out by Blanche-Benveniste:

> les études faites sur corpus, […], complètent utilement ce que nous enseigne la simple intuition sur notre propre langue. Comme l'ont remarqué tous les observateurs, cette intuition est parfois fragile, surtout pour les phénomènes peu étudiés, dont n'avons pas une représentation bien nette, et particulièrement pour les faits de variation.
>
> (Blanche-Benveniste 1996:28)

> [corpus study […] are a useful complement to learn from simple intuition about our own language. As all observers have experienced, intuition is sometimes fragile, especially for phenomena that have been little studied, of which we do not have a clear representation, and particularly for data that involves variation].
>
> (Blanche-Benveniste 1996:28)

The complexity of ablaut and the scarcity of clear examples made it difficult to study causative/anti-causative alternation involving ablaut. However, we preferred to take the risk of addressing this subject rather than simply ignoring it.

4.3.2. The Classical Arabic corpus (CA)

We extracted our data for classical Arabic from a vocalized CA corpus called the Quranic Arabic Corpus. The Quran is a significant religious text written in Quranic Arabic and contains 6,236 numbered verses (ayāt) divided into 114 chapters. The Quranic Arabic Corpus (QAC) is an annotated linguistic resource which shows the grammar, syntax and morphology for each word in the Holy Quran. The corpus provides three levels of analysis: morphological annotation, a syntactic treebank and a semantic ontology. In this study, we used the morphological search where one can specify the part of speech, the form, the root, the stem and the lemma, as shown in Figures 4 and 5 below:

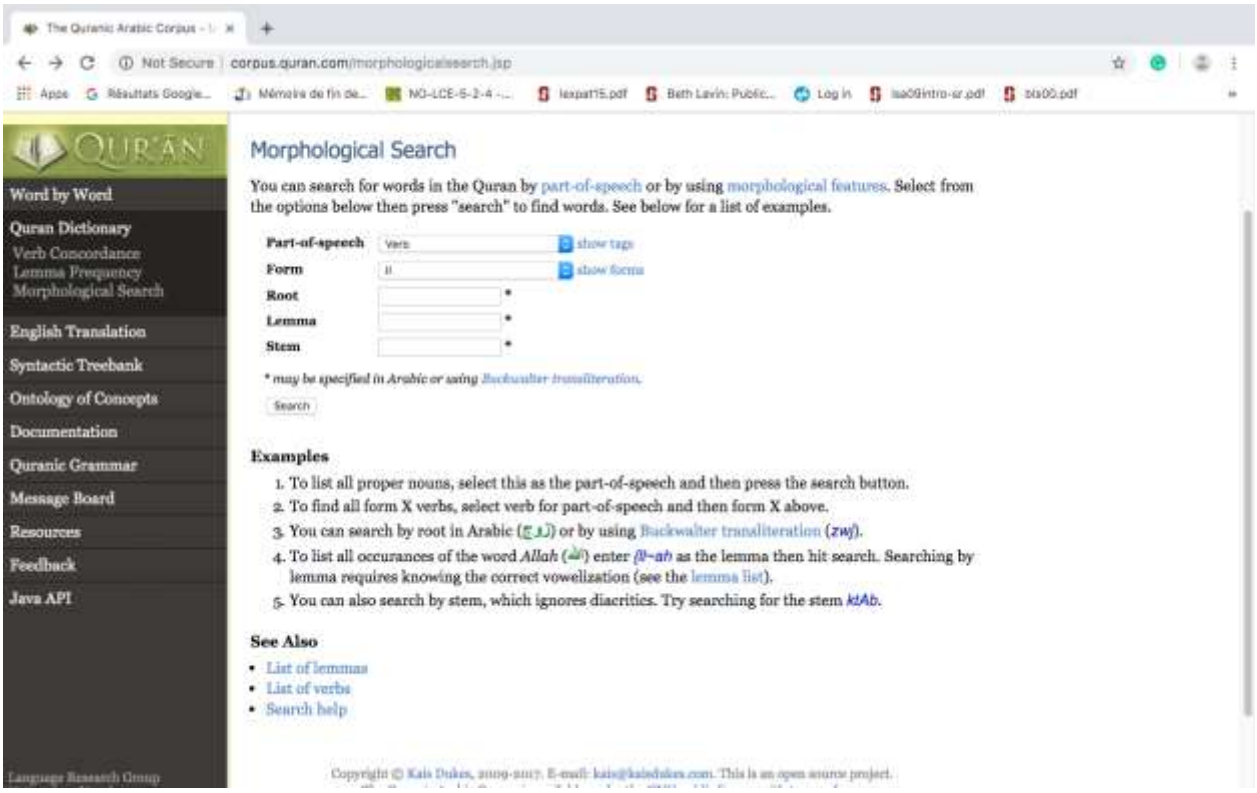


Figure 4: Morphological search in the QAC

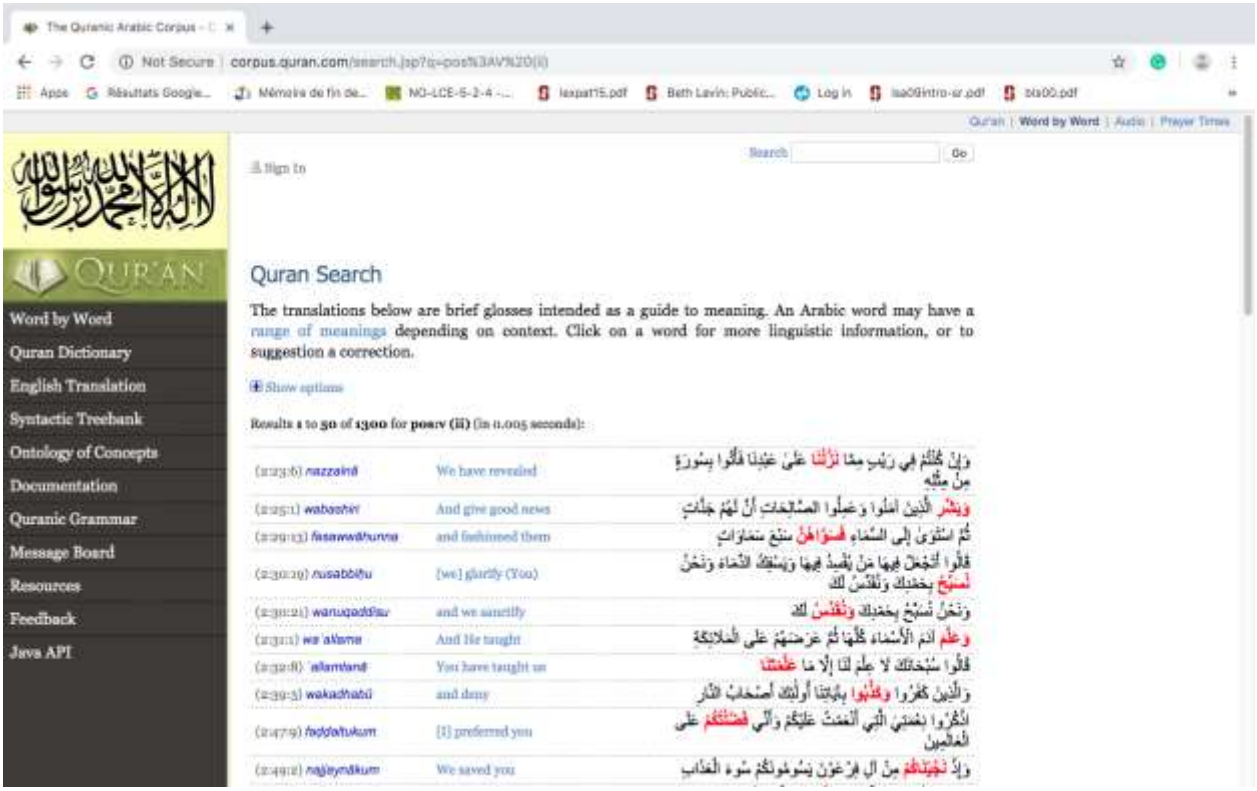


Figure 5: Morphological search for gemination (Form II) in the QAC

The search for verb forms in the QAC generated a large number of examples, thus requiring us to find some way of limiting the corpus. For example, searching for Form II generated 1300 examples, which we managed reduce to 350 so as to retain only the verb forms. We decided to take this number as the baseline for other forms under investigation. This proved to be impossible for Forms VI and VII, which were much rarer in the Quranic data. Below is a summary of the number of instances in CA that were studied for each form of the verb:

- Form II (Gemination): 350 examples.
- Form IV (Prefixation with *a*-): 350 examples.
- Form V (Prefixation with *ta*-): 414 examples - form ta-faʕʕala
- Form VI (Prefixation with *ta*-): 77 exampes – form ta-f ā ʕala
- Form VII (Prefixation with *in*-): 51 examples.

The QAC also allows verification of the syntax of the sentences in which verb forms occur. Thus, we were able to check automatically whether the verb was transitive or intransitive using a dependency graph, as in Figure 6 below:

Figure 6: Verse (2:96)- Quranic Syntax

We aimed to create a reliable corpus in which instances were randomly selected and representative of overall usage. To this end, we randomly chose 350 examples of each form, and for those that did not have at least 350 uses we analyzed all of the examples found. All sentences collected were correlated with their dependency graph to ascertain the transitivity/intransitivity of the verb.

4.3.3. Corpus of Modern Standard Arabic (MSA)

Contrary to the CA corpus for which the QAC provided access to two verb forms, dependency graphs and even translations, the MSA corpus was more difficult to create due in large part to the absence of diacritics in most MSA corpora. Consequently, we had recourse to the software engine WordSmith Tools 7.0, an integrated suite of programs for searching in texts which has a concordance tool capable of treating plain text or web text files. The concordance display also gives access to information about collocates of the search word. Our search for diacritrisized texts that can be used in Wordsmith Tools led us to a corpus called **Tashkeela**; a collection of 75 million words from 97 books in

classical and modern Arabic gathered from manually vocalized texts using a web crawling process. Within this corpus we chose 288 texts in MSA from different fields: politics, modern texts, short stories, religious texts, recipes,..etc., and used Wordsmith Tools to extract the verb forms under investigation.

As Wordsmith does not recognise gemination per se, we were obliged to look for cases of gemination with each of the 28 Arabic letters. We obtained a total of 92626 instances of gemination in the 288 Tashkeela MSA texts. The geminated words were nouns, adjectives, adverbs, verbs, prepositions. Consequently, we reduced the number of examples to 350 (only verbs) as we did in the CA by deleting geminated nouns, adjective and adverbs and retaining only geminated verbs. Figure 7 below shows one page of the 4963 examples of gemination found with the letter د ‘d’.

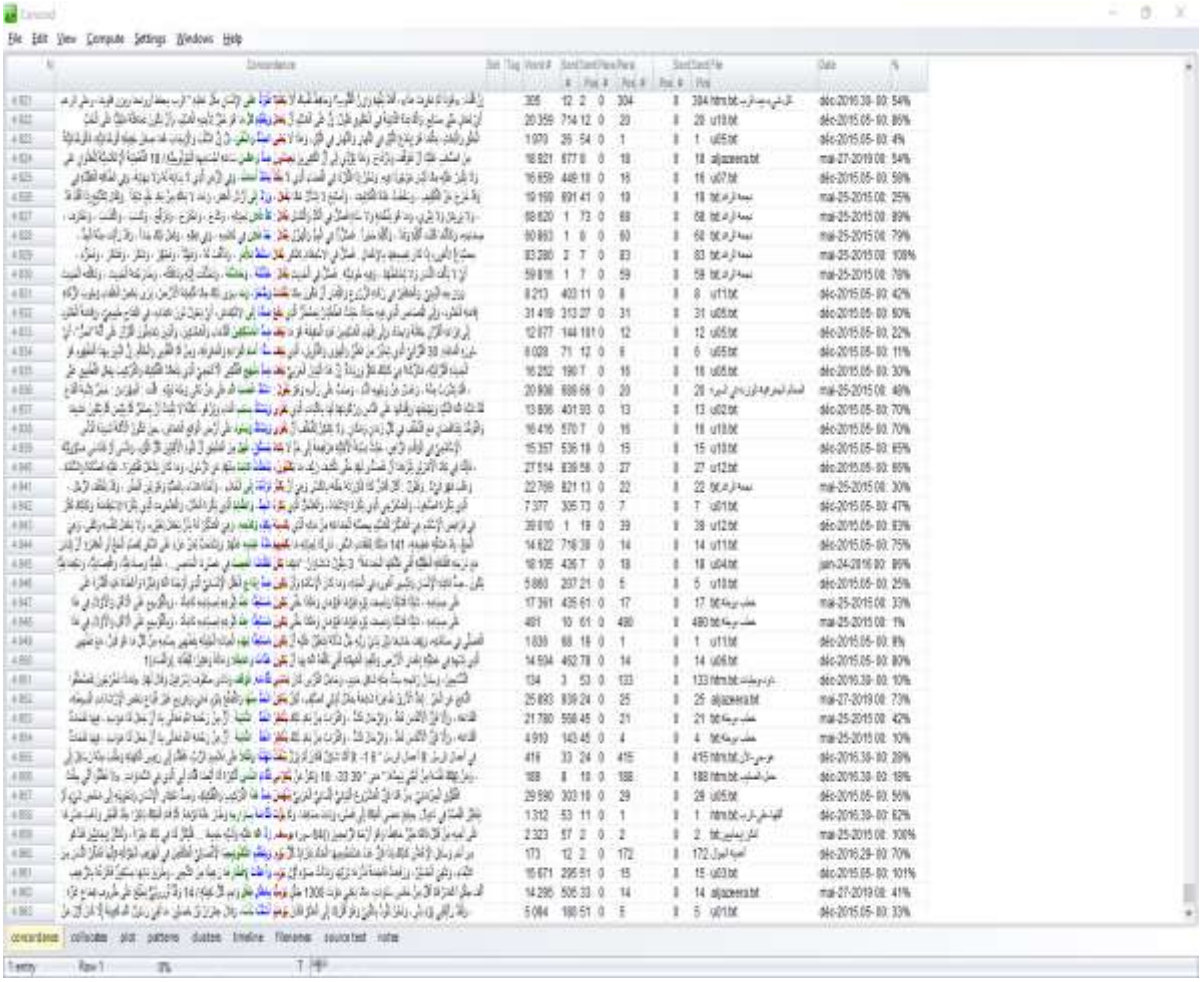


Figure 7: Gemination found with the letter د ‘d’ in the MSA Corpus.

In the next section, we will introduce the results found in our corpora and analyse them. Then we will give our findings.

Chapter 5 : Corpus Analysis of Causativizing morphemes ‘gemination’ and ‘ a’

5.1. Introduction

In this chapter, we will analyse the corpus that we built for this study and introduce the findings regarding transitive alternations. Different criteria will be used to analyze the data. Among these will be animacy, number of occurrences, causation, non-causation, and potential and actual meaning. The application of these criteria will be discussed against the backgound of the studies outlined in the previous chapters, most of which assume that gemination (Form II) and prefixation with *a-* (Form IV) are causative verb forms, while prefixation with *ta-* + gemination (Form V), prefixation with ‘*ta-’* + lengthening of the middle vowel (Form VI) and prefixation with *in-* (Form VII) are anti-causative forms.

5.2. The MSA versus the CA corpus

In the part of the study that makes use of computer-readable corpora, we had to rely on an approach involving searches for particular verb stems. It turned out to be impossible to automatically retrieve all forms of gemination and prefixation with *a-* from a computerized corpus. Consequently, we manually extracted all triliteral verb forms of gemination and prefixation with *a-* from the MSA corpus generated by Wordsmith Tool. From the 96,626 instances of gemination, including prepositions (أمّا – or), nouns (ربّنا – our God), and adverbs (لمّا – when), we extracted 354 examples of triliteral verbs with gemination. In the same way, 165 examples of trilateral verbs prefixed with *a-* were collected from the 3681 instances of words prefixed with *a-*. The instances in the CA corpus (QAC) were easier to identify than in the MSA corpus, where it was possible to make morphological searches. From the 1300 examples of gemination in the Koran, we randomly extracted 350 examples. In the same way, from the 3487 instances of prefixed verbs with *a-*, we selected 350 examples. The criteria cited previously were applied to the examples collected of gemination and prefixation with *a-* in order to determine their degree of causativization.

5.3. Form II: Gemination

For the causativization profiles, we distinguished between causative verbs and non-causative verbs. However, other categories were added to the grid depending on the actual sense expressed by the verb. From the data collected, we cite 5 examples below in (142) of clearly causative verbs from both MSA and CA.

(142)

a) وَتَنْمُو مَا قَدَّرَ لَهَا اللَّهُ مِنَ النَّمَاءِ (MSA Corpus: L41)

wa tanmou ma **kaddara** allah laha min al-nama?

And it grows what for it has destined God to develop

And, it (life) grows as much as God **has destined** for it to develop.

b) وَ**امْتَدَّ** الْمَذْهَبُ إِلَى الْأُسْرَةِ **فَمَزَّقَ** كِيَانَهَا (MSA Corpus: L 62)

Wa **?mtadda** al-madh'hab ?la al-?ousra **fa-mazzaka** kianaha

And, the doctrine **spread** to the family and **tore** its structure.

c) لْنُلْقِ نَظْرَةً عَلَى الْآيَاتِ الْكَرِيمَةِ الَّتِي **جَسَّدَتْ** هَذِهِ الْفِكْرَةَ (MSA Corpus: L 92)

li-noulki nadhrat ʕla al-?yat al-karima al-ati **jassada**-FEM hadhih al-fekra

lets's look at the verses that have **embodied** this idea.

d) وَعَلَّمَ آدَمَ الْأَسْمَاءَ كُلَّهَا ثُمَّ عَرَضَهُمْ عَلَى الْمَلَائِكَةِ (CA Corpus: Verse (2:31))

wa **ʕallama** Adam al-?asma? kollaha thomma ʕaradhahom ʕala al-mala?ika.

And He **taught** Adam the names - all of them. Then He showed them to the angels.

e) وَإِنْ كُنْتُمْ فِي رَيْبٍ مِمَّا **نَزَّلْنَا** عَلَىٰ عَبْدِنَا فَأْتُوا بِسُورَةٍ مِنْ مِثْلِهِ (CA Corpus: Verse (2:23))

wa ?n kontom fi rayb min ma **nazzala**-nahu ʕla ʕabdina fa-?tu bi-surat mithlahu.

And if you are in doubt about what We have **sent down** upon Our Servant [Muhammad], then produce a Surah the like thereof and call upon your witnesses other than Allah, if you should be truthful.

The overall frequencies for the examples extracted and analysed in CA and MSA manifest the proportion shown below between causativization and non-causativization.
From 100 instances of gemination in MSA corpus, we found 36 verbs that manifest direct causativization and 64 verbs that do not express causativization.

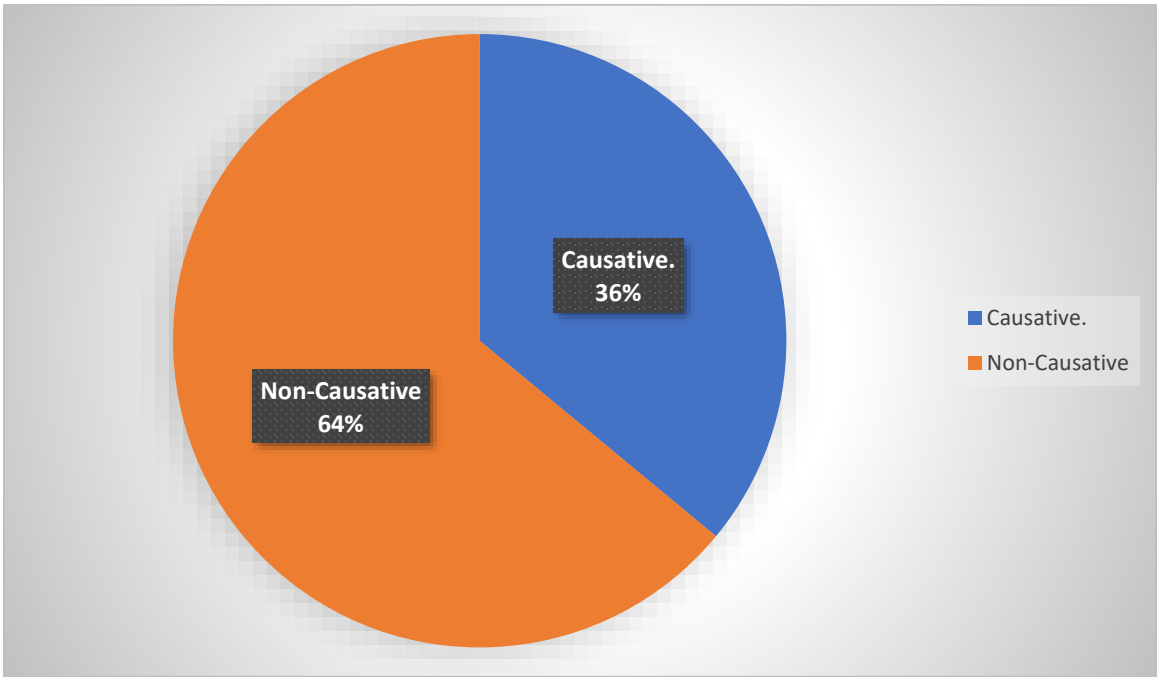


Figure 8 : Frequencies of Causative and Non-Causative Geminated Verbs in 100 examples in the MSA Corpus.

However, in CA the causative use of geminated verbs is much more significant than the non-causative use, as shown in Figure 9 below where 48% of the verbs are causative and 52% non-causative.

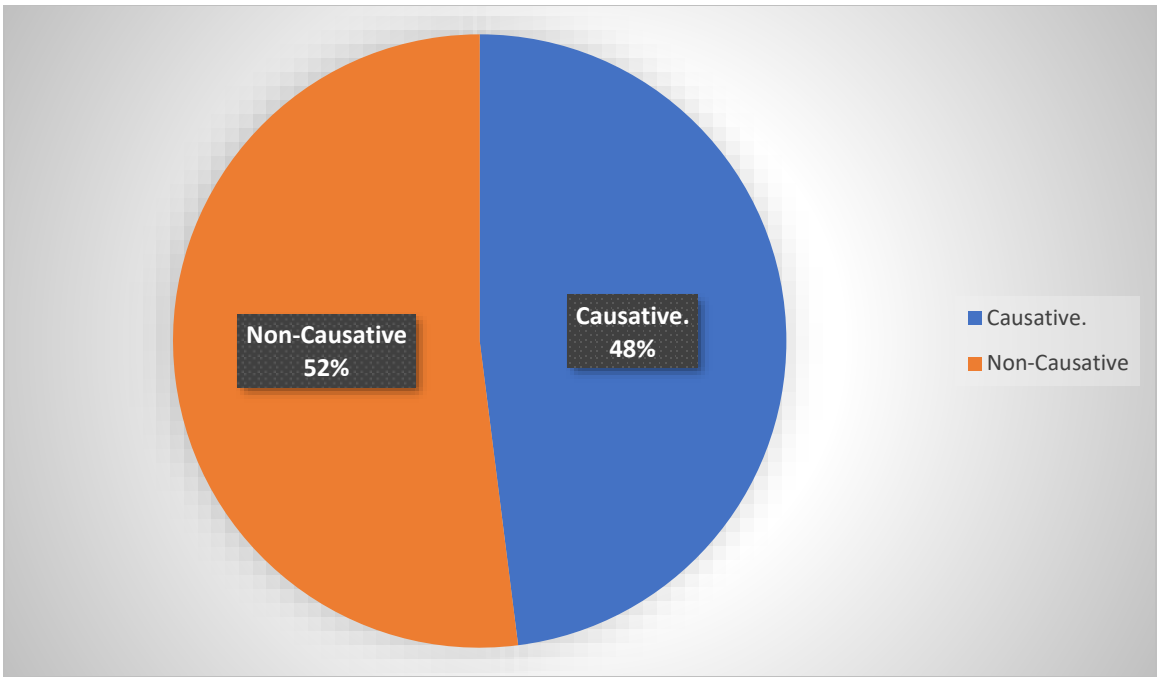


Figure 9: Frequencies of Causative and Non-Causative Geminated Verbs in 100 examples in the CA Corpus

The significantly higher occurrence of the causative sense in CA may be due to the nature of the text, in which Allah is represented as being the ultimate cause of the way things are disposed in His creation. In fact from the 100 instances studied, we found that in 53 instances, 'God' was the subject of the sentence. In CA , the other meanings that were found besides causativization are exemplified in (143):

(143)

a) قَالُوا أَتَجْعَلُ فِيهَا مَنْ يُفْسِدُ فِيهَا وَيَسْفِكُ الدِّمَاءَ وَنَحْنُ **نُسَبِّحُ** بِحَمْدِكَ **وَنُقَدِّسُ** لَكَ (Verse: 2:30)

They said, "Will You place upon it one who causes corruption therein and sheds blood, while we **declare Your praise and sanctify** You?" Allah said, "Indeed, I know that which you do not know."

b) وَالَّذِينَ كَفَرُوا **وَكَذَّبُوا** بِآيَاتِنَا أُولَٰئِكَ أَصْحَابُ النَّارِ (Verse 2:39)

And those who disbelieve and **deny** Our signs - those will be companions of the Fire; they will abide therein eternally."

c) وَلِلَّهِ الْمَشْرِقُ وَالْمَغْرِبُ فَأَيْنَمَا **تُوَلُّوا** فَثَمَّ وَجْهُ اللَّهِ (Verse 2:115)

And to Allah belongs the east and the west. So, wherever you [might] **turn**, there is the Face of Allah. Indeed, Allah is all-Encompassing and Knowing.

d) يَا أَيُّهَا الَّذِينَ آمَنُوا لَا **تُقَدِّمُوا** بَيْنَ يَدَيِ اللَّهِ وَرَسُولِهِ (Verse 49:1)

O you who have believed, do not **put [yourselves] before** Allah and His Messenger.

In (a) and (c), gemination indicates the repetition of the action of praising and turning. In (b), the verb 'deny' shows the intensity of the action of denying. In (d), the idea expressed by gemination is that of opposition. Geminated verbs express other meanings besides causation even more frequently in MSA as illustrated in (144):

(144)

a). أُسْتَاذُنَا **يُفَتِّشُ** هَذِهِ الْوَاجِبَاتِ.

Ustadhuna **ufattichu** hadhih al-wajibat

Our teacher **checks (in details)** our homework.

b) رَوَاهُ الطَّبرَانيُّ، **وَصَحَّحَهُ** الأَلبَانيُّ.

Rawah al-tabarni wa **sahhaha**-hu al-albani

It was narrated by al-tabarni and **rectified** by al-albani

c) كَانُوا يُؤْذُونَهُ وَيَتَآمَرُونَ عَلَيْهِ **وَيُكَذِّبُونَهُ**

kanu u?dhunahu wa **ukaddhibounahu** wa yata?marouna ʕlayhi

they were abusing him, **denying** him and plotting against him

d) ابْنُ إسْحَاقَ بِسَاعَةٍ مِنْ نَهَارٍ **حَدَّدَهُ**

Haddada-hu ibn Ishan bi-saʕatin min al-nahar

Fixed ibn ishak by an hour in the day

Ibn Ishak **fixed** it by an hour in the day.

e) وَتَنْمُو مَا **قَدَّرَ** لَهَا اللَّهُ مِنَ النَّمَاءِ

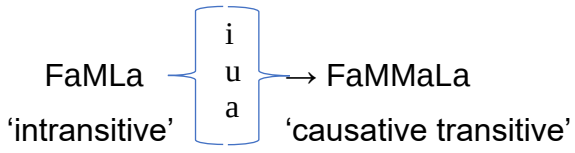
wa tanmou ma **kaddara** laha Allah min-al nama

And it grows what God has **destined** for it from development.

In (a) and (b) the subjects want to ‘fix’ something. In (a) the teacher wants to check the homework in detail to fix students’ errors. In (b) a book was written and then rectified by a writer in order to fix what was missing or wrong. This involves going back over the thing fixed a second time. However, in (c) the subject wants to ‘unfix’ an idea already established by the object, consequently when they unfix an idea, they automatically have to go back over the first thing to undo it. Finally, in (d) and (e)the idea expressed is that of intensification, which one might characterize metaphorically by the image of firmly hammering a post into the ground.

While corpus data confirms that the causative pattern is an important one with geminated verbs, the semantic potential of geminated Form II verbs extends beyond causativization to include the notions of intensification, repetition, and rectification or opposition. This suggests that the potential meaning of Form II has to do with some form of duplication or reinforcement. We must therefore disagree with Nehmen (1982)’s claim that all Form II items morphologically derived from Form I are causative verbs as per (145):

(145)



The figure above shows that the three consonants are F-M-L and only the middle consonant (M) can be geminated. When the process of gemination occurs, the vowel (i-u-a) after the middle consonant (M) is ablauted (a). Nehmen also assumes that transitive verbs are not causativizable, while intransitive verbs are. However, the following examples found in our corpus show that the basic form of some transitive verbs can be

made causative by gemination, as in (146) from the Quranic and (147) from the MSA Corpus:

(146)

a) أَنْ تَضِلَّ إِحْدَاهُمَا **فَتُذَكِّرَ** إِحْدَاهُمَا الْأُخْرَىٰ

an tadhilla ihdahouma, fa-tu-**dakkara** ihdahuma al-ukra

so that if one of the women errs, then the other **can remind** her.

b) رَبَّنَا وَلَا تُحَمِّلْنَا مَا لَا طَاقَةَ لَنَا بِهِ

rabbana wa la tu-**hammala**-na ma la takata lana bih

Our Lord, and **burden** us not with that which we have no ability to.

(147)

a) اصْحَابِ الْعَقْلِ الَّذِينَ **يُشَغِّلُونَ** أَذْهَانَهُمْ فِي سَبِيلِ الْوُصُول الى الحقيقة

ashab alʕakl al-dhin yu-**chaggala**-un adhanahom fi sabil al-wusul ila al-hakika.

Mindfuls are those who **turn/make** their minds **work** in order to get the truth.

b) وَوَقَّرَته

wa wakkara-tu-hu.

And I made him dignified or more honorable.

The examples above are transitive in Form I and yet they are causativizable by gemination, contrary to Nehmen's claim: in (146a) the verb in its basic form *dakara* 'remember' is transitive and becomes causative after gemination *dakkara* 'remind'; in (146b), the verb in Form I *hamala* means 'to take something/someone' and the action of taking requires an object; in (147a), the verb *chagala* 'occupy' is transitive and in Form II *chaggala* 'make work', it is causative; finally, *wakara* 'to praise' also is transitive and causitivized by gemination to give *wakkara* 'cause to appear worthy'.

Consequently, contrary to Nehmen's view, gemination is not a mere process of causativization but many other actual meanings can be generated by this morphological device. Among these meanings, we can find intensification, repetition, rectification and opposition. Nehmen's affirmation "*in conclusion, it would be appropriate to claim that, in general, transitive verbs are not causativizable, while intransitive are''* (Nehmen, 1982, p. 71) is thus inaccurate. The examples in (146) and (147) show that there exist transitive verbs in Form I that can be causativized by gemination in both CA and MSA.

Nehmen also considers causative verbs generated by gemination and prefixation with *a-* as covert causatives because there is no explicit separate expression of causativization such as the verb 'make' in جعل 'make someone do something'. According to him, overt causatives should be like the following sentence:

(148)

جعل زيد هند ترقص

jaʕala zaydun hindun **tarkusu**

made zayd hind **dance**

Zayd made Hind dance.

Contrarily to Nehmen's view, Glanville (2018) considers gemination and the glottal stop (prefixation with '*-a'*) as morphological markers that make verbs into marked causatives. He states that *"in Croft's (1970) terms, prototypical transitivity wherein an agent has some impact on a patient is a semantically marked view for actions like LAUGH or HEAR which do not have an agent as part of their semantics, and hence the addition of causation to these concepts results in a marked Arabic verb"* (Glanville, 2018, p. 111). While this seems to be mainly a quarrel over terminology, we will have occasion to return later on to the difference between the syntactic construction illustrated in (148) and the morphological markers of gemination and prefixation with *-a.*

Let us now turn to investigate transitivity profile variations. Corpus data indicates that causativization is the most frequent actual meaning for gemination as shown in Figure 10 below:

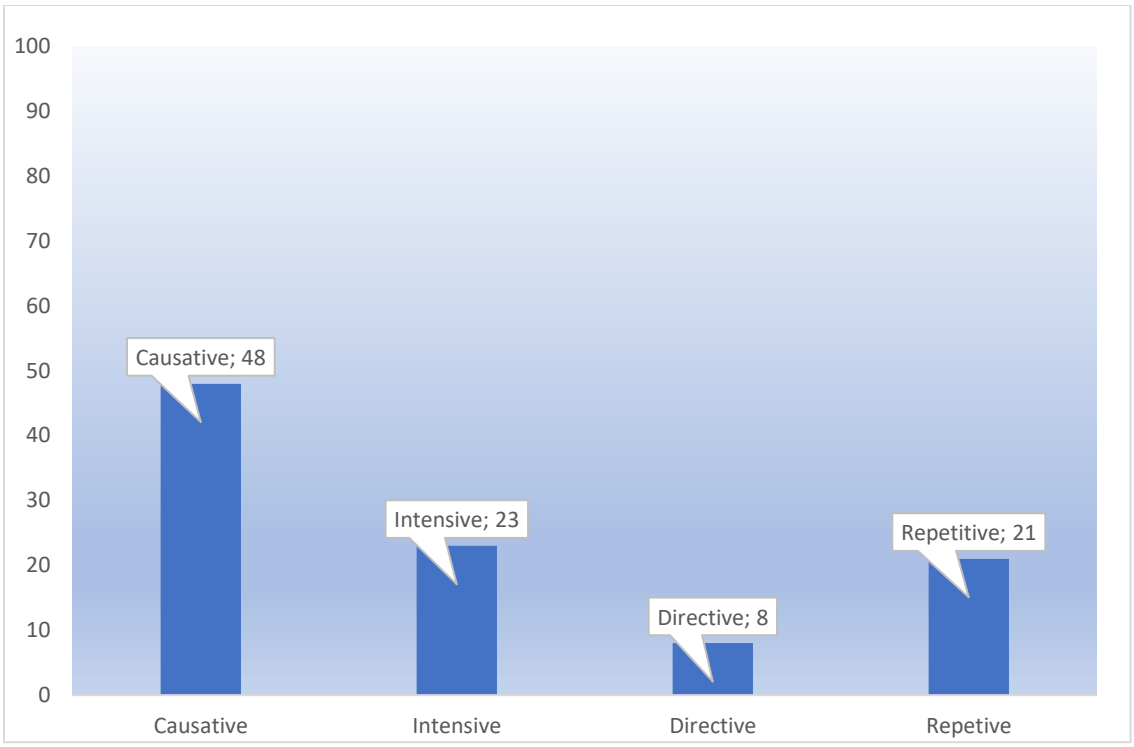


Figure 10 : Transitivity Profiles in 100 examples in the CA Corpus

Causativization represents nearly half of all uses in a 100-example sample. Directive[13] verbs are very low in proportionThe intensification[14] and repetition[15] senses however make up almost half as well. This means that they are just as important as causation in the overall usage profile of gemination. We would suggest that causation derives from the potential meaning of duplication through the notion of the action being forceful enough to produce an effect.

If we look at whether causativization represents the same proportion of usage in MSA as in CA, we get a very different picture, as shown by the MSA relative frequency data in Figure 11 below:

[13] Refers to verbs evoking directions
[14] Refers to verbs evoking intensity in action (or event)
[15] Refers to verbs evoking repetition

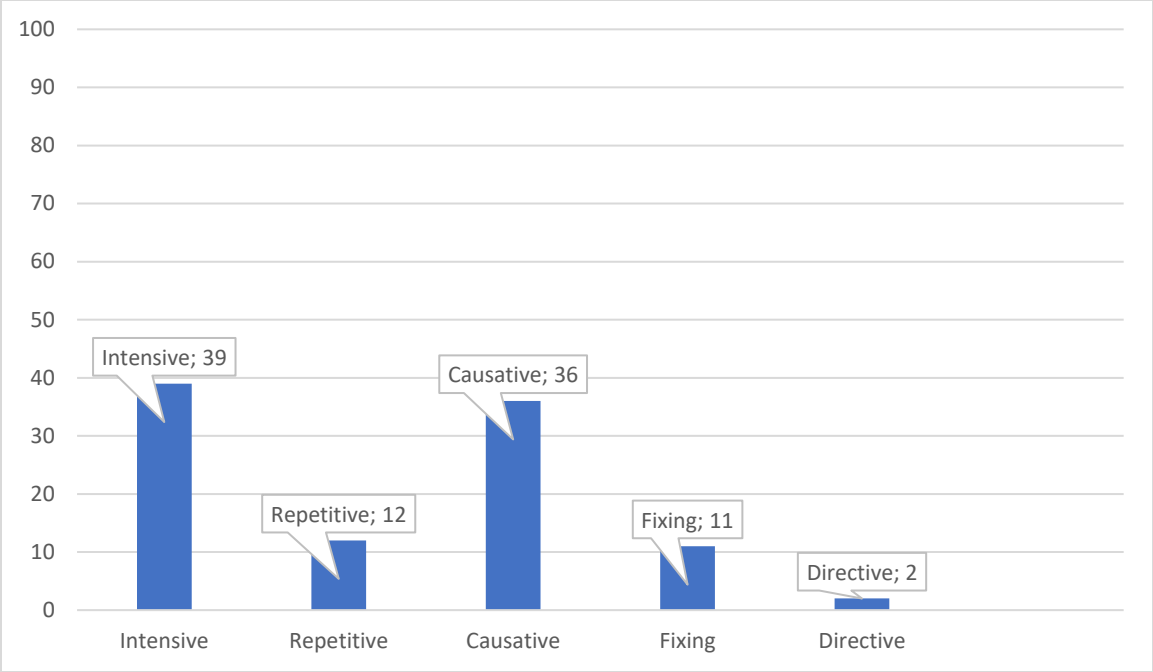


Figure 11: Transitivity Profiles in 100 examples in MSA Corpus.

Contrarily to CA, in MSA geminated verbs are used as intensive more frequently than as causative, although the difference is not very significant. Intensification and repetition together represent however 51% of usage. This difference in the use of these types of verbs in MSA and CA is due however primarily to the difference in the genre of the texts in the two corpora. In the CA the most frequent subject of geminated verbs is Allah, the Supreme Cause of all being. This obviously favors a causative interpretation of Form II.

Following the principle of iconicity that 'more of the same form signifies more of the same meaning', the semantic range of doubled forms typically includes reduplication in the languages of the world, i.e., pluractionality, intensity and perhaps even causativization (Haiman, 1985). From a diachronic and cross-linguistic perspective, doubling of C2, i.e., gemination, is clearly an operation signifying intensity or verbal plurality in Semitic. Doubling of C2 is attested all over the Semitic area with roughly the same signification. Diachronically, it goes back to all the way to Proto-Semitic (cf. Brockelmann 1908: 508ff., Lipiński 2001: 390, and others). Brockelmann (1908: 508ff.), who considers doubling of C2 as the basic means of forming the intensive, views the other forms of the CVCCVC pattern as variations of the geminated form in Semitic:

> Durch Verdoppelung des 2. Radikals entsteht der Intensivstamm ... Seitenbildungen des Intensivstammes sind in allen semitischen Sprachen außerordentlich häufig, sie liefern namentlich in den jüngeren Dialekten das Hauptkontingent der Verbalbildung.
>
> (Brockelmann 1908: 508-510)

> [By doubling the 2nd radical, the intensive stem is created ... Formations of the intensive stem are extremely common in all Semitic languages, they represent the main category of verb formation, especially in the younger dialects]
>
> (Brockelmann 1908: 508-510)

A final test was used to verify the validity of the hypothesis formulated above. We checked randomly the meaning of the first five verbs in the MSA corpus in a classical dictionary. The 'lisan al-arab' (لسان العرب). Figure 12 below shows the meanings found in this lexicological inventory:

	Meaning in MSA	Meaning in CA
عبّر (ʕabbara) 'express '	Repetition 'express many times'	Causativization 'make clear'
كبّر (kabbara) 'enlarge'	Intensification 'exaggerate in…'	Causativization ' make bigger'
فتّش (fattacha) ' inspect'	Intensification 'inspect roughly'	Intensification 'inspect roughly'
رتّب (rattaba) 'put in order'	Intensification ' put in order firmly'	Fixing-Causativization 'to put something in order'
متّع (mattaʕa) 'enjoy'	Repetition ' enjoy many times'	Causativization 'make time pass pleasantly'

Figure 12: Meaning variation from CA to MSA with five random verbs.

It is clear from the above table that four out of five verbs that express intensification in MSA express causativization in CA. The meaning of causativization is thus less frequent in MSA than in CA. We hypothesise that the extensive use of intensification in MSA has been furthered by the use of Form IV (a-Verb) as the main form responsible for expressing causativization. Consequently, we will examine the use of Form IV in the next section.

5.4. Form IV: Prefixation with a-

In this section it is argued that Stem IV is not a causative stem either, but that causation is just one of the different meanings conveyed by this verb form. Fassi Fehri (2003) assumes on the other hand that Stem IV is mainly causative, and Djamel Kouloughli (1994) claims that the clearest and purest meaning of Stem IV is causation. Contrary to these views, we argue that the glottal stop *ʔ* '*-a*' creates active verbs that require Agent arguments. The Agent argument provided by Stem IV combines with certain aspects of the root's meaning to create an active verb representing a semantic structure that is not represented in its entirety at the root level. Among the various semantic meanings expressed by Stem IV according to different linguists (Nehmen 1982, Ammar & Dischy 1999, Fehri 2012, Glanville 2018 and others), we can find the following:

(149) Strong Causative Function

جَلَسَ 'jalasa' (Form I) He sat.

أَجْلَسَهُ 'a-jlasa-hu' (Form IV) He made him sit. He caused him to sit.

أَجْلَسَ to **جَلَسَ** + أ to **جَلَسَ**

In **جَلَسَ** he was sitting, while in **أَجْلَسَهُ** someone made him sit and this is shown visibly in the word by adding of prefix أ '-a'. The subject in Form I is now the object in Form IV and the new subject is introduced in Form IV using أ **'-a'.**

(150) Transitivity Function

(a) Intransitive in Form I usually becomes transitive in Form IV.

ذَهَبَ 'dahaba' (Form I) he departed or went away.

أَذْهَبْتُهُ 'a-dhaba-hu' (Form IV) I made him depart or go away.

When both intransitive and transitive verbs are used in Form I, Form IV is usually derived from the intransitive verb.

(b) **حَزِنَ** 'hazina' He sorrowed/grieved. (Form I(i) intransitive)

حَزَنَهُ 'hazana-hu' he made or caused sorrow/grief to be in him (someone else). (Form I(t) transitive)

أَحْزَنَهُ ‘a-hzana-hu’ he made or caused him (someone/else) to become sorrowful/grieve. (Form IV transitive)

Monotransitive in Form I usually becomes ditransitive in Form IV. The first object is made to do the action (the object is made to do the thing indicated in the root) and the action is performed on the second object. In other words, the first is the object of the making to be, and the second the object of the verb’s root.

(c) **أَحْفَرْتُ زَيْدًا ٱلنَّهْرَ** I made/caused Zaid to dig the canal.
The verb in Form I is monotransitive, however in Form IV it becomes ditransitive by causing someone to dig something.

In the examples above, we also observe that there exists a meaning of **causation** implied in the transitivity function as we find the idea of ‘cause someone/somebody to do something’.

(151) Transformative Meaning

أثمر الشجر ‘a-tmara al-chajar’ the trees fructified. (I)
أَثْمَرَهُ ‘a-tmara-hu’ He made it fructify. (T)

Verbal Form IV also has a transformative meaning. It comprises a great number of verbs derived from nouns (denominals/denominatives). What is worth noting is that these types of verbs can be both transitive and intransitive.
The intransitive evokes a sense production, and the transitive evokes a sense of causation.

(152) Movement towards a place/time/state/quality

أَيْمَنَ الرجل ‘a-ymana al-rajul’ He entered Yemen. (I)
أَصْبَحَ الرجل ‘a-sbaha al-rajul’ He entered the time of or did something in the morning. (I)

These types of verbs describe getting into a state or condition, acquiring a quality, or becoming something of a certain kind. They are always intransitive. The idea of **movement** is obvious with the use of the preposition “to” which evokes the idea of trajectory.

(153) Exposure meaning

أَقْتَلَهُ ‘a-ktala-hu’ He exposed him to killing (after being exposed to killing there are two possibilities, he was actually killed, or he was not actually killed).

In this meaning of exposure, there is an idea of a **movement** from a state which is normal to a state “face to face with death”.

(154) Allowing

أَقْطَعْتُهُ قُضْبَانًا ‘a-kta3a-tuhu kodban’ I allowed him to cut off branches.

To indicate the subject or فَاعِل allowing the object or مَفْعُول to do or implement the action indicated by the root or to acquire the quality indicated in the word from the same root as that of the Form IV verb. As in the exposure meaning, there is a notion of **movement** in the situation: by the action of allowing, the situation is free to move from a state A to a state B, more specifically in this situation from ‘non-cut branches’ to ‘cut branches’.

(155) Exaggeration in quantity

أَتْمَرَ النَّخْلُ ‘a-tmara alnakl’ The date-palm tree became possessed of an abundant quantity of dried dates.

Here, we can also discern the meaning of **movement,** whereby dates accrued to the tree.

In this type of sentence, the verb is intransitive and the verb is derived from the noun: here ‘a-tmara’ is derived from ‘tamar’ (dates).

(156) Change of state

بَشَّرْتُهُ فَأَبْشَرَ I gave him glad tidings so he became glad.

In a few cases, Form IV serves as the مُطَاوع (a quasi-passive whose grammatical subject receives the effect of the action of another verb) of Form II. This use resembles example (152) where there is a movement into a state. Here there is a movement from a 'normal/sad' situation to a 'glad' one.

(157) Meaning entirely different from Form I

Sometimes the addition of the prefix *a-* conveys what appears to be an entirely new meaning in Form IV which is not present in Form I.

root = ق س م (k-s-m)
Form I = قَسَمَ (kasama) He portioned and shared out
Form IV = أَقْسَمَ (A-ksama) he swore to God

Even though previous researchers treat this type of verb as expressing an entirely novel meaning, one can nevertheless discern an idea of movement here. The action of swearing is construed in this example as committing the person uttering the oath to do something. So, the person is binding himself by oath to some action, with the binding construed as involving an idea of movement.

In various studies, the meaning of Form IV is described by giving the same translation as for verbal forms belonging to Form I, Form II, Form V or Form X. We wish to propose, on the contrary, that subtle but real nuances of meaning separate these forms which are difficult to express by paraphrases.

One of the few linguists who attributes different meanings to Form IV is Zaborski (2006), who cites a large number of Stem IV verbs which do not appear to be causative, although he offers no explanation as to why causation is not present in these cases. Consequently, an account which holds Stem IV to be a causative stem runs into trouble with these uses. Our approach to Stem IV will account for the lack of causative meaning in the cases cited in (152)-(157) above, offering a unitary analysis that explains why

causation is not present in all uses of Form IV while pinpointing what is shared between all such forms. An approach which views stem IV as having both potential and actual meanings is able to explain both the presence of causation and its absence: The potential meaning of the prefix itself is not causation but corresponds to a semantic notion that is more abstract. In establishing this view, we will begin by studying the origin and function of the glottal stop *ʔ* '*-a*' in Arabic. The Arabic glottal stop*ʔ* hamza is derived from the verb 'hamaza' (Arabic: هَمَزَ) meaning 'to prick, goad, drive'. Consequently, we can deduce semantically that the glottal stop is linked to an idea of an action aimed at inducing a movement. One of the things that this notion can convey is causation. In fact, all the examples above can be grouped into two large groups: causation and movement. It will be argued here that verbs of exposure, allowing, exaggeration in quantity and obedience are in fact verbs of movement. Before getting into that, however, let us take an overview of the data.

5.4.1. Results

In the Classical Arabic corpora, we extracted 100 random instances of Form IV verbs and found the following results regarding causativity: 42 verbs are mainly causative and 58 are non-causative as shown in Figure 13 below.

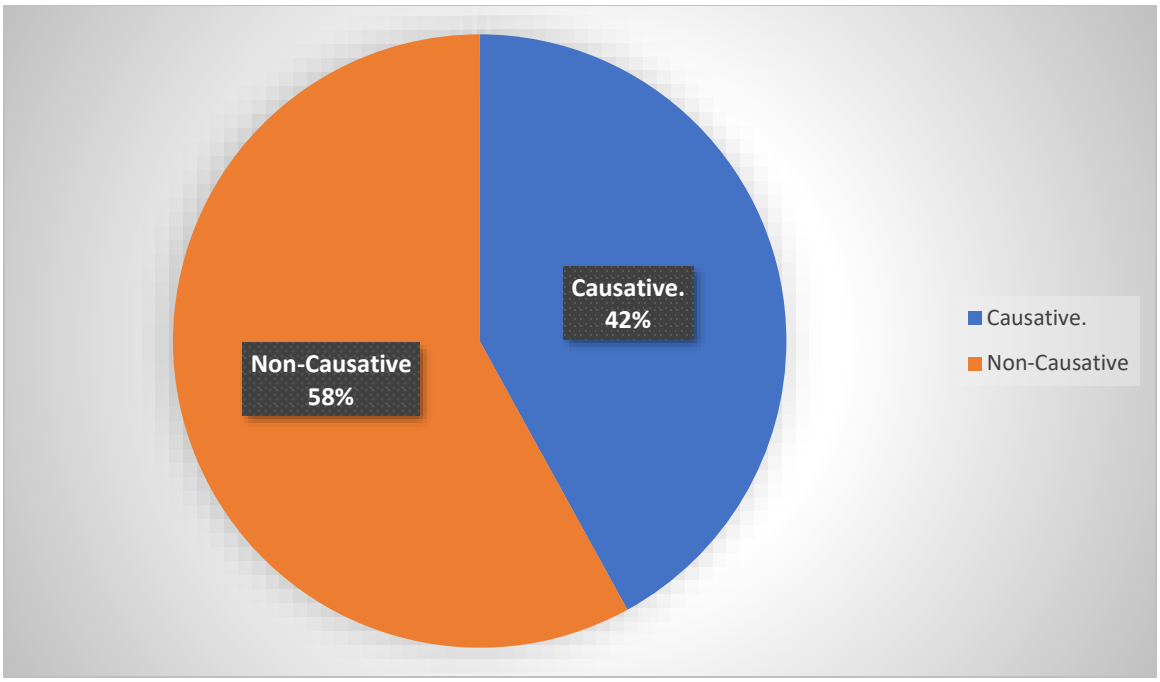


Figure 13: Frequencies of Causative and Non-Causative Form IV verbs in 100 examples in the CA Corpus

The figure above shows that in Classical Arabic the causative use of Form IV is less frequent than the non-causative one. Below are some examples of causative and non-causative verbs extracted from the corpus (158-160):

(158)

وَإِذْ فَرَقْنَا بِكُمُ الْبَحْرَ **فَأَنْجَيْنَاكُمْ وَأَغْرَقْنَا** آلَ فِرْعَوْنَ (CA Corpus: Verse (2:50))

Wa ida farakna bikom albahr fa-**a-njay**nakom wa **a-ghrak**na al firaoun

And [recall] when We parted the sea for you and **saved** you and **drowned** the people of Pharaoh while you were looking on.

(159)

وَظَلَّلْنَا عَلَيْكُمُ الْغَمَامَ **وَأَنْزَلْنَا** عَلَيْكُمُ الْمَنَّ وَالسَّلْوَى (CA Corpus: Verse (2:57))

Wa dallalna alaikom alghamam wa **a-nzala**-na alaikom almanna wa alsalwa

And We shaded you with clouds and sent down to you manna and quails.

(160)

بلى من **أسلم** وجهه لله وهو محسن فله أجره عند ربه ولا خوف عليهم ولا هم يحزنون

(CA Corpus: Verse (2:112))

Bala man a-slama wajhahu li-Allah wa huwa Mohsin fa-lahu ajruhu inda rabbihi wa la kawfa alaihom wa la yahzanun..

Yes [on the contrary], whoever **submits** his face in Islam to Allah while being a doer of good will have his reward with his Lord. And no fear will there be concerning them, nor will they grieve.

What is worth noting here is that in CA the frequency of the causative sense for Form IV (42%) is less than that for Form II (48%); i.e., the meaning of causativization is more frequently expressed through gemination in CA, as observed in section 5.3. Levin (1998) reports the observations of Sibawayh, a leading grammarian of Basra and author of the earliest book on Arabic grammar and linguistics:

> And you say: maluha (salty) and mallahtuhu (I salted it- as the causative of maluha) and we heard some of the Arabs say amlahtuhu (instead of mallahtuhu) just as you say afza'tuhu (I frightened him - as the causative form of fazi'a (he feared)
>
> (Levin 1998:211)

In discussing the pattern of causative verbs, Sibawayh gives the verb ‘malaha’ as an example and mentions that the doubling of the medial consonant expresses to a causative meaning ‘mallaha’ and this is considered as being a rule for causativization as it is more general. However, he uses the word ‘some’ for those who use prefixation with ‘a-’ to express causativization which means that a lesser number of people used Form IV to causativize verbs in CA. This concords with the lower percentage (42%) of causative verbs of Form IV versus the higher percentage (48%) of Form II that we found in our CA corpus. This also tends to support our hypothesis that Form IV is not primarily causative, contrary to the assumption of previous researchers. Form IV rather expresses a more abstract potential meaning than causativization. The non-centrality of causativization for Form IV confirmed by the ambiguity of the meaning of some verbs, as in example (160)

above, where ‘a-slama’ (submit) expresses a change in state and not causativization. Figure 14 highlights the importance of the idea of movement with a-stem verbs:

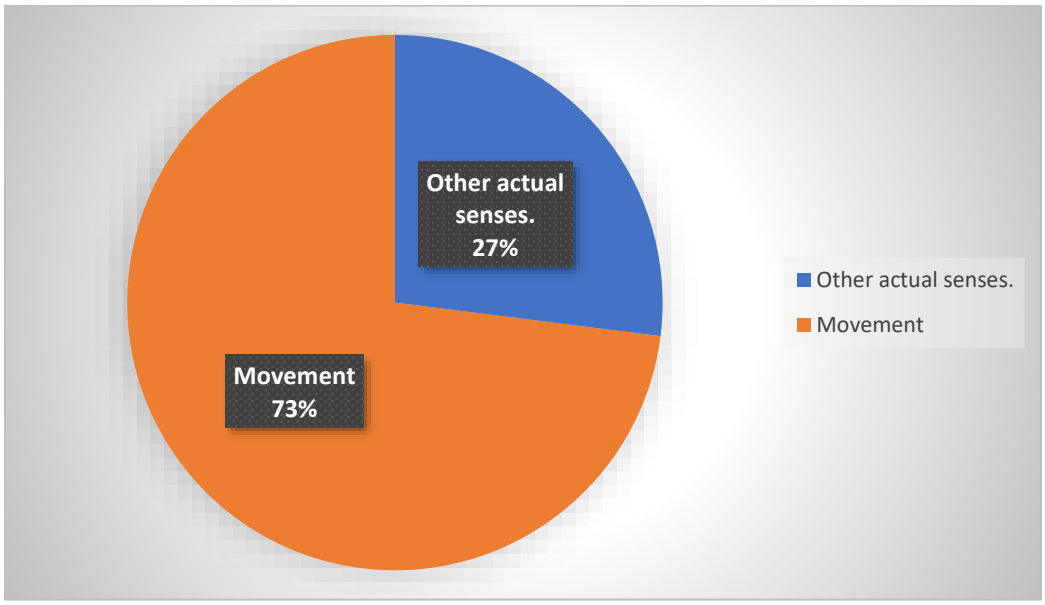


Figure 14: Frequencies of the Movement Sense Vs Other Senses with Form IV in Non-causative Verbs in CA Corpus.

From the figure above, we conclude that that most frequent meaning expressed by Form IV verbs is movement. Below are examples that illustrate this:

(161) الذين يؤمنون بالغيب ويقيمون الصلاة ومما رزقناهم ينفقون (verse (2:3))

Aldyn yu-ʔminun bil algayb wa yu-kimun alsalat wa mima razaknahom **yu-nfikun (present of a-nfaka).**

Who believe in the unseen, establish prayer, and **spend out** of what We have provided for them.

(162)

كذلك يحيي الله الموتى **ويريكم** آياته لعلكم تعقلون (verse 2:73)

Kadalika yu-hy allah almawta wa **yu-rikom (prst of a-ara)** ayatih laʕalakom taʕkilun.

Thus does Allah bring the dead to life, and He **shows** you His signs that you might reason.

(163)

أولا يعلمون أن الله يعلم ما **يسرون** وما **يعلنون**

Awala yaʕlamun anna allah yaʕlamu ma **yu-sirun** (prst of a-sara) wa ma **yu-ʕlinun** (prst of a-ʕlana)

But do they not know that Allah knows what they **conceal** and what they **reveal**?

In (161), there is a change of state from the money lying dormant to its being given out. In (162), there is a movement from a state of non-perception to a state of perception. Finally, in (173), there is a movement involved in both concealing and revealing by which something that was hidden becomes visible or the opposite. The idea of movement is can also be discerned in some causative uses that manifest a certain ambiguity. Consider (164) below:

(164)

وإذ فرقنا بكم البحر **فأنجيناكم وأغرقنا** آل فرعون

Wa id farakna bikom albahr fa **a-nja**-ynakom wa **a-graka**-na al firʕaoun

And [recall] when We parted the sea for you and **saved** you and **drowned** the people of Pharaoh

At first sight, one might think of God's causal power and the help he could offer to faithful people in order to protect them. Seen in this light, 'a-nja' (save) appears to be causative, with God being construed as the cause of these people being rescued; similarly with 'A-graka' God is the cause of the non-believers drowning. These verbs express causative meanings in the sense that the agent's action brings about a process leading to a change of state in the referent of the object nominal. Thus, these utterances involve both the notion of induced movement and causativity, with the former being the most basic.

Shibatani (1973/1975) proposes two concepts that can allow one to identify other subcategories among utterances expressing the general notion of causation. He distinguishes between 'manipulatives' and 'directives'. Lexical causatives are claimed to

express situations involving physical manipulation of an object or person (the causee) by the causer (eg: *He killed the ant*), whereas productive causatives typically involve the causer's giving an oral direction/instruction to the cause (eg: *He persuaded me to go*). Causation here is indirect in the sense that the causer does not get physically involved in the execution of the caused event. Manipulative causation corresponds to a situation involving an agentive causer and a patientive causee and directive causation to one involving two agentive participants: an agentive causer and an agentive causee. When the causee is patientive, the execution of the caused event is wholly dependent on the causer 's action. In most cases this dependence entails a spatio-temporal overlap of the causer's activity and the caused event, to the extent that the two relevant events are not clearly distinguishable. This spatio-temporal overlap of the causing and the caused event motivates the conceptualization of the entire direct causative situation as a single action (e.g., persuading). On the other hand, when the causee is an agent with its own volition, a degree of autonomy is accorded to the causee. Although the causer is the ultimate source of the caused event, both the causing events are under the control of their respective agents. Moreover, because the caused event has its own agent, it may have its own spatial and temporal profile distinct from that of the causing event. This separability of the caused event from the causing event resists integration of the two, disallowing the construal of the whole causative situation as a single event. We observe that whereas the verbs in (164) above are represented by lexical causatives in English, in Classical Arabic they have to be treated as non-lexicalized: they involve the notion of an induced movement leading the direct object's referent into a new state. The three examples below (172-174) show how the relation between the agent and the patient is important for determining whether a verb is causative or non-causative.

(165)

قل لا يستوي الخبيث والطيب ولو **أعجبك** كثرة الخبيث

Kol la yastawi al-khabith wa al-tayb wa law **a-ʕjaba-**ka kathrat al-khabith.

Not equal are the evil and the good, although the abundance of evil might **impress** you.

(166)

ولقد **أهلكنا** القرون من قبلكم لما ظلموا وجاءتهم رسلهم بالبينات وما كانوا ليؤمنوا كذلك نجزي القوم المجرمين

Wa lakad **a-hlaka**-na alkurun min kablikom lamma dalamu wa ja'athom rusuluna bil-bayinat wa ma kanu li-yuminu kdalika najzi al-kawm al-mojrimin.

And We had already **destroyed** generations before you when they did wrong, and their messengers had come to them with clear proofs, but they were not to believe. Thus do We recompense the criminal people.

(167)

وماذا عليهم لو **آمنوا** بالله واليوم الآخر وأنفقوا مما رزقهم الله وكان الله بهم عليما

Wa madha ʕlaihom law **a-?mana**('u'-pl) bi-allah wa al-yawm al-akhr wa a-nfaka('u'-pl) mima razakahom allah wa kana allah bihom ʕalim.

And what [harm would come] upon them if they **believed** in Allah and the Last Day and spent out of what Allah provided for them? And Allah is ever, about them, Knowing.

The difference between these three sentences is the relation between the agent and the patient. In (165), there is no relation between them except a feeling of admiration, consequently the verb 'a-ʕjaba' is felt to be non-causative as there is no causer or cause, but there is a movement from a neutral state to a state of admiration. However, in (166), we can notice a physical manipulation between God and the people who did wrong. God acts physically upon these people and causes their destruction: God is thus directly involved in the action and the causee is conceptualized as the patient, making 'a-hlaka' is a direct causative verb. Finally, in (167) the action of believing in God does not require that God get physically involved with the causee. It may be that God sends some revelations to people and this may help them to believe in him. Hence, there is no direct contact between the causer and the causee. Since the causation is indirect, there exists rather a caused change or movement where the patient moves from a situation of non-

believing to believing. The prefix ‘a-’ signifies that the subject is a movement-inducing agent. A movement-inducing argument has the potential to cause, to do, to produce, to go, and therefore incorporates all these possibilities. This means that roots that lexicalize permanent states are transformed into action verbs denoting induced movement into that state when prefixed by *a*-. The movement-inducing argument provided by Stem IV is grammatical, in the sense that it is not lexicalized in any root, and it combines with some aspect of root meaning to create an active verb representing a semantic structure that is not represented in its entirety at the root level. Our analysis of the prefix’s role in Stem IV in Arabic develops the insight of Glanville (2011):

> The argument that a root combines with an Actor to create a verb is not original, and is made for Hebrew by both Arad (2005) (who uses the term Agent) and Doron (2003). However, both Doron and Arad make a distinction between a Hebrew stem (or template) that produces active verbs and a different one that specifies the presence of causation. Based on their data, this seems justified for Hebrew, but Arabic Stem IV is less easily presented as a causative stem.
>
> (Glanville 2011: 65)

In more recent research, Glanville (2018) re-elaborates his hypothesis that, rather than being inherently causative, Form IV verbs depict the subject as involved in acting, doing, causing, sending, or giving. We conclude that the presence or absence of causation depends on the meaning of the root that combines with the prefix ‘a-’. This points us in two directions: first, that of tracing the meaning of the prefix ‘a-’ diachronically; second, that of investigating the difference in the meanings conveyed by action and state verbs in Form IV.

5.4.2. Evolution of Form IV

The prefixation of a glottal stop followed by the vowel /a/ to the triconsontal root also occurs as a causative morpheme in Aramaic-Syriac and Ethiopic (MacDonald: 1963). This prefix has a proto-Semitic ancestor ‘sa’. According to Huehnergard (2019) the glottal stop can be added to stems to signify causation:

> In most West Semitic languages an areal change of prevocalic *s > *h resulted in the C stem being characterized instead by *h, as in *tu-ha-ʕrib. (In a further development, causative *h > ʔ in Arabic, in Ethiopic, and in Aramaic after the Old Aramaic period.) A causative stem in *s is also found in most other branches of Afro-Asiatic.
>
> (Huehnergard 2019: 64).

In the same vein, Wright (1967) observes that the glottal stop is related to the Hebrew causative morpheme /h/, noting that traces of this causative /h/ still exist in Arabic. Perhaps the best example is the imperative '*haat'* (give), which is formed through the combination of the /h/ morpheme with the root ʔty, which yields '*ʔataa'* (to come) in Stem I. Here the prefixed morpheme produces a three-argument verb in which one participant causes another to move into the possession of a third. The fact that many Stem IV verbs are clearly causative leads Fassi Fehri (2003) to suggest that the glottal stop actually marks causativity, claiming that verbs incorporating this morpheme in this stem consist both of a causing event and a second event which comes about as a result of the first. However, the fact is that not all Stem IV verbs are causative. This can be seen most clearly if one examines the difference between action and state verbs when they are prefixed with 'a-'.

5.4.3. Form IV action verbs vs Form IV state verbs

In order to investigate the senses expressed by the prefix *a-* with action and state verbs, we extracted 100 examples from the CA corpus and classified them into actions and states. 68 of the 100 verbs were found to denote actions and 32 denoted states. Among the 68 action verbs, there were 50 causatives and 18 non-causatives. The 18 non-causative verbs all expressed movement. The 32 state verbs, on the other hand, were all non-causative, and all of them involved the notion of movement other than that of causation. Adding the 32 state verbs that express movement and the 18 action verbs that express this notion gives a total of 50 verbs expressing movement and 50 verbs that express causation, as shown in Figures 15, 16 and 17 below:

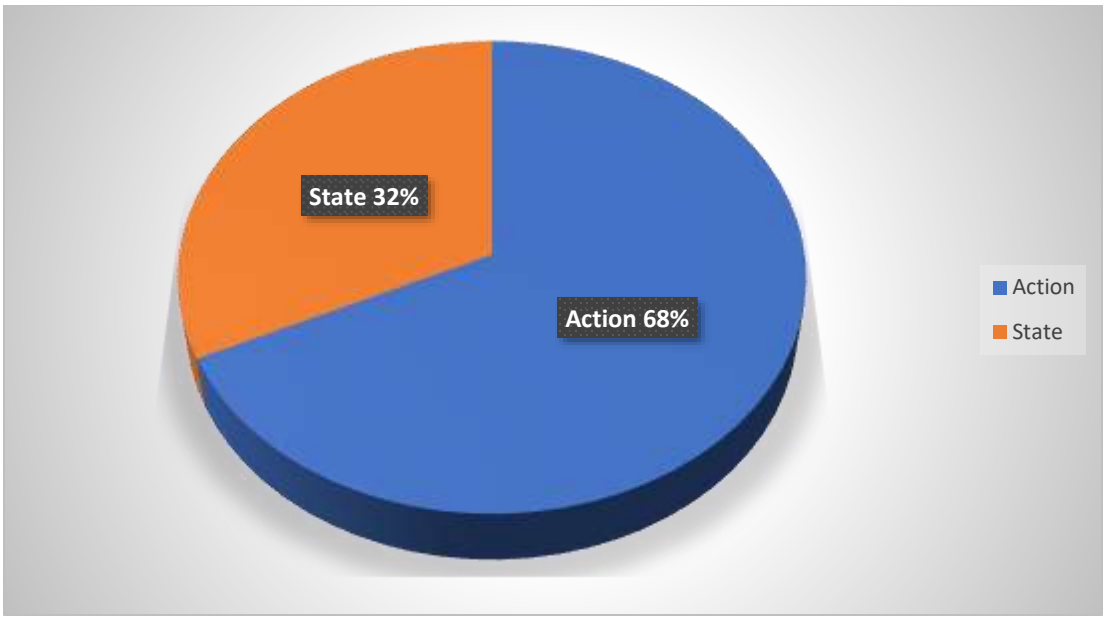


Figure 15: Frequencies of Form IV action verbs vs state verbs in 100 examples from the CA corpus

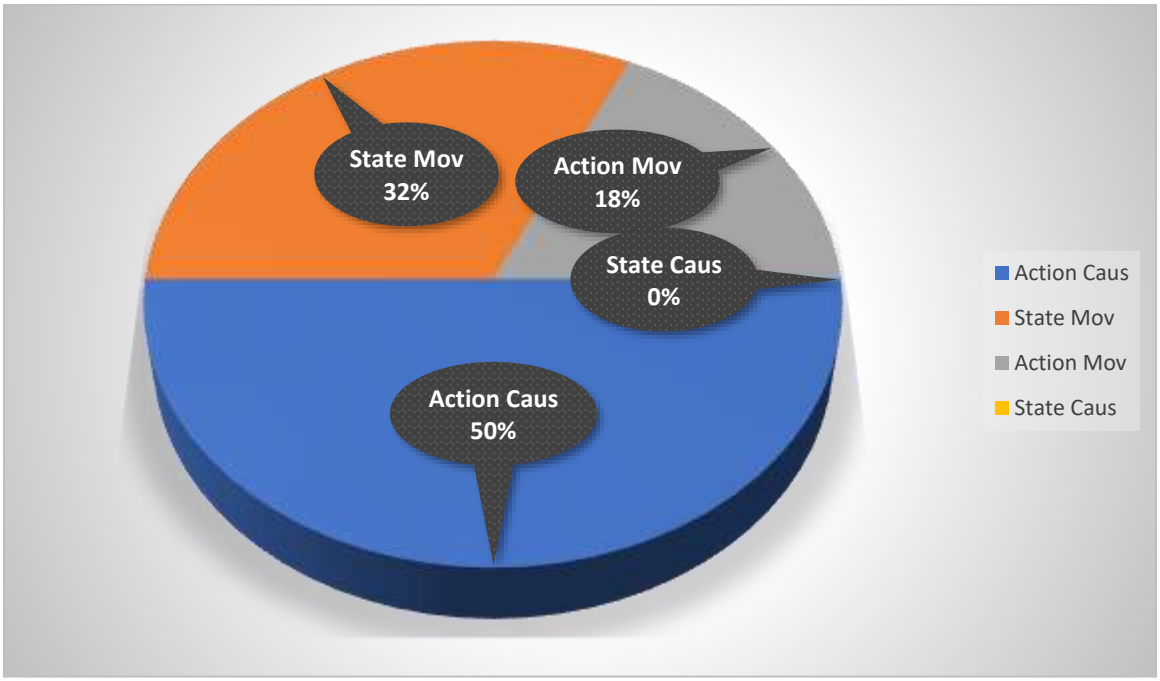


Figure 16: Frequencies of movement and causation with action and state verbs in 100 examples from the CA corpus

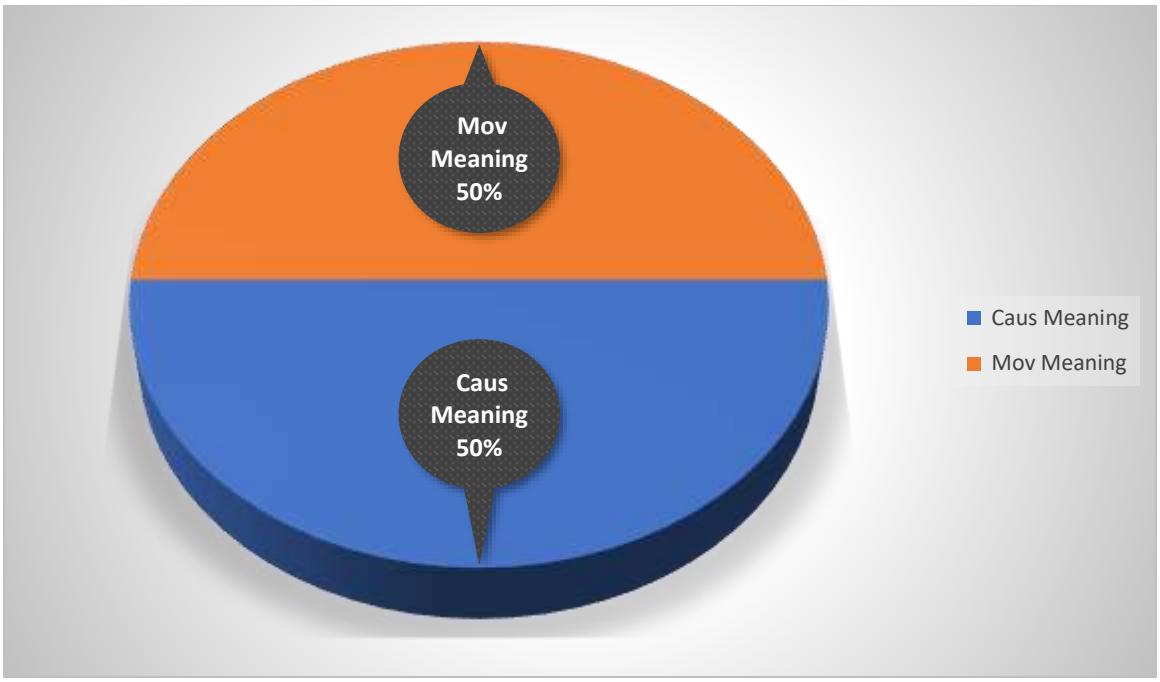


Figure 17: Occurrence of causation vs movement with Form IV in 100 examples of action and state verbs from the CA corpus

The figures above show that even though the occurrence of action verbs (68%) is more frequent than that of state verbs (32%) in CA, the frequency of the movement and causation senses is the same. This proves that causation cannot be considered as the potential meaning of Form IV, which is why we will propose induced movement[16] as the potential meaning for this form. Thus the examples below in (168)-(170) express the notions of transfer and change of state:

(168)

وظللنا عليكم الغمام **وانزلنا** عليكم المن والسلوى

Wa dalana ʕalaikom algamam wa **a-nzala**(na-PL) ʕalaikom almanna wa alsalwa

And We shaded you with clouds and **sent down** to you manna and quails.

(169)

[16] Refers to the idea of movement induced by something/someone (that can be internal or external) on an affected participant.c

فادع لنا ربك **يخرج** لنا مما تنبت الأرض من بقلها

Fa-ʔdʕ lna rabbaka yu[3rd sing]-**(a-)kraja** lana mimma tunbitu al-ardh min bakliha.

So call upon your Lord to **bring forth** for us from the earth its green herbs.

(170)

فإن تابا **وأصلحا** فأعرضوا عنهما إن الله كان توابا رحيما

Fa-in tab awa a-slaha-a(dual) fa- aʕridou ʕanhoma inna allah kana tawwaban rahiman.

But if they repent and **correct themselves**, leave them alone. Indeed, Allah is ever Accepting of repentance and Merciful.

The roots in the sentences above serve as good examples of how the prefix ‘a-’ enables the expression of the notion of caused movement/transfer[17]. Some Stem IV verbs describe actions in which the subject does an action without really affecting another event participant, as in example (170) where ‘a-slaha’ (correct themselves) describes how an internal change is induced in themselves by the subject. In (168), one observes a case of externally induced movement, that of sending something down. And in (170) there is the notion of the induced movement of bringing something out of the earth.

To check whether these results were valid for MSA, we investigated the occurrence of movement and causation in 100 instances of verbs form IV. We extracted randomly 100 instances from the MSA corpus. We found the following results: Action verbs occur 62 times and state verbs 38 times, as shown the figure 18 below:

[17] In this thesis, caused movement, caused transfer and induced movement refer to the same phenomenon.

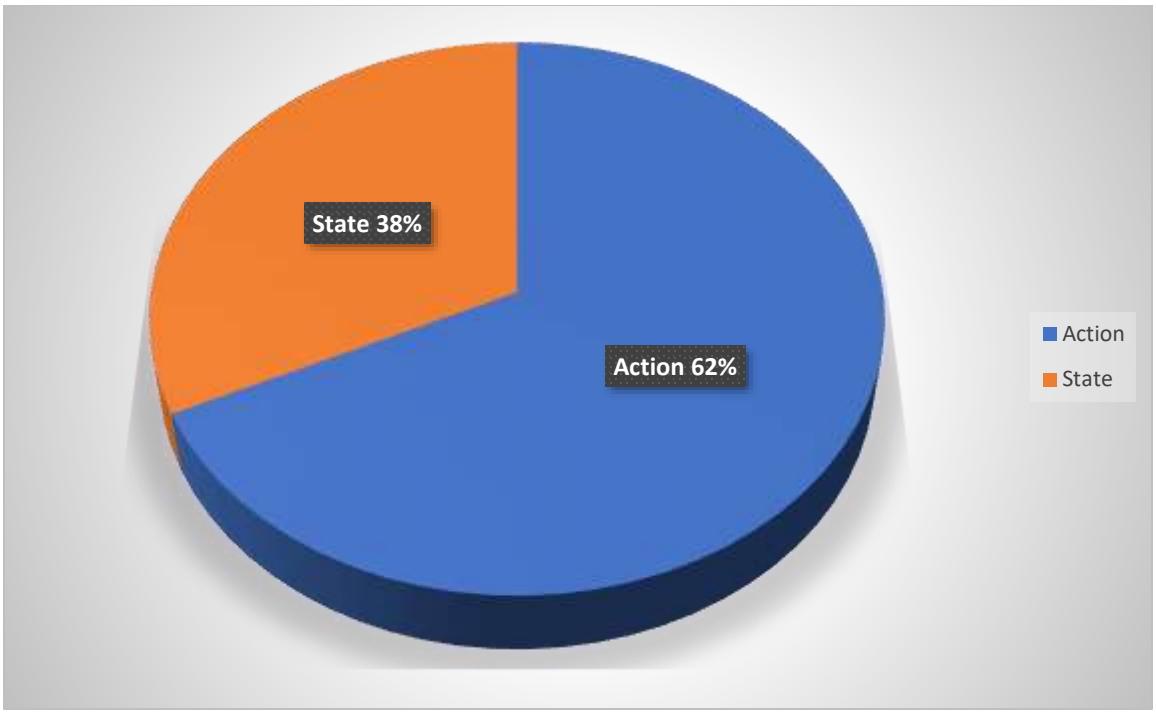


Figure 18: Frequencies of Form IV action verbs vs state verbs in 100 examples from MSA corpus

Of the 62 Form IV action verbs, we found that 30 were purely causative, 18 expressed movement and 14 expressed caused transfer/movement. Figure 19 visualizes the distribution of the various meanings expressed by Form IV action verbs:

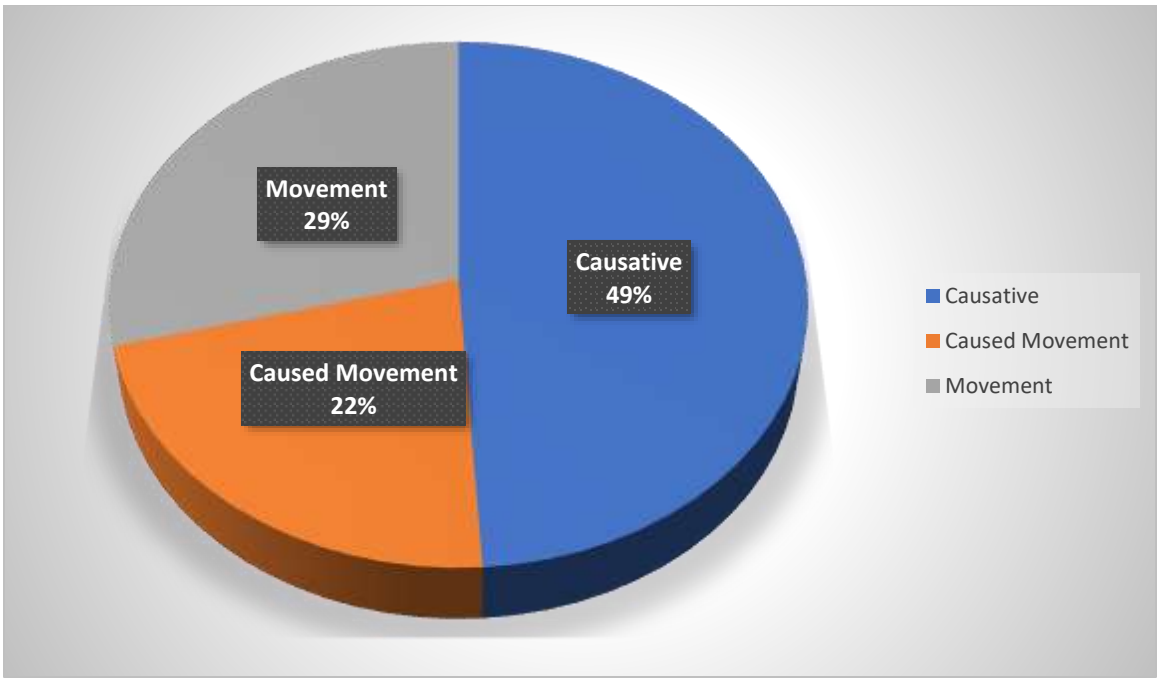


Figure 19: Distribution of meanings of Form IV action verbs in the MSA corpus

Some of the verbs expressing caused movement manifest a certain ambiguity. Consider the following examples:

(171)

الله هوالّذي **أعطى** يوسف التفسير

Allah huwa alladi **a-ʕta(y)a** Youssef al-tafsir

It is God who **gave** Youssef the explanation.

(172)

الله **أظهر** يسوع بكل وضوح

Allah **a-dhara** yasouʕ bikol woudouh

God clearly **showed** Jesus.

The verb a-ʕta(y)a ‘gave’ in (171) invokes a meaning of movement of something from one person’s possession into another’s. In (172), a movement is induced from a non-visible state to a visible one (whence the idea of showing or making something appear). The meaning of movement is even more obvious with states. All 38 state verbs expressed movement, as in the examples below:

(173)

فداء **اصبح** غنيّا

Fidaʔ **a-sbaha** gniyan

Fidaʔ **became** rich (change of state from poor to rich)

(174)

هو الإله الذي أحبك كثيرا

Huwa al-ilah aladi **A-habaka** katiran

He is the God who **loved** you too much (change of state from a moderate to an excessive love)

Analyzing the verbs in terms of their meanings, we found that a total of 56 verbs expressed movement, with 18 action verbs and 38 states. 30 verbs were purely causative and they were all action verbs; 14 verbs expressed caused movement. Here is a breakdown of the verb senses in figure form:

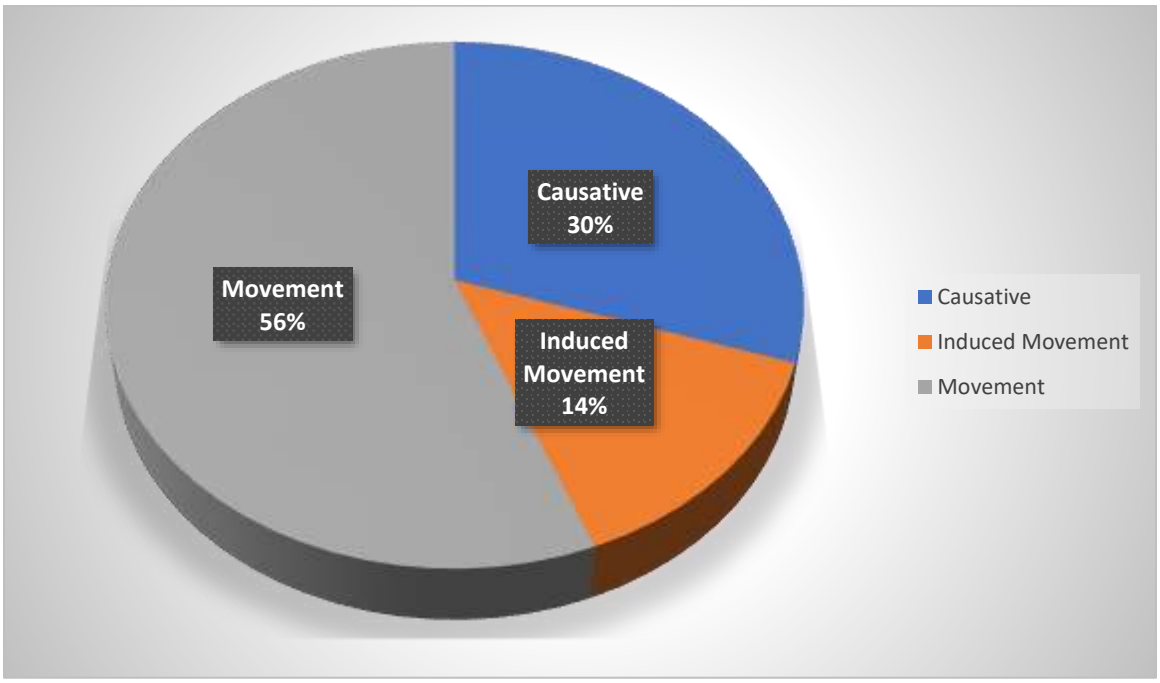


Figure 20: Distribution of meanings of Form IV in the MSA corpus

Based on Figure 20, we argue that movement towards a goal or a result is the potential meaning of Form IV and causation merely is one possible type of discourse message conveyable by this basic notion. Stem IV denotes an event in which a subject construed as a doer/actor brings about a movement in an affected participant. This explain why at first sight Form IV seems to be causative. However, in actual fact in transitive constructions it expresses the more abstract idea of a movement towards a goal or a result induced in the direct object by the subject.

To make this notion clearer, we went through the eight senses of Form IV given by Glanville in Table (128) and found that all the senses have the idea of an induced movement:

- Marked Causative: ðaaba 'to melt' int →A-ðaaba 'to melt' trns
  The verb 'A-ðaaba' expresses the inducing of a change of state from a solid state to a liquid state; the resultant state is reached after an induced movement that causes the solid to become a liquid.
- Giving and Sending: xabar 'news' ʔ → axbara 'to inform' ditrns
  The verb 'A-xbara' evokes the notion of transfer of information from one person to another.
- Activated State: ḥaasan 'good' →A-ḥsana 'to do well' int ; 'to perfect'trn
  'A-ḥsana' expresses a movement leading towards the state of goodness; in transitive use the movement is induced in the referent of the direct object by the referent of the subject.
- Base denoting a Product: zahr 'flower' → A-zhara 'to flower, blossom' int
  The noun 'zahr' (flower) becomes 'A-zhara' (to flower, blossom) by affixing the 'a-', consequently the verb expresses a movement from one state to another.
- Base denoting a Goal: ṣabaaḥ 'morning' → A-ṣbaḥa 'to begin morning; to become'
  Here there is a movement from a state of darkness to a state of light.
- Movement: rasila 'to flow freely' int →A-rsala 'to let flow; to send' trns/trns+obl
  In this case the root already denotes movement and so the prefix 'a-' merely adds the idea of orienting the movement in a certain direction.
- Resultant State: ḍaʕiif 'weak' → A-ḍʕafa 'to weaken' trns

Here there is a change of state from strong to weak because of an induced movement.

- Activated Disposition: ṭaaʕa ‘to be subservient’$_{obl}$ → A-ṭaaʕa ‘to obey’$_{trns}$
  Here subservience is construed as both dynamic and directional, i.e., as the performing of actions oriented towards manifesting the disposition of subservience to someone.

We can deduce from the eight examples given above that, when added to a verb or a noun, the prefix ‘A-’ denotes an idea of movement towards a goal or a result. Consequently, we conclude that causation corresponds to one actualization of this potential meaning in which a causer induces a movement in a causee that propels the latter into the performance of an action or the change of a state.

Chapter 6 : Corpus Analysis Decausativizing Prefixes ‘In-’ and ‘ Ta-’

6.1. Introduction

The previous chapter has provided numerous examples of verbs that express movement in Form IV. It was suggested there that causation is not the potential meaning of Form IV. This chapter continues to investigate decausativization with three forms: Form V (*ta* + gemination), Form VI (prefixation with *ta-* + lengthening of the middle vowel), and Form VII (prefixation with ‘*n-*’). In contrast to the forms examined in the previous chapter, it is assumed in the literature that these forms are anticausative. Consider the following examples (175-177):

(175)

انكسر االشبّاك (Form VII)

In-kasara al-chobbak

Broke the window

The window **broke**.

La fenêtre **s’est brisée**

(176)

تحطّم القطار (Form V)

Ta-hattama al-kitar

Crashed the train

The train crashed.

Le train **s'est écrasé**

(177)

تشاور الرجلان (Form VI)

Ta-chaawara al-rajulan

Consulted the two man

The two men **consulted** one another.

Les deux hommes **se sont consultés**.

We have added a translation into French with these examples, as it brings out the unity of meaning conveyed by the Arabic forms better than the English translation does, as all three verbs in (175)-(177) correspond to reflexive forms in French. We will now examine in the corpus whether these verb forms express only anticausation or whether they can also express other meanings.

6.2. Form VII: prefixation with ‘in-’

6.2.1. Introducing Form VII

Form VII can be seen as being derived from a triconsonantal root by prefixing it with the augmentative letter نْ ‘n’ and giving it the pattern اِنْفَعَلَ ‘in-faʕala’. Alternatively, one can also treat it as derived from Form I فَعَلَ by the prefixing of نْ /n/, and the insertion of اِ ‘I’ to facilitate pronunciation, to produce the resulting pattern اِنْفَعَلَ ‘in-faʕala’. According to some researchers, e.g. Kouloughli (1994), Form VII is always intransitive and more than 90% of the cases of Form VII express a reflexive passive value with respect to Form I. Moreover, in the etymology of Arabic base letters and their meanings, it is assumed that the main meaning expressed by the prefix ‘n’ is ‘genericity’. This may explain the tendency of Form VII verbs to be intransitive. However, the study of Form VII in our corpus revealed various other types of meaning as well.

6.2.2. Corpus results

In the CA corpus, we found 51 instances of Form VII verbs, all of which were intransitive. The absence of transitivity obviously entails the absence of the idea of causativization. However, does this automatically mean that Form VII verbs are anticausative as previous researchers have claimed? With these Form VII verbs, a first distinction should be made between human and non-human subjects. Of the 51 instances in the CA corpus, there were 32 with human subjects. If we omit verbs that occurred more than once in the data, we get the following proportion: 15 different verbs with human subjects and 18 different verbs with non-human subjects, as shown in the figure below:

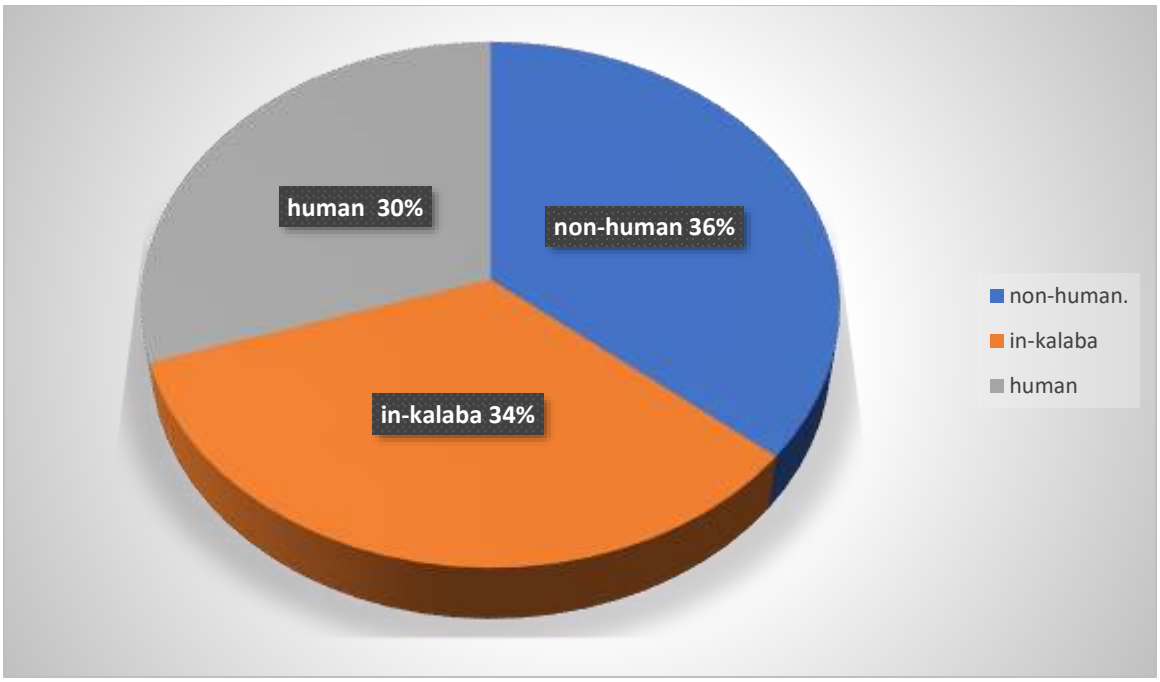


Figure 21: Frequencies of human vs non-human subject with Form VII verbs in the CA corpus

The difference between human and non-human subjects is therefore not significant, and we cannot draw any statistical distinctions based on animacy. The repetition of the verb 'in-kalaba' is due to the context of the spread of Islam at that time. In the Quran, God often warns people from apostasy, which is why the verb 'in-kalaba' (turn back on something) is repeated more than the other verbs. The verb 'in-kalab' in Form VII construes people as both the initiator and the recipient of the action. Here are some other examples of this form:

(178)

وإذ استسقى موسى لقومه فقلنا اضرب بعصاك الحجر فـ**انفجر**ت منه اثنتا عشرة عينا

Wa idha istaska moussa likawmihi fakolna a-drib bi-ʕasak al-hajar f-**in-fajara**-t minh ithnata ʕachra ʕayn.

And [recall] when Moses prayed for water for his people, so We said, "Strike with your staff the stone." And there **gushed forth from it** twelve springs.

Et [rappelez-vous], quand Moïse demanda de l'eau pour désaltérer son peuple, c'est alors que Nous dîmes : "Frappe le rocher avec ton bâton." Et tout d'un coup, douze sources **s'explosent/jaillirent.**

(179)

أفمن أسس بنيانه على تقوى من الله ورضوان خير أم من أسس بنيانه على شفا جرف هار **فانهار** به في نارجهنم

Afaman assasa bunyanahu ʕala taqwa mina Allahi waridwanin khayrun am man assasa bunyanahu ʕala shafa jurufin harin fa-inhara bihi fi nari jahannama waAllahu la yahdee alqawma alththalimeena

Then is one who laid the foundation of his building on righteousness [with fear] from Allah and [seeking] His approval better or one who laid the foundation of his building on the edge of a bank about to collapse, so it **collapsed** with him into the fire of Hell? And Allah does not guide the wrongdoing people.

Lequel est plus méritant? Est-ce celui qui a fondé son édifice sur la piété et l'agrément d'Allah, ou bien celui qui a placé les assises de sa construction sur le bord d'une falaise croulante et qui **s'écroula/croula** avec lui dans le feu de l'Enfer? Et Allah ne guide pas les gens injustes.

(180)

فأوحينا إلى موسى أن اضرب بعصاك البحر **فانفلق** فكان كل فرق كالطود العظيم

Faawhayna ila moosa ani idrib bi-ʕasaka albahra fa **in-falaqa** fakana kullu firqin kaalttawdi al-ʕatheemi

Then We inspired to Moses, "Strike with your staff the sea," and it **was parted**, and each portion was like a great towering mountain.

Alors Nous révélâmes à Moïse: «Frappe la mer de ton bâton». Elle **se fendit** alors, et chaque versant fut comme une énorme montagne.

(181)

وا**نطلق** الملأ منهم أن امشوا واصبروا على آلهتكم

Wa **in-talaqa** almalao minhum ani imshoo waisbiroo ʕala alihatikum inna hatha lashayon yuradu

And the eminent among them **went forth**, [saying], "Continue, and be patient over [the defense of] your gods. Indeed, this is a thing intended.

Et leurs notables **se sont allés/partirent** en disant: « Allez-vous en, et restez constants à vos dieux: c'est là vraiment une chose souhaitable. »

According to Kemmer (1993) this form of the verb has a specific نْ 'n' prefix and it basically has a reflexive shade of meaning in which the agent performs the action on itself, the subject of a reflexive verb being both the performer and the recipient of the action. The نْ 'n' prefix can thus be said to be adding the meaning of *to itself* in the examples above. The prefix 'n' reduces the distinction between the initiator and the recipient of the action, so that the subject is represented as changing state spontaneously. For example, in (178) after striking the stone, suddenly twelve springs gushed from it, where the verb root 'f-j-r' expresses the idea of explosion. In the same way, the root 'h-w-r' expresses the idea of collapse and in (179) the edge of a bank collapsed all by itself. In (180) the sea parted after being stuck with a staff, however the root 'f-l-k' means the dawn and the dawn is conceived as exploding into light after the night, expressing the idea of 'burst'. It is clear in these examples that these verbs express an event in which the agent carries out an action on or through its own self. In Form I verbs (faʕala) the endpoint role in a transfer may be a recipient, a goal, or a beneficiary depending on the semantic content of the event itself. In Form I, the semantic role of the participant who acts is more prominent than the semantic role of the one who benefits from the action. One party acts and that action flows outwards, terminating elsewhere, which produces the impression of a trajectory. However, in Form VII 'infaʕala', the party that instigates an action is also the party that is affected by it. Contrary to Form I, Form VII manifests an absence of the notion of trajectory and therefore absence of movement because the action is done by the subject on itself. Consequently, the sentences above indicate an absence of an external agency involved in bringing about the event. The absence of an external agent explains the absence of the notion of causation. Indeed, most Form VII verbal constructions have reflexive meaning. Consider the following two sentences:

(182)

انكسر الزجاج

In-kasara al-zujaj

The window **broke.**

La fenetre **s’est cassée.**

(183)

زيد **انخدع**

In-kadaʕa zayd

Zayd **got taken in.**

Zayd **s'est fait trompé.**

In order to reflect the meanings of the corresponding sentences, the translation of the two sentences above should be interpreted as inchoative. The way it is construed in Arabic is better reflected by the French translations, where we find the reflexive verbs ‘se casser’ in (182) and ‘se tromper’ in (183). These translations illustrate the fact that in (182) the window which is inanimate does not intervene in the action and it occupies the roles of agent and patient at the same time, as it undergoes the action of breaking by itself. However, in (183) the subject is animate, and so the action is understood to have been brought on the person who was deceived by himself. Therefore, we observe a lack of control in both sentences. In (182) the window has no control over the action of breaking and in (183) Zayd did not want to be taken it but he was. The actions described by both types of verb may therefore be viewed as involving restriction of agency. On one hand, the action of breaking in (182) involves a spontaneous change of state where explicit agency is lacking but the window is still construed as performing the event. However, in (183) there is something of a gray area, where an action is not a simple change of state, nor an action performed deliberately by an agent upon its own self, but the subject is construed as having brought the action upon themselves by their naiveness.

Figure 22 shows the difference between Stem I verbs and Stem VII verbs:

Root	**Form I**	Meaning	**Form VII**	Meaning
h-s-r (restrict)	hasara	Hold in check/impose restriction	In-hasar	Be limited to a single area
k-m-ch (hold tight)	Kamacha	Retract/belt	In-kamach	Become marked with

				wrinkles/make or become tight
Dh-m-m (hold)	dhamma	Attract/draw	In-dhamma	Be a member/be connected to/adhere to
t-l-k (free/release)	talaka	Open/get free	In-talaka	Move in a rushed manner/be free
Ch-g-l (work/job)	chagala	Occupy with	In-chagala	Be taken up

Figure 22: Form I meanings vs Form VII meanings

The table above shows that most Stem I verbs need two participants and the action is externally oriented. For example, 'hasara' (hold in check/impose restriction) needs an initiator to impose a restriction on someone/something (recipient) and the action is oriented from the subject to the object affected by the restricting. In the same way the verb 'talaka' (open/release) requires two participants and denotes an externally oriented event of releasing someone or something from captivity. Stem VII verbs, in contrast, are internally oriented. 'Inhasara' (be limited) does not require a second participant. The subject itself undergoes the action. This internal orientation of the event can be explained by the fusion of the initiator and the endpoint.

We conclude that the /n/ affix nullifies the external orientation of the action denoted by a Form I verb. This creates an argument alternation between an externally oriented Stem I verb and an internally oriented Stem VII verb formed from the same root.

6.3. Form V and VI: prefixation with 'ta-'

6.3.1. Introducing Form V and VI

Form V تفعّل ta-faʕʕala and Form VI تفاعل ta-faaʕala are built by augmentation of Forms II and III respectively, the consonant 't' being added to these two forms. One

function of the prefix 'ت' (t-) in Arabic is to denote retrospectiveness. According to Joseph Dichy*:*

> t- correspond à un morphème-écho, c'est à dire à un morphème dont le sens est celui d'un retour (en écho) sur l'agent du procès décrit par le verbe. C'est la combinaison de ce dernier avec les valeurs des schèmes de base II et III qui produit le sens second de réciprocité généralement associé à ces schèmes.
>
> (Dichy 1993: 27).

> [t. is basically an echo morpheme, that is a morpheme whose meaning is that of a return (or echo) to the agent of the process described by the verb. It is the combination of the latter with the values of forms II and III that produces the secondary sense of reciprocity generally associated with these patterns]
>
> (Dichy 1993: 27).

In our corpus, we checked whether Form V and VI verbs always express anticausativization or whether they also have other meanings. Our initial hypothesis was that retrospectiveness was the potential meaning of Form V and reciprocity the basic meaning expressed by Form VI.

In the previous chapter we argued that with certain roots Stem II yield an active movement verb that describes an event consisting of a starting-point and an endpoint phase. This stem also forms verbs from roots that denote change of state and are conceptualized as coming about due to a direct or indirect cause. The goal of this section is to show how a reduplicative morpheme capable of expressing causation (gemination) and a reflexive morpheme (t-) interact in Stem V to determine a certain view of an event. Regarding Stem VI, we aim to determine the effect of the interaction of the lengthening of the middle vowel with the reflexive morpheme.

6.3.2. Form V

To compare Forms II and V, let us begin by Figure 23 below:

Root	Form II	Form V
ʕ-l-m ‘knowledge’	ʕallama ‘to teach/to give knowledge	Ta-ʕallama ‘to get taught’
Ǧ-y-r ‘change’	Ǧayyara ‘to make/cause change’	Ta-ǧayyara ‘to get changed’
z-w-d ‘furnish’	Zawwada ‘to give supplies	Ta-zawwada ‘to be given supplies
ʔ-θ-r ‘influence’	ʔaθθara ‘to influence’	Ta- ʔaθθara ‘to be influenced’
w-r-t	Warrata ‘to enmire’	Ta-warrata ‘to get bogged down’

Figure 23: Form II vs Form V meanings

We observe from the table above that whereas Form II verbs describe externally caused events, the presence of the /t/ affix in Stem V specifies that the event described is internally oriented. The internal orientation gives the impression that Form V verbs are resultative passive. The root ʔ-θ-r, for example, contributes the meaning of *influence* in both cases but in two different ways. This is represented below:

Stem II: ʔaθθara ‘to influence’ trns: [x CAUSE <influence> to y]
Stem V: ta-ʔaθθara ‘to be influenced’ int: [x CAUSE <influence> to x]

Given standard cultural practice regarding what one person does in relation to another involving *influence*, Stem II is interpreted as *producing influence on* someone/something. The structure with Stem V where the verb is intransitive, describes a change of situation. This is interpreted as *being influenced*. The affix ‘ta-’ denotes a resultative passive situation. This is due to the retrospective meaning of ‘t’: the action is seen from a ‘downstream’ point of view, i.e., after it has been realized, and from the point of view of the downstream participant, i.e., the patient. Although, not all Form V intransitive verbs can be construed as transitive, a similar analysis can nevertheless be applied to these types of verbs as well, as illustrated by the comparison between the transitive Form II *dakkara ‘remind’* and the transitive *ta-dakkara* ‘remember’:

(184)

ولقد أرسلنا موسى بآياتنا أن أخرج قومك من الظلمات إلى النور و**ذكر**هم بأيام الله إن في ذلك لآيات لكل صبار شكور Verse (14:5)

Wa lakad arsalna moussa bi-ayatina an akrij kawmaka min al-dulumat ila al-nur wa **dakkara** (hum) bi-ayam allah inna fi dalika la-ayat likul saddar chakur.

And We certainly sent Moses with Our signs, [saying], "Bring out your people from darknesses into the light and **remind** them of the days of Allah." Indeed in that are signs for everyone patient and grateful.

(185)

فقولا له قولا لينا لعله **يتذكر** أو يخشى Verse (20:44)

Fa kula lahu kawlan layana laʕallahu ya-**tadakkara**(u-Maculin) aw yakcha

And speak to him with gentle speech that perhaps he may be **reminded** or fear [Allah].

The representation of the interpretation of the above sentences contains the meaning of causation in both cases and this is due to gemination. In (184), Moses causes the people to remember an idea and it is represented as:

Stem II *dakkara* ‘to remind ‘: [x CAUSE y to call to mind z]

The y argument here is the undergoer of causation. When this root is used in Form V, the resulting structure dictates that the initiator and endpoint of the event are one and the same. Hence, the verb denotes an idea of a resultative passive event. This can be represented as:

Stem V *ta-dakkara* ‘to remember’: [x be brought by x to call to mind z]

Here, the second (reflexive) x argument is interpreted as being something akin to the location of the *idea* contributed by the root and therefore it is the same as the subject.

The result is a verb where the reference of the subject retrieves an idea from memory internally. The subject instigates mental activity, which is directed at the object of the verb, but which does not terminate with that object. Instead, the activity both begins and finishes with the subject, and this is encoded by the /t/ affix on the verb. The idea of causation in Form V is also discernible in the following part of examples, which exemplify Form II *tayyara* versus Form V *tatayyara*:

(186)

طيّرالرجل العصفور

Tayyara al-rajul al-ʕusfur

The man **let** the bird **fly**

(187)

قالوا إنا **تطير**نا بكم لئن لم تنتهوا لنرجمنكم Verse (36:18)

Kalou inna **tatayyara(**na-PL.) bikom lain lam tantahou lanarjomannakom

(oiseau de malheur)

They said, "Indeed, we **consider you are a bad omen**. If you do not desist, we will surely stone you.

As in example (185), in which there is an internal mental activity (drawing an idea or a knowledge in the subject's own memory), the notion of reflexivity is also present in the Stem V verb *taṭayyara* 'to discern an omen' in the example (187). The stem II verb *ṭayyara,* 'to let (birds) fly', is causative as the subject (the man) causes the object (the bird) to fly. The stem V verb also involves causation, in the sense that the subject is responsible for making themselves be considered an evil omen. Unlike the stem II verb, however, this action is not projected outward here. The subject therefore acts and is affected by that action. The structure of the verb is as shown in the following representation:

Stem V *taṭayyara* 'to sense an omen': [x is caused by x to be considered an evil omen]

This representation shows that even though the verb form V is intransitive, there is a meaning of internal causation due to the gemination. The idea is that of someone causing themselves to be seen as a bad omen. Hence Form V does not correspond to a simple reflexive; but also involves the notion of retrospectiveness, viewing the event from the downstream perspective of the patient who has undergone it.

6.3.3. Form VI

Form VI is a reciprocal of Form III. According to Kouloughli (1994), in most cases Form III expresses the idea of 'pooling'/ 'bringing together'. For example, عاون , a Form III verb, means 'to help (someone)'; the corresponding Form VI means 'to help each other' and is almost always translated as 'to cooperate'. Consider the two sentences (188-189) below:

(188)

عاونت مصر الفلسطينيين

ʕaawana(t-FEM) masr al-falastiniyin

Egypt helped the Palestinians.

(189)

تعاونت مصر والفلسطينيون

Ta-ʕaawana(t-FEM) masr wa alfalastiniyoun

Egypt and the Palestinians helped each other.

While the Form III verb takes a direct object, as in (188). However, the Form VI verb usually does not, as in (189), and is often construed with the preposition مع 'with'. Consequently, sentence (189) could be re-formulated as in (190) using the preposition مع 'with':

(190)

تعاونت مصر مع الفلسطينيون

Ta-ʕaawana(t-FEM) masr maʕa alfalastiniyoun

Egypt cooperated with the Palestinians.

Thus, whereas Form V denotes retrospectiveness, Form VI is mainly used to express reciprocity. This idea is obvious in the CA corpus where the expression ‘each other’ is used to translate Arabic Form VI verbs. In our CA corpus, we found 77 occurrences of this form. Here are some typical examples:

(191)

فلما **تراءى** الجمعان قال أصحاب موسى إنا لمدركون

Fa-lamma **taraaʔa** aljamʕan kala ashab moussa inna lamudrakun

And when the two companies **saw one another**, the companions of Moses said, "Indeed, we are to be overtaken!"

(192)

فعميت عليهم الأنباء يومئذ فهم لا **يتساءلون**

Fa-ʕamiat ʕalaihom al-anbaʔ yawmiʔidin fa-hom la ya-**tasaaʔala**(un-PL)

But the information will be unapparent to them that Day, so they will not [be able to] **ask one another**.

(193)

ما لكم لا تناصرون

Malakom la **ta-naasara**(un-PL)

[They will be asked], "What is [wrong] with you? Why do you not **help each other?"**

(194)

فأقبل بعضهم على بعض يتلاومون

Fa-akbala baʕdohom ʕala baʕdin ya-**ta-laawama**(un-PL)

Then they approached one another, **blaming each other.**

Of the 77 occurrences, we found more than half which were translated by the expressions ‘‘with one another’’ and ‘‘with each other’’. These two expressions were used 42 times, representing 55% of the data, as shown in Figure 24 below:

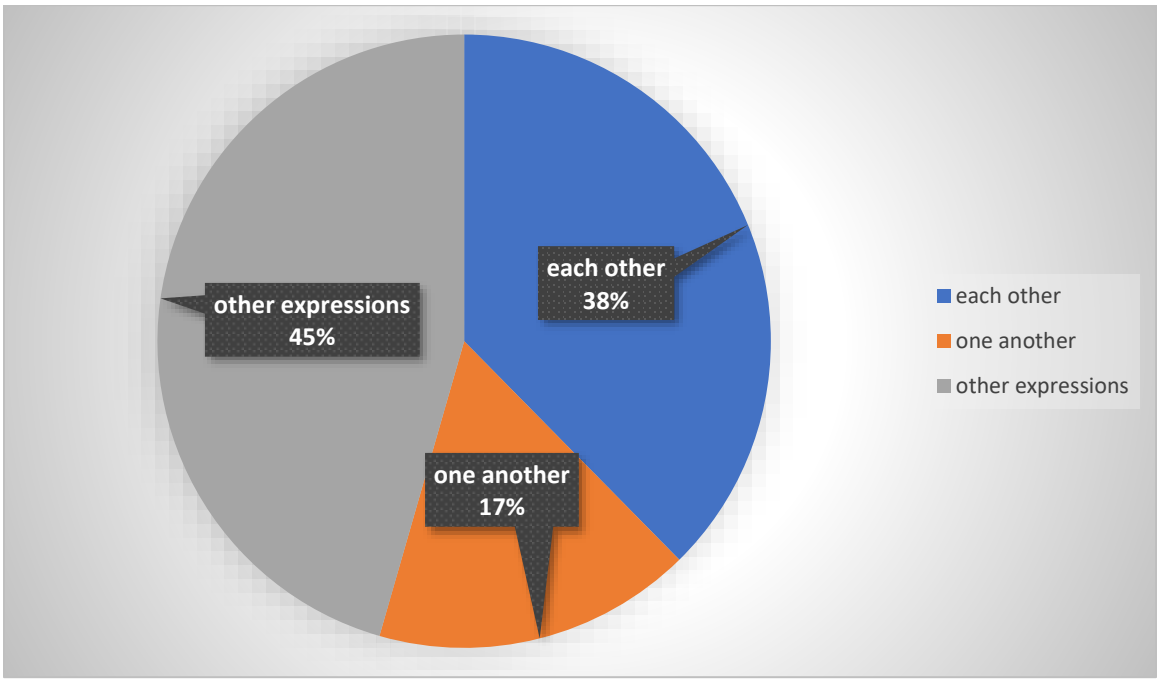


Figure 24: Frequencies of expressions used in translations of Form VI verbs in the CA corpus

The difference between Form III and Form VI verbs is that whereas Form III encodes the fact that the subject is the initiator of a reciprocal relation of which the direct object is the second participant, Form VI reflexivizes the two roles, meaning that the subject occupies both. This duality of roles may explain why the subjects in the examples of Form VI of in the CA corpus are almost all in the plural or the dual. In addition, there are some Form VI verbs where a singular subject is interpreted as constituting a mass. Form VI thus involves the idea of sharing. For example, in (191) above, the two groups share the event of seeing; in (192), the people exchange questions; in (194), the people share the idea of blaming. These verbs express events in which an action is carried out jointly by all event participants and are similar to reciprocal events because in both cases each participant plays two roles. To better understand the meaning of Form VI we should take into account the fact that Form VI is derived from Form III with the prefix 'ta-'. Form III means 'to put yourself or someone else into a relation defined by an action involving another entity' (reciprocity) and this is due to the lengthening of the first vowel 'f**a**aʕala'. Hence, if we add the retrospective passive idea expressed by the prefix 'ta-' to Form III, the result is the notion that the person who put themselves into relation with the other entity also put

themselves on the receiving end of the action, whence the idea of reciprocity. Consequently, we propose that the potential meaning of Form VI is that of a reciprocal resultative passive.

Chapter 7 : Contrasting causation within the three forms

7.1. Introduction

After studying the potential meaning expressed by ablaut, gemination (Form II) and prefixation with *a-* (Form IV) and how causation is conveyed with these forms, and anticausativization, our task in this chapter is different and more specific. We aim here to contrast the three ways of expressing causation with the same triliteral roots. This will allow us to show how the potential meaning colours the particular way each of the three forms represents the general notion of causation. This type of classification will be carried out following the model of Duffley's (1992 and 2020) studies of the infinitive after verbs denoting causation where he explains why *make* and *have* are followed by the bare infinitive, while *cause, occasion, get* and all the other causatives are construed with the *to*-infinitive.

7.2. Semantic contrast between gemination and prefixation with a- involving causation

7.2.1. Corpus data of the same triliteral root in Form II and Form IV

Inspired by Duffley's (2020) study, the goal of the comparison of the data with the same triliteral root that can be in Form II and Form IV is to figure out how the linguistic meaning meets the linguistic form, in Duffley's terms (2020: 94) *"*examine the correlation between the semantic content of causative verbs and the linguistic form of the complement that follows them in English*".* In our case the correlation that will be studied is that between the semantic content of causative verbs and its linguistic form when it is expressed by Form II, Form IV and ablaut in Arabic. Working on 700 examples in the CA corpus, we found 12 examples that have the same triliteral roots in both Form II and Form IV. Below, we cite some examples of the contrast between these two forms:

(195)

a) وأ**نزل** من السماء ماء فأخرج به من الثمرات رزقا لكم

wa **a-nzala** min al-sama maa fa-akraja bih min al-thamart rizkan lakom

and (he) **sent down** from the sky, rain and brought forth thereby fruits as provision for you.

b) **نزل** عليك الكتاب بالحق مصدقا لما بين يديه وأنزل التوراة والإنجيل

Nazzala alika al-kitab bil-hak mosaddikan lima bayna yadayhi wa **a-nzala** altawrat wa al-injil.

He has **sent down** upon you, [O Muhammad], the Book in truth, confirming what was before it. And He **sent down** the Torah and the Gospel.

(196)

a) وإذ فرقنا بكم البحر **فأنجيناكم** وأغرقنا آل فرعون وأنتم تنظرون

wa idha farakna bikom al-bahr fa **a-nja(ynakom)** wa a-grakna al firaoun wa anton tandhouroun

And [recall] when We parted the sea for you and **saved** you and drowned the people of Pharaoh while you were looking on.

b) ولما جاء أمرنا **نجينا** هودا والذين آمنوا معه برحمة منا و**نجيناهم** من عذاب غليظ

wa lamma jaa amruna **najja(yna)** hud wa al-dhin maahu bi-rahmatin menna wa **najja(ynahom)** min adhab ghalidh.

And when Our command came, we **saved** Hud and those who believed with him, by mercy from Us; and We **saved** them from a harsh punishment.

(197)

a) **وأوصاني** بالصلاة والزكاة ما دمت حيا

wa **a-wsa(ni)** bi-alsalat wa al-zakat ma domtu hayan

and (he) has **enjoined** upon me prayer and zakah as long as I remain alive.

b) **ووصى** بها إبراهيم بنيه ويعقوب يا بني إن الله اصطفى لكم الدين فلا تموتن إلا وأنتم مسلمون

wa **wassa** biha Ibrahim banih wa yakub ya bani inaa Allah istafa lakom al-din fa la tamutunna illa wa antom muslimun.
And Abraham **instructed** his sons [to do the same] and [so did] Jacob, [saying], "O my sons, indeed Allah has chosen for you this religion, so do not die except while you are Muslims."

The twelve examples in the CA corpus show that the triliteral root occurs in Form IV more frequently than in Form II in 8 cases and in Form II more than in Form IV in four cases. For example, in the whole CA corpus the triliteral root (n-z-l) 'descend' occurs 183 times in Form IV (a-nzala) and 62 times in Form II (nazzala); on the other hand, the root (w-s-y) 'ask repeatedly' occurs 11 times in Form II and 5 times in Form IV. The Form IV verb 'A-nzala' has the subject 'God' in 179 cases and the subject 'people' only in 4 cases. The Form II verb 'nazzala' has the subject 'God' in all cases except one which has the subject 'you'. The more frequent occurrence of Form IV over Form II with (n-z-l) can be explained by the relation between God and the people where the prophets are the messengers of God's revelation. This relation involves a transfer and movement (e.g., from sky to earth and from the prophets to people) that is why we found more Form IV than Form II. On the other hand, the Form IV verb 'a-wsa' has the subject 'God' in 2 cases and the subject 'you' in 3 cases, while the Form II verb 'wassa' has the subject 'God' in all cases. Consequently, the occurrence of Form II may be explained by the insistence and intensification that people need to accept and believe in new ideas and miracles.

With respect to the contrast between the two forms in the examples above, in (195), the triliteral root (n-z-l), is translated by the same English verb in both Forms IV and II 'sent down'. However, the meaning conveyed by each form is not exactly the same. In (195a), the Form IV (anzala) 'sent down' carries the idea of induced movement where there is a movement of water from the sky to the earth in <u>one shot.</u> However, in (195b), the action of sending takes much more time and needs to be repeated in order to be completed. It is not like in (195a) where what comes down is water (rain), in (195b), what comes down is the revelation which is sent down not in one shot but <u>bit by bit</u>. That is why in (195b), the verb 'sent down' expresses rather an idea of a repeated action and not a movement as in Form IV in (195a). In (196), however the root (n-j-w) 'save' has two

different forms in (a) and (b), the meaning conveyed by each form seems to be almost the same idea of causation. In fact, in (196a), God explains how he was the cause of the people being saved from Pharaoh using Form IV (a-nja). In (196b), God also shows his mercy by saving the nation of Hud expressed by Form II (najja[w-a]). Although the general idea of causation is expressed in both cases, we can discern a slight difference between the messages conveyed in (196a) and (196b). In (196a), the idea of saving is done by parting the sea and this is a miracle performed at a snap of God's fingers (i.e., in one shot), so in that the people move from a state of a danger to a state of safety. However, in (196b), we notice a repeated action of saving and this is also conveyed by the repetition of the verb (*najja*) twice in the same sentence. By the same token, at first sight, the two forms of the same verb (*w-s-y*) 'instruct' seem to have identical semantic meaning in (197), both conveying the notion of causation. However a deeper look into the two sentences leads us to understand that in (197a) the verb is used in Form IV as the instructions are given from God to only one person who is the prophet and, because he is a prophet, God does not need to repeat the instruction but he needs only to transfer the message. However in (197b), the prophet is instructing a group of people, his children, so he needs to repeat the instruction so that they are able to understand, a message conveyed identically by the geminated Form II (*wassa*). Thus, although in the examples above, the notion of causation is present in both forms, causation is an actual message conveyed by the verb and not its potential meaning.

The analysis of the examples above goes against Ford's affirmation that the three varieties (Form II, Form IV and ablaut) all behave alike. He gives the example of the root (h-z-n-) 'become sad' where he assumes that the three derived forms convey the same meaning in the following example (198):

(198)

Hazina 'to be sad'	→	Hazana	'to make s.o sad'	(ablaut)
		Hazzana	'to make s.o sad'	(Form II)
		A-hzana	'to make s.o sad'	(Form IV)

(Ford 2009:3)

However, this is not accurate. If we investigate the Arabic dictionary 'almaany-المعاني' (Meanings), we find that Form II *hazzana* can also mean 'thin out' as in example (199):

(199)

حزَّن القارئُ في قراءته

Hazzana alkariʔ fi kiraʔatihi

The reader [thinned/softened/sadden] his voice while reading.

(Almaany online dictionary)

Here the saddening is both intentional and completely under the control of the subject. Form IV (ahzana) also can have other meanings besides 'to make s.o sad'. In the dictionary just referred to, *ahzana* is also glossed as 'walk in thick high land' (desolate) as in example (200):

(200)

أحزن :مشى في الحزن، أي الأرض الغليظة المرتفعة.

Ahzana :macha fi alhazan, ay al-ardh al-galidha al-mortafiʕat

Ahzana: walk in the 'alhazan' i.e., walk in the high and thick land.

(Almaany online dictionary)

Here the sad, desolate land is the resultant locus of the subject's movement, in conformity with the potential meaning of Form IV. These uses suggest that the way making someone sad is construed with the three forms in (198) above is not the same. Further data in which the full context where these forms occur can be observed is required to confirm this idea.

Another example that shows how Ford's analysis is superficial is the triliteral root (q-t-ʕ) 'cut'. It can be used in Form II (qattaʕa) 'to chop up' and in Form IV (a-qtaʕa) 'to give someone a piece of land'. The meaning of the two forms is completely different even outside of an actual context. In the example below in (201), a list of the ten possible verb forms of the triliteral root (q-t-ʕ) where each linguistic form conveys a different linguistic meaning.

(201)

qṭʕ → I. **q**aṭaʕa ‘to cut’ $_{trns}$

II. **q**aṭṭaʕa ‘to chop up’ $_{trns}$

III. **q**aaṭaʕa ‘to interrupt; to boycott; to cut s.o. off’ $_{trns}$

IV. ʔa**qṭ**aʕa ‘to give someone a piece of land’ $_{ditrns}$

V. ta**q**aṭṭaʕa ‘to break up; cut in and out’ $_{int}$

VI. ta**q**aaṭaʕa ‘to intersect’ $_{int/obl}$

VII. ʔin**q**aṭaʕa ‘to cut out/off’ $_{int}$

VIII. ʔi**q**taṭaʕa ‘to cut oneself a piece; to glean’ $_{trns}$

X. ʔista**qṭ**aʕa ‘to deduct’ $_{trns}$

This paradigm shows that multiple verbs may be formed from the same set of three consonants (triliteral root), and that these verbs share some kind of semantic connection. Form II, for example, produces an idea of repetition in example (201) *qaṭṭaʕa* ‘to chop up’; however it expresses the idea of causation in example (198) *hazzana* ‘cause/make someone sad’.

7.2.2. Ablaut vs Form II and Form IV

In this section we will compare the semantic difference between ablaut and both Form II and Form IV. Because of the scarcity of ablaut examples in our corpora, we will investigate the examples given by Hallman (2006). His analysis of causation is limited because he disregards an important methodological point which Duffley (2020) argues to be essential:

> Dissociating linguistic meaning from linguistic form represents a failure to respect the principle of embodiment as it applies to human language on the most basic level, namely the fact that language is symbolic in nature.

> Generative Grammar disregards this principle by attempting to deal with form in abstraction from meaning on the syntactic level, as dictated by the autonomous syntax postulate.
>
> (Duffley 2020: 196)

In order to investigate ablaut in Arabic, we can start with the list of verbs given by Hallman (2006):

(202)

a. ḥazina (*be sad*)	→	hazana	→	hazzana
b. hadima (*fall to ruin*)	→	hadama	→	haddama
c. xariba (*be destroyed*)	→	xaraba	→	xarraba
d. waṣala (*arrive*)	→	wasala	→	wassala
e. xalā (*be vacant*)	→	xalla	→	xalla
f. saruḥa (*become clear*)	→	saraha	→	sarraha
g. našiṭa (*be lively*)	→	našata	→	naššata
h. samina (*be fat*)	→	samana	→	sammana

According to Hallman (2006), the verbs presented above can exhibit both ablaut and gemination. In order to contrast all three forms, we investigated whether these verbs can also occur in Form IV. In the example below we cite the possible Form IV versions of the examples given in (202):

(203)

a. ḥazina (*be sad*)	→	ahzana
b. hadima (*fall to ruin*)	→	Ø
c. xariba (*be destroyed*)	→	axraba

d. waṣala (*arrive*) → awsala

e. xalā (*be vacant*) → axla

f. saruḥa (*become clear*) → Ø

g. našiṭa (*be lively*) → anšata

h. samina (*be fat*) → asmana

From the above examples we note that only six of the eight verbs can occur in Form IV. Hallman gives the translation of both the ablauted and the Form II verbs as expressing causation, so *hazina* 'be sad' becomes *hazana* ' make sad' after ablaut and according to him it keeps the same meaning 'make sad' in Form II (*hazzana)*. However this is not accurate. To illustrate this, we looked for the meanings and forms of the root (s-m-n) which evokes the idea of 'butter/oily food'. *Samina/Smuna* becomes *samana* after ablaut, it becomes *sammana* in Form II and *A-smana* in Form IV. We give the examples found with these forms in (204):

(204)

a) samuna

سمُن الحيوانُ

samuna al-hayawan

the animal **became (very) fat.**

b) samina

سَمِنَ الرجل

samina alrajul

the man **became fat.**

c) sammana (Form II)

سمَّن الرجل الحيوانَ

sammana alrajul al-haywan

the man **made** the animal **fat (fattened)**

d) A-smana (Form IV)

d1) **أَسمن** الرجل الحيوانَ

A-smana alrajul al-haywan

He man **made** the animal **fat (fattened)**

d2) **أَسمن** الرجل

A-smana alrajul

The man **bought butter/oily food**.

d3) **أسمن** الرجل الخبزَ

A-smana al-rajul alkobz

The man **spread the butter over** the bread.

e) Samana (Ablaut)

e1) **سَمَنَ** الطَّعَامَ

Samana al-rajul al-taʕam

The man **put butter** on the meal.

e2) **سَمَنَ** الرجل الضُّيُوفَ

Samana al-rajul al-diouf

The man **gave** the guest **food with butter.**

From the above examples, it is obvious that it is impossible to assign a meaning to a verb without considering context. For example, the non-ablauted forms '*samuna*' and '*samina*' in (204a) and (204b) simply describe a state of being fat. The geminated Form II '*sammana*' evokes an idea of causation by making someone or something fat. However, the ablauted form and Form IV evoke various ideas and not only causation. Whereas Form IV '*A-smana*' in (204d1) expresses an idea of causation, in (204d2) it does not evoke this idea: in the second case the verb is intransitive and expresses an idea of movement leading to the possession of butter. In the example (204d3) the verb '*A-smana'* expresses

an idea of movement leading to there being butter all over the bread. In the same way, the ablauted form '*samana*' does not express causation in the two examples in (e). In (204e1) the woman carries out the stereotypical action on a meal that involves butter, i.e. buttering it, and in (204e2), the verb evokes an idea of performing an action whose nature is characterized by involving butter/oil with respect to the guest. Consequently, we must conclude that Hallman's classification of Arabic verb forms into causative and non-causative is not adequate as he focusses on the form but neglects the linguistic meaning by failing to investigate the forms in question in context.

Hallman's notion that ablauted verbs that can be geminated systematically express causation is thus not true for the CA corpus. In order to check this in the MSA corpus, we randomly selected the same number of verbs that can alternate between ablaut, gemination and Form IV as those examined in CA. The following examples with the same root 's-b-h' show that Hallman's claim does not hold for MSA either:

(205)

a) صَبُحَ الوَلَدُ
sabuha al-walad
The boy became beautiful.

b) صبَح القَومَ (Ablaut)
sabaha al-kawm
The people entered the morning.

c) اصبح الوَلَدُ (Form IV)
A-sbaha alwaladu
The boy entered the morning.

d) صَبَّحَ صَاحِبَهُ (Form II)
sabbaha (al-rajul) sahibahu
He said 'good morning' to his friend.

None of the three purportedly ‘causative’ forms of the root ‘s-b-h’ expresses causation.

To conclude, we can say that Hallman put exclusive focus on the examples expressing causation, neglecting to consider the fact that linguistic meaning is associated with linguistic form before being deployed in a context. Thus, his analysis fails to respect the basic principle of linguistic analysis enunciated in the passage below, which requires the linguist to seek the meaning permanently associated with the linguistic sign in long-term memory and to distinguish the latter from the message conveyed by the particular use of a form in a particular context:

> This monograph has attempted to show the explanatory gain that can be achieved by starting one’s analysis on the level on which meaning is stably embodied, which is normally that of the word or morpheme, where a linguistic sign is stored in a stable, permanent, and direct relation with its meaning outside of any particular context.
>
> (Duffley 2020: 199)

Conclusions and directions for further research

The conclusion will provide an overview and draw together the conclusions of the study. First, an overview on the major aspects discussed in chapters 1, 2, 3, 5, 6 and 7 is provided, and then the major findings of this study are summarised against the backdrop of the research questions posed in chapter 1, followed by the conclusions and identification of further areas of research regarding the semantics of the Arabic verb.

Overview of chapters 1, 2, 3, 5, 6 and 7

Chapter 1 explained the reason for the semantic orientation of the research by showing the limitations of syntactic theories for the analysis of causative verbs. Among these theories, the Unaccusative Hypothesis was demonstrated to be unable to draw a clear line between causative and non-causative verb meanings. The distinction between causative and middle alternation in English and Arabic was examined, and the Common Approach was adopted for our research as it proposes that verbs are derived from a category-neutral root, which was argued to be the case for Arabic verbs.

Chapter 2 gave a general description of the Arabic language, distinguishing between Classical Arabic and Modern Standard Arabic and illustrating the richness of Arabic morphology and how it is different from English in being based on discontinuous morphemes. The different verb forms in Arabic were introduced and an account was given of Forms I, II and IV, which are claimed in the literature to be exponents for the expression of the notion of causation.

Chapter 3 examined previous studies concerning causative alternation, principally Hallman (2006) on ablaut and gemination, Ford (2009) on Form IV (prefixation by a-) and Glanville (2018), who also focussed on Form IV. The first two authors failed to examine all of the various contexts in which the forms under study can be found; the third did examine the full range of usage but failed to identify the potential meaning underlying all of them.

Chapter 5 was devoted to analysing the corpus presented in chapter 5. We analysed causation in Forms II and IV and we compared the use of these two forms in the CA and the MSA corpora. The results supported the idea that previous studies failed to identify the potential meaning of the forms of interest and so were unable to offer any

explanation to why the notion of causation is present in some examples but not in others. The study of all of the uses of Form II and Form IV resulted in data proportions that showed that causativization is not the potential meaning of these two forms but rather one meaning of many other actual meanings conveyed by these verb forms when used in context.

The survey in chapter 6 gave an account of Forms V, VI and VII. The corpus data presented in this chapter demonstrated that these forms are not inherently decausativizing. It was shown rather that the potential meanings of these forms involve reflexivization and reciprocity, and that they can express causation when the latter is construed as internal to the causer or as returning reciprocally upon the causer.

Chapter 7 followed the model of Duffley's 1992 and 2020 studies to contrast the three ways of expressing causation in order to show how each of the three forms represents the general notion of causation. By carefully analysing minimal triads involving the same triliteral root, this chapter revealed the implausibility of assigning the same meaning of causation to the three forms.

Major findings

We hope to have shown that cross-linguistically causativity is a vast phenomenon, and that focussing on one single aspect is inadequate. Hallman and Ford's studies focussed on the syntactic aspect, dealing with the three verb forms out of context, thereby preventing them from getting a picture of the full potential of the forms under study. Our corpus investigation allowed us to observe that:

- Form II verbs (gemination) are not all causatives. Causation is not the potential meaning of gemination, but rather just one sense that can be conveyed by geminated verbs. Causation is more present in Classical Arabic than in Modern Standard Arabic and this is due to the nature of the CA text in which Allah is represented as being the ultimate cause of the way things are disposed in his creation. The message conveyed by geminated verbs changes diachronically; some Form II verbs expressing causation in Classical Arabic express intensification and repetition in Modern Standard Arabic. Consequently, gemination (Form II) is not a mere causative morpheme either in CA or in MSA:

this morphological device can generate many other actual meanings such as intensification, repetition, rectification, and opposition.

- Form IV is not a causative stem either. Form IV verbs convey the idea of movement towards a goal or a result more than causativization. Most of the transitive Form IV verbs studied in this research involved the notion of induced movement leading the direct object's referent into a new state. The inducing of the movement in the object obviously leads itself to being construed as causation. The 8 different senses adduced by Glanville were all shown to involve the idea of movement directed towards a goal or result.
- The potential meaning of ablaut is not causation either. Ablauted verbs express actionalization rather than causation. A transitive action defined by relation to a state such as sadness can naturally be construed as an action that put the patient into that state and so as coming under the general notion of causation.
- Forms V, VI, and VII are not anticausative on the level of their potential meaning. Form VII expresses the idea of reflexivization, as the /n/ affix nullifies the external orientation of the action denoted by Form I verbs, so that the subject itself is understood to undergo the action. Consequently, there is a fusion of the initiator of the action and the patient with Form VII verbs. Form V conveys the idea of retrospectiveness, as its potential meaning involves viewing the action from the point of view of the entity on the resultative receiving-end of it. Combined with reflexivization, this construes the subject as both acting and affected by their own action. In combination with gemination, the subject is construed as being responsible for the fact of undergoing the action, which corresponds to a sort of boomerang causation in which the subject brings misfortune upon themselves. Finally Form VI verbs evoke the notion of reciprocity manifesting the idea that the person who puts themselves in relation with the other entity also puts themselves on the receiving end of the action. They are not just an agent, but a patient as well, so that the potential meaning of Form VI can be characterized as that of a reciprocal resultative passive.
- Duffley's (2020) model for studying language has been shown appropriate for investigating causation in Arabic, as an approach that does not dissociate

linguistic meaning and linguistic form has been demonstrated to be able to account for both the cases where the forms under study here express causation or anti-causation and for the cases where the very same forms do not express these notions.

Further areas of research

The main goal of this thesis has been to study the causative alternation in Arabic with ablaut, Form II and Form IV and to investigate the anticausative alternation with Form V, Form VI and Form VII from a semantic point of view, relying on the principles proposed by the psychomecanics of language. The limited scope of this study did not allow us to study the semantic meaning of all Arabic verb forms. Further cross-linguistic research is necessary to determine whether what is true of Arabic is true of other related languages and thus to contribute to a general theory of the kind of meaning that verb and verb-like forms are capable of expressing in human language.

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