The syntactic, semantic and phonological Generation

of the passivization structures in Standard Arabic[*]

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Introduction

Before explaining the syntactic, semantic and phonological Aspects of Arabic passivization, I would draw the theoretical framework by which the Arabic passivization structures will be analyzed.

The structure of the Arabic sentence consists of three constituents. The first essential constituent is called Musnad (M), i.e., M-Predicate of the sentence. The second essential constituent is called Musnad ?ilayhi (MI), i.e., MI-subject or topic. The third constituent is called Fadlah (F) i.e., adjunct or constituents which are neither M nor MI. The relation which holds among these structural constituents is called ?isnād (IS) i.e., configurational predication. The IS-node is dominated by the highest Kalām-node (K) or sentence. The analysis will be based also on the three case markers of Arabic i.e., (Nom)inative, (Acc)usative, and (Gen)itave.

I shall describe the underlying structure of the Arabic passivization by using the five case roles proposed by Cook (1979) in the matrix model, i.e., (A)gent, (E)xperiencer, (B)enefactive, (L)ocative, and (O)bject. In addition, the analysis will be based on the bidirectional system of derivation proposed by Chafe (1970) and adopted by Cook (1979). The bidirectional system of derivation consists of four semantic units : Inchoative, Resultative, Causative, and Decausative derivations.

Finally, the theoretical framework will be based on the autosegmental phonology proposed by Brame (1970) and Halle (1973), and developed by McCarthy (1979). This means, by several phonological rules developed in autosegmental phonology, the Arabic root undergoes a complex set of morphophonemic changes generating different structures of passivization.

1. The Syntactic and Semantic Aspects of Arabic Passivization

The basic procedures of transformation from an active structure to

a passive structure include the following:

(1) a. The MI(NP-subject) must be deleted entirely from the active structure leaving no trace behind.

$$[MI(NP\text{-}subj) \longrightarrow \emptyset]$$

b. The F(NP-object) must move from its position to the empty MI(NP-subject) and function syntactically exactly as if it were an MI(NP-subject).

$$[MI(NP\text{-}obj) \ldots \ldots \ldots \ldots \ldots \ldots .F(t\,)]$$

c. The MI(NP-object) will be assigned a new case marker [+Nom] by the passive verb.

$$[M(V) \ldots \ldots [+Nom \quad +0] \ldots \ldots \ldots \ldots F(t\,)]$$
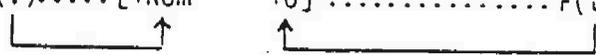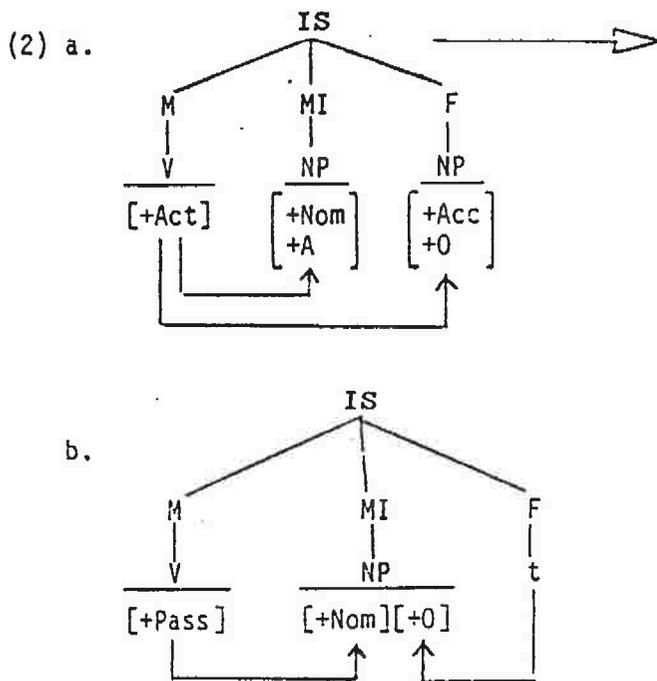
d. The MI(NP-object) will carry with it the case role as an object which it inherited from the active form.

e. The active pattern of the M(verb) must be changed phonologically to a passive pattern. Here the phonological change depends on the type of verb, i.e., perfective, imperfective, verbal noun (active participle).

$$M(V) \longrightarrow \text{by a phonological rule} \longrightarrow M(V)$$
$$[+Act] \qquad\qquad\qquad\qquad\qquad\qquad [+Pass]$$

The most important governing principle of passive is that the M-passive must assign the new MI(subject position) on its right a nominative case and this MI(subject position) will be governed properly, but the M-passive will not assign a case role of object, becuase semantically, the MI(NP-subject) inherits its object case role from its active structure (i.e., from F(NP-object). That is why Ibn ya^{c}īš called the new MI(subject) in the passive structure ?al-maf^{c}ūlu l- laδī lam yusamma fā^{c}ilu-hu[1] (i.e., the object whose subject is not mentioned).

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This means that the structure of passivization can be viewed within our general framework as follows:

(2) a.

```
                    IS              _____⟹
                  /  |  \
                 M   MI   F
                 |   |    |
                 V   NP   NP
              [+Act] ┌+Nom┐ ┌+Acc┐
                     │+A  │ │+0  │
                     └────┘ └────┘
                       ↑      ↑
                  └────┘      │
              └──────────────┘
```

b.

```
                    IS
                  /  |  \
                 M   MI   F
                 |   |    |
                 V   NP   t
              [+Pass] [+Nom][+0]  |
                 |       ↑    ↑    |
                 └───────┘    └────┘
```

The passive verb is represented under the category M. The subject position (i.e., NP-object) is represented under the category MI. The constituent which is moved from the passive is represented under the category F(t). The main idea here is that the NP-object which is moved to the subject position must behave syntactically in the same way as the deleted NP-subject, i.e., it must be governed by M(V) and yield to its conditions and constraints.

This means that the governing category M(V) must govern the MI(NP) properly, regardless of the nature of MI, which might be NP-subject or NP-object. In the case of a passive, the NP-subject becomes ∅ and the NP-object will take the subject position and be assigned a case and it will be governed by agreement. The M and MI will result in a passive structure.

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Arab grammarians, however, were aware of the syntactic and semantic changes which might take place in the passive structure. Ibn ya^{c}īš, for example, went further to include under the regular passive in the (M-MI-F) structure what is known in modern linguistics as the Inchoative structure. Ibn ya^{c}īš argued that the M(V) might be either a Passive or Inchoative which must govern the constituent MI which is in this case NP-object.

Putting what Ibn ya^{c}īš stated into our framework, we can see that the NP-subject of the inchoative verb is not the agent who performed the action, but rather an object undergoing an action caused by a deleted agent. And since the agent is deleted, the object must move to its position. Let us consider Ibn ya^{c}is's examples to illustrate the issue.[2]
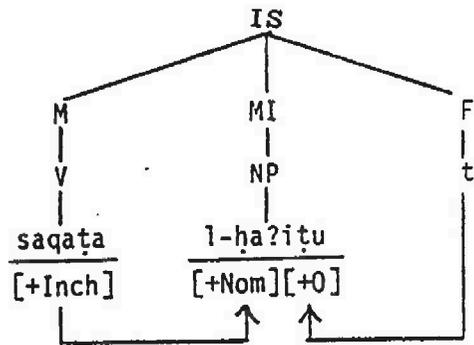
(3) a. mā̱ta zaydun
      died Zayd
      Zayd died.

    b.
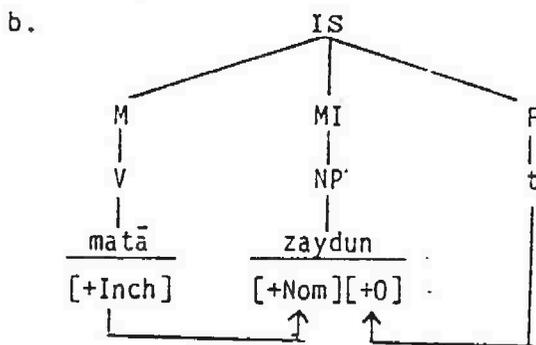
    c. CAUSE (X,CA(BE MWT(Zayd))) $\longrightarrow$ CA(BE MWT(Zayd))

(4) a. saqata   l - ḥā̱ʔiṭu
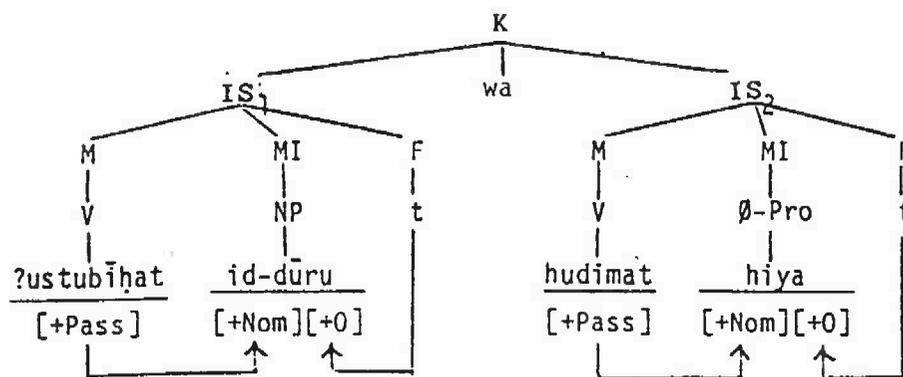   fell down the wall
      The wall fell down

b.

c. CAUSE (X,CA(BESQṬ(ḥā?iṭ))) ⟶ CA(BE SQṬ (ḥā?iṭ))

The main point here is to show that the F(NP-object) in the inchoative structure is exactly identical to the F(NP-object) in the passive structure. Neither of them is the real agent of the action, but rather both are objects. Since they must move to the MI(subject position), they must be governed by the M(V), and they will be assigned a case marker and they will be governed by agreement. Thus we conclude that the NP-object moves from its F(position) in the active form to the MI(subject position) in the inchoative or passive form, carrying with it its case role of object and receiving a new case marker of nominative.

The M category in Arabic passive might be adjacent to a pronominal empty category (i.e., ∅) in the subject position; i.e., the M might govern ∅-Pro (hidden pronoun) which refers to a hidden pronoun. This can be seen in (5a) and (5b).

(5) a.
?ustubīhat	id - dūru	wa	huddimat	∅-Pro
were pillaged	the houses	and	destroyed	they

The houses were pillaged and destroyed.

b.

```
                              K
                              |
              IS₁            wa            IS₂
          ┌────┼────┐                ┌────┼────┐
          M    MI   F                M    MI   F
          |    |    |                |    |    |
          V    NP   t                V   Ø-Pro t
          |    |                     |    |
      ?ustubihat id-duru         hudimat hiya
        [+Pass] [+Nom][+O]        [+Pass] [+Nom][+O]
```

As seen in (5b), the MI(NP-subject) in IS₁ is coreferential with the MI(Ø-Pro subject) in IS₂.

In short, the most important issue in Arabic active-passive structure
is that the active verb assigns its governee a case role, and case marker,
while the passive verb has the ability to assign its governee a case
marker of nominative and agreement because the NP-governee will inherit
its case role from the active form. This issue, however, will be dealt
with more exhaustively when we investigate the structure of transitives
and intransitives, which is directly relevant to the operation of passive.

1.1. Transitive and Intransitive Process

Transitivity represents an area of syntax and semantics that
contributes greatly in understanding the operation of passivization.
While the concept that transitive structures are somehow distinct from
intransitive structures is a common phenomenon in language, their treat-
ment in specific cases varies. Transitivity differs from language to
language in its surface form and syntactic procedures, but it is somehow
identical in its logical and semantic representations in all languages.

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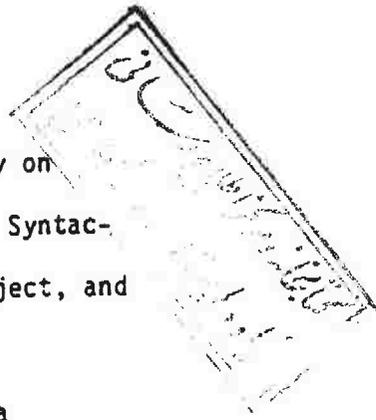
The traditional definition of transitivity is based entirely on syntax with little regard for semantic and logical explanation. Syntactically speaking, a transitive structure is one that takes an object, and an intransitive structure is one which does not take any object. According to Arab grammarians, a transitive structure or rather a transitive action is an action that is transmitted from an actor to something acted upon. Semantically, however, Ibn ya^{c}i$\check{s}$ classified the transitive verbs under two categories: the first category is called ?al-^{c}ilaj which involves the use of body limbs and action, e.g., <u>qatala</u> 'killed,' <u>daraba</u> 'hit.' The second category is called <u>non-?al-^{c}ilaj</u> which involves the verbs that express emotion, thought, and communication, e.g., <u>hazina</u> 'got sad,' <u>fahima</u> 'understood,' ðakara 'mentioned.'[3]

Arabic verbs can be classified into three categories, namely, transitive, intransitive, and transitive/intransitive (i.e., causative/ inchoative, respectively). This kind of category can be analyzed from a new semantic perspective. Cook (1980) analyzed transitivity within the framework of case relations, bidirectional relations, and generative relations. According to these relations, the verb sequence can be classified according to the notions one-place, two-place, three-place, and four-place predicate as shown in (1).

(1) a.

$$[V_1 \ldots \ldots NP]$$

b.

$$[V_2 \ldots NP \ldots NP]$$

c.

$$[V_3 \ldots NP \ldots NP \ldots NP]$$

d.

$$[V_4 \ldots NP \ldots NP \ldots NP \ldots NP]$$
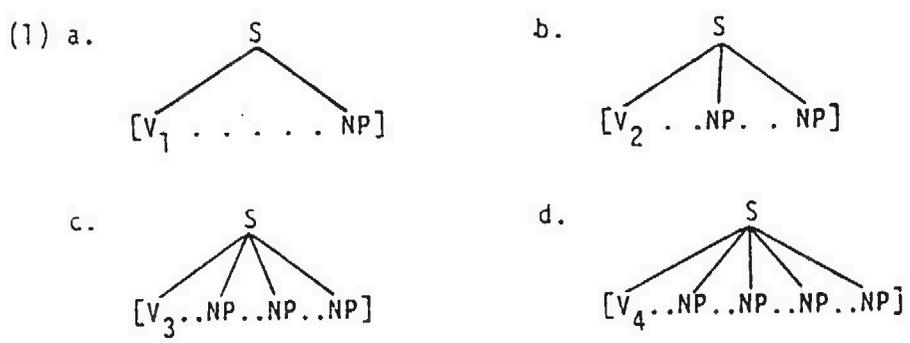
Transitive verbs are those verbs which can fall under the classifications two-, three-, or four-place predicate. (To account for the Arabic structure, I have extended Cook's model to handle four-place predicates, which might occur in Arabic as shown in (1d).)

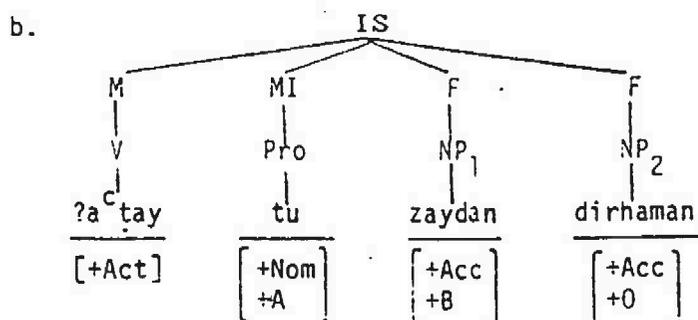Transitive verbs in Arabic are those verbs which take one direct object or two objects or sometimes three objects. Let us consider the following examples.
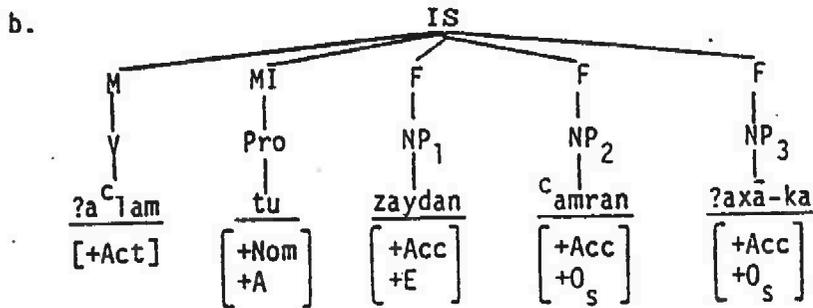
(2) a. $\underline{\text{daraba}}$ $\underline{\text{zaydun}}$ $\underline{{}^c\text{amran}}$
        hit   Zayd ^{c}Amr
        Zayd hit ^{c}Amr.
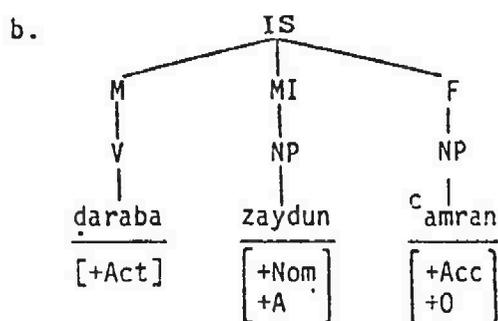
    b.
```
                        IS
            ┌───────────┼───────────┐
            M           MI          F
            │           │           │
            V           NP          NP
            │           │           │
         daraba       zaydun      ᶜamran
         ──────       ──────      ──────
         [+Act]       ⎡+Nom⎤      ⎡+Acc⎤
                      ⎣+A  ⎦      ⎣+0  ⎦
```

(3) a. $\underline{\text{?a}^c\text{taytu}}$ $\underline{\text{zaydan}}$ $\underline{\text{dirhaman}}$
        gave   I   Zayd   dirham
        I gave Zayd a dirham.

    b.
```
                             IS
        ┌──────────┬─────────┴────────┬──────────┐
        M          MI                 F          F
        │          │                  │          │
        V          Pro               NP₁        NP₂
        │          │                  │          │
      ?aᶜtay       tu               zaydan     dirhaman
      ──────       ──               ──────     ────────
      [+Act]      ⎡+Nom⎤           ⎡+Acc⎤     ⎡+Acc⎤
                  ⎣+A  ⎦           ⎣+B  ⎦     ⎣+0  ⎦
```

(4) a. $\underline{\text{?a}^c\text{lamtu}}$ $\underline{\text{zaydan}}$ $\underline{{}^c\text{amran}}$ $\underline{\text{?axā-ka}}$
        told I   Zayd ^{c}Amr   brother your
        I told Zayd that ^{c}Amr is your brother.

b.

```
                              IS
        ┌──────────┬──────────┼──────────┬──────────┐
        M          MĪ         F          F          F
        │          │          │          │          │
        V          Pro        NP₁        NP₂        NP₃
        │          │          │          │          │
      ?aᶜlam       tu       zaydan    ᶜamran     ?axā-ka
      [+Act]     ⎡+Nom⎤     ⎡+Acc⎤     ⎡+Acc⎤     ⎡+Acc⎤
                 ⎣+A  ⎦     ⎣+E  ⎦     ⎣+0ₛ ⎦     ⎣+0ₛ ⎦
```
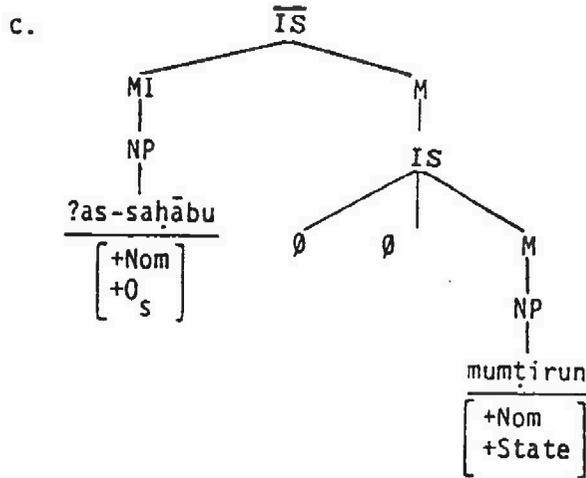
In the above examples, (2b) requires one direct object, (3b) requires
two objects, one direct and the other indirect, and (4b) requires three
objects, one direct and the other two indirect. From a semantic
perspective, the indirect objects in (4b) are considered to form an
embedded nominal existential structure. From a syntactic perspective,
Arab grammarians considered them as indirect objects which are governed
by the central governor, i.e., M(V). Arab grammarians divided the
transitive objects into two categories: (a) objects which can form a
grammatical structure by themselves and (b) objects which cannot form a
grammatical structure by themselves.

(a) Objects which can form a grammatical structure by themselves
can result in an existential sentence. The only change which takes
place here is that the two objects must drop their accusative case
marker and keep their case role. This process can be seen in the following
examples:

(5) a. $\overset{x}{\delta}$anantu   s - sahāba   mumṭiran
        ‾‾‾‾‾‾‾‾‾   ‾‾‾‾‾‾‾‾‾   ‾‾‾‾‾‾‾
        thought I   the cloud   raining
        I thought the cloud is raining.

    b. ?as - sahābu   mumṭirun
        ‾‾‾‾‾‾‾‾‾‾‾‾   ‾‾‾‾‾‾‾
        the cloud   raining
        The cloud is raining.

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c.

```
                        ̄IS
                   ┌─────┴─────┐
                   MI          M
                   │           │
                   NP          IS
                   │      ┌─────┼─────┐
                ?as-sahābu  ∅    ∅    M
                ─────────               │
                ⎡+Nom⎤                 NP
                ⎣+0_s⎦                  │
                                     mumtirun
                                     ────────
                                     ⎡+Nom  ⎤
                                     ⎣+State⎦
```

We notice that (5c) is a grammatical existential structure formed from the two objects in (5a). The changes which take place here are:

(6) $NP_s[+Acc] \longrightarrow NP_s[+Nom]$

(b) Objects which cannot form a grammatical structure by themselves are blocked by the selectional rules of transformational grammar. This can be seen from the following examples:

(7) a. ?a^c̣taytu   mayyan   jā?izatan
         ─────────   ──────   ─────────
         gave I   mayy   present

I gave Mayy a present.

b.* mayyun   jā?i·zatun
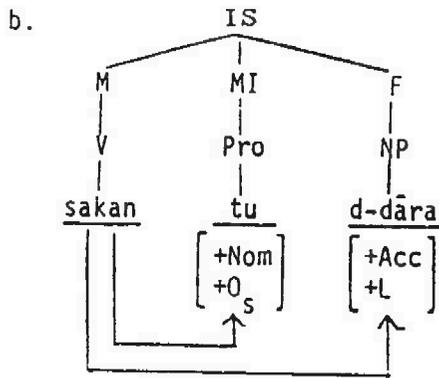   ──────   ─────────
     mayy   present

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We notice that the F_1(NP-benefactive) (Mayy) and the F_2(NP-object) (jā?izatan) cannot form an existential structure, because there is no logical and semantic connection which can relate the two NP$_s$. In fact, the distinction between these two categories of objects is extremely important to the passive construction, as we shall see in the next section.

Intransitive structures in Arabic are those which cannot take an object directly. However, in spite of this syntactic definition, some intransitive verbs have essentially transitive meanings. In order for these intransitive verbs to be transitive, they need to delete the helping prepositional particles; and in turn, the object of the preposition will serve as a transitive object. This process can be seen in the following examples:

(8) a. <u>sakan-tu</u> <u>fī</u> <u>d - dāri</u>
   <u>lived I</u>   <u>in</u> <u>the house</u>
       I lived in the house.

b.
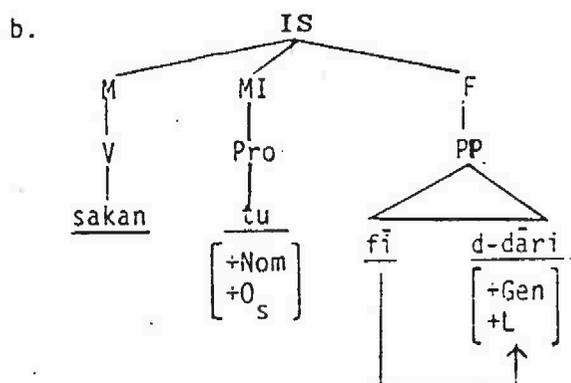
(9) a. <u>sakan-tu</u> <u>d - dāra</u>
       <u>lived I</u>   <u>the house</u>
       I lived (in) the house.

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b.

```
                        IS
                        |
        M               MI              F
        |               |               |
        V               Pro             NP
        |               |               |
      sakan             tu           d-dāra
                    ⎡ +Nom ⎤        ⎡ +Acc ⎤
                    ⎣ +O_S ⎦        ⎣ +L   ⎦
```

We notice that the F(PP-NP) in (8b) is governed by the prepositional operator, but in (9b) it is governed by the verb operator. This kind of transitivity of the intransitive verbs is called in the Arabic theory ?an-naṣbu bi-naz^{c}i l-xāfiḍ, i.e., the accusative by virtue of the removal of the genitive governor. The most important operation of transitivity is that which occurs in the category of causativity and inchoativity, i.e., verbs which can be either transitive or intransitive.
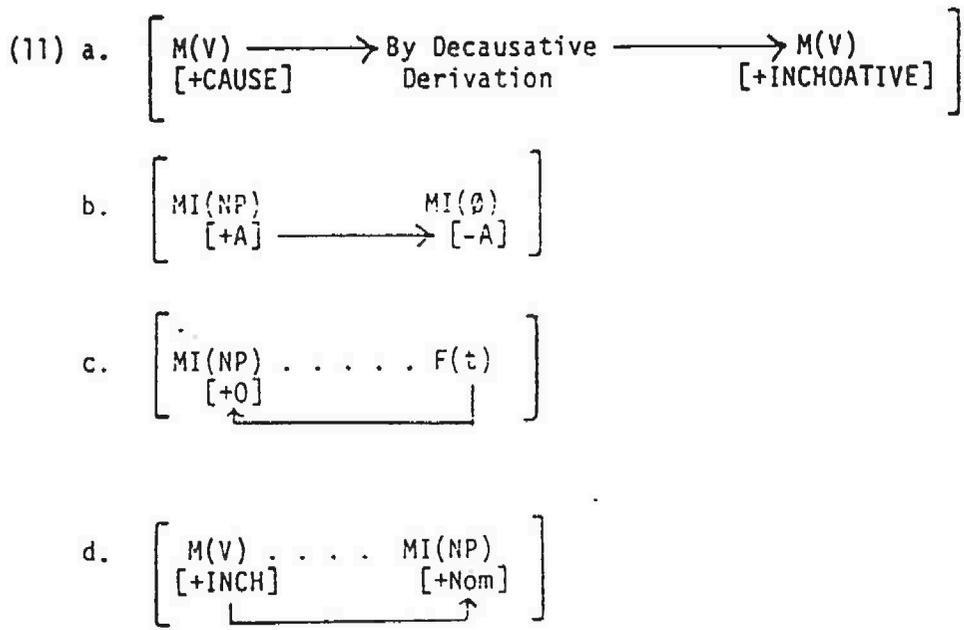
Although Arab grammarians categorized transitive and intransitive verbs according to their sequence requirements, the distinctions between these two types of verbs are not always clear-cut. Some verbs (with some morphological changes) can occur either with or wit. out an object, and thus can be classified as intransitive and transitive. This means that such verbs have two logical representations which function within two semantic domains. The Arabic root KSR, for example, can have two semantic forms in its structure. This can be seen in the following examples:

(10) a. kasara   zaydun   il-ka?sa
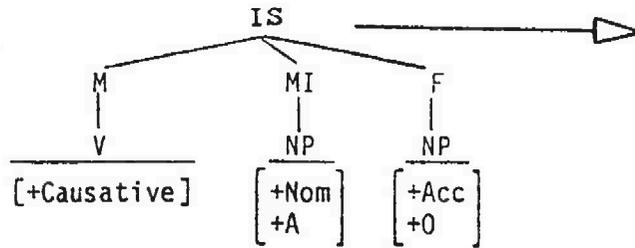   broke   zayd   the glass
         Zayd broke the glass.

14
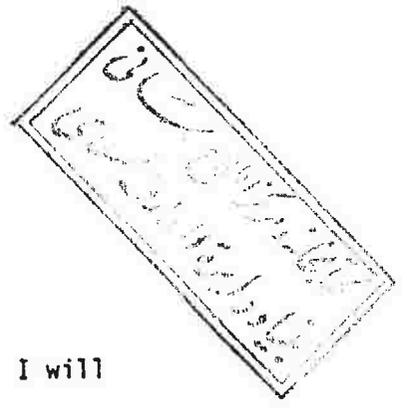
b. <u>?inkasara</u>   <u>l-ka?su</u>
      broke   the glass

The glass broke.

I shall propose here that a structure such as (10b) is passive. I will
call it "inchoative passive," which involves two operations: one is
semantic, the other syntactic. This kind of inchoative passive does not
involve a phonological process. The argument for such a proposal is
that these structures express the absence of the subject. The syntactic
subject, i.e., <u>?al-ka?su</u>, does not actually perform the action of the
verb because it is not assigned [÷Agent], i.e., it is not the agent of
the action from the point of view of case relations. I shall propose
also that the transformational process from active form to passive form
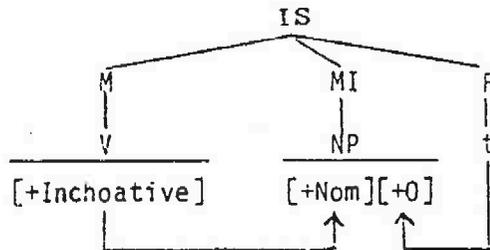involves the following operations.

(11) a. $$\left[\begin{matrix} M(V) \\ [+CAUSE] \end{matrix} \longrightarrow \begin{matrix} \text{By Decausative} \\ \text{Derivation} \end{matrix} \longrightarrow \begin{matrix} M(V) \\ [+INCHOATIVE] \end{matrix} \right]$$

b. $$\left[\begin{matrix} MI(NP) \\ [+A] \end{matrix} \quad \begin{matrix} MI(\emptyset) \\ \longrightarrow [-A] \end{matrix} \right]$$

c. $$\left[\begin{matrix} MI(NP) & \ldots \ldots & F(t) \\ [+O] & & \end{matrix} \right]$$

d. $$\left[\begin{matrix} M(V) & \ldots & MI(NP) \\ [+INCH] & & [+Nom] \end{matrix} \right]$$

The underlying structures of causative and inchoative active-passive of
(10a) and (10b) can be seen in (12a) and (12b).

15

(12) a.
```
                    IS  ————————————▷
          ┌─────────┼─────────┐
          M         MI        F
          │         │         │
          V         NP        NP
       ┌──────┐  ┌──────┐  ┌──────┐
       [+Causative]  [+Nom]    [+Acc]
                     [+A  ]    [+0  ]
```

   b.
```
                    IS
          ┌─────────┼─────────┐
          M         MI        F
          │         │         │
          V         NP        t
       ┌──────┐  ┌──────────┐
       [+Inchoative]  [+Nom][+0]
          │         ↑     ↑     │
          └─────────┘     └─────┘
```

As we have seen, the only operations which take place here are syntactic
and semantic but not phonological. In (12b), the M(V) becomes an
inchoative passive which assigns the MI(NP-subject) a case marker of
nominative, but not a case role, because the new NP-subject inherited
its case role of object from its original position which is now a trace.

I shall propose also that the inchoative passive in turn can cause
another passive by applying the bidirectional system. I will call it
the stative passive. Once again, the stative passive involves syntactic
and semantic operations but not phonological ones. This can be seen
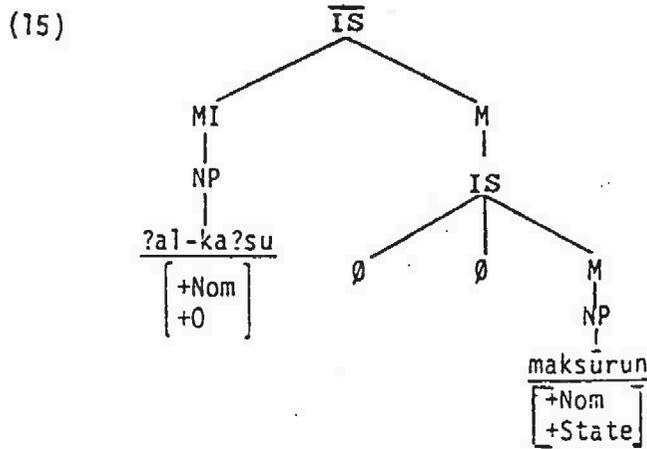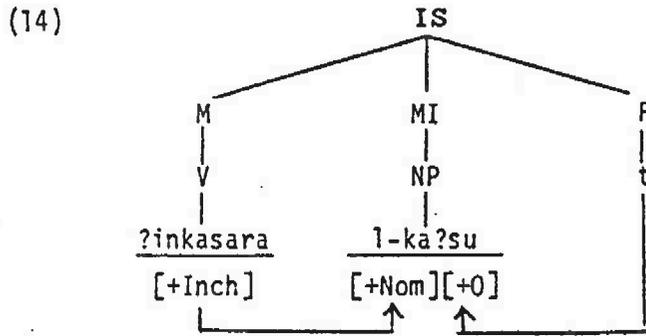from the following examples:

(13) a. <u>?inkasara</u> <u>1-ka?su</u>
              broke   the glass
         The glass broke.

     b. <u>?al-ka?su</u> <u>maksūrun</u>
            the glass   broken
         The glass is broken.

Once again, the structure in (13b) expresses the absence of the NP-agent. The syntactic subject (i.e., ?al-ka?su) does not actually perform the action of the verb. I shall assume here that the transformational process from the inchoative passive of (13a) to the stative passive of (13b) involved the following operations:

(14)

```
                        IS
        ┌───────────────┼───────────────┐
        M               MI              F
        │               │               │
        V               NP              t
        │               │
     ?inkasara        1-ka?su
      [+Inch]       [+Nom][+0]
        └──────────────↑    ↑───────────────┘
```

(15)

```
                    ĪS
        ┌───────────────────┐
        MI                  M
        │                   │
        NP                  IS
        │           ┌───────┼───────┐
     ?al-ka?su      Ø       Ø       M
      ⎡+Nom⎤                        │
      ⎣+0  ⎦                        NP
                                    │
                                 maksurun
                                 ⎡+Nom  ⎤
                                 ⎣+State⎦
```

The stative passive is a structure which is related to a more general semantic system which can be explained adequately within the case grammar framework of Cook (1980).

Given a set of related state, process, and action forms from the same morphological root, we can analyze such structures from the point of view of a bidirectional system. According to Cook's semantic system, the lexical decomposition hypothesis suggests that the stative verb is the basic form, that the process form is composed of state + inchoative,
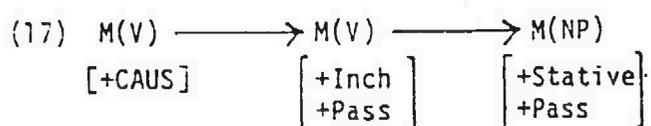
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represented by the predicate COME ABOUT (CA), and that the action verb
is composed of the process verb + causative, represented by the
predicate CAUSE. The logical structures for the state process and
action forms of the root XWF, for example, can be seen in the
following examples:

(16) a. xawwafa   zaydun   taʔabbataš̌arran
         ───────── ──────   ─────────────────
         frightened zayd   taʔabbataš̌arran

         Zayd frightened Taʔabbataš̌arran.

     b. xāfa   taʔabbataš̌arran
         ────   ─────────────────
         feared taʔabbataš̌arran

         Taʔabbataš̌arran feared (Zayd).

     c. taʔabbataš̌arran   xāʔifun
         ─────────────────   ───────
         taʔabbataš̌arran   afraid

         Taʔabbataš̌arran is afraid.

The changes of the predicate from (16a) to (16b) and (16c) can be seen
in (17).

$$(17) \quad M(V) \longrightarrow M(V) \longrightarrow M(NP)$$

$$[+CAUS] \qquad \begin{bmatrix} +Inch \\ +Pass \end{bmatrix} \qquad \begin{bmatrix} +Stative \\ +Pass \end{bmatrix}$$

According to Cook, the predicate CAUSE is a two-place predicate that
relates an event to an event or an agent to an event as we have seen
in (16a). COME ABOUT is a one-place predicate, as in (16b). The STATE
predicate is also a one-place predicate as in (16c).

In fact, not all Arabic verbs are analyzed so neatly within such a
semantic framework because some verbs have what Cook called "lexical"

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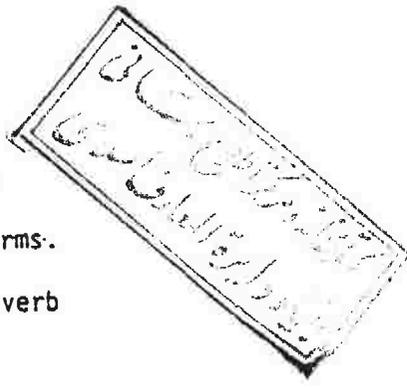
and "semantic gaps." The Arabic predicate qara?a 'read' lacks the
inchoative or process form, but it has the causative and stative forms.
The lexicon of Arabic, however, provides sets of lexically related verb
forms. These forms are semantically realted by the bidirectional
derivations, i.e., inchoative, resultative, causative, and decausative.
Lexical gaps of some transitive/intransitive forms are filled by para-
phrases or by new forms. Semantic gaps cannot be filled by a para-
phrase. The following chart is a list of related verbs in Arabic and
English which can show some of these lexical and semantic gaps in the
stative, inchoative, and causative.

As seen in the chart following, lexical derivation is an important
linguistic process because it shows different underlying semantic
realities which have different logical structures. Thus the transitive/
intransitive category can be perceived as state, process, and action
verbs within the same domain. These verbs are often morphologically
and semantically related to each other. The scope of four semantic
derivational units, i.e., inchoative, resultative, causative, and
decausative can describe these relations.

In short, Arabic expresses transitive and intransitive structures,
while it also expressed transitive/intransitive structures. Transitive
structures can have one, two, or three objects; intransitive structures,
on the other hand, lack any object. Transitive/intransitive structures
are semantically related by states, process, and action. I propose
that statives and inchoatives within such a framework are passive
structures which involve syntax and semantics but not phonology. The

	(i) BE-State (adjective)		(ii) BECOME-Process (intransitive)		(iii) CAUSE-Action (transitive)	
	English	Arabic	English	Arabic	English	Arabic
(1)	OPEN	Maftūḥ	OPEN	ʔinfataḥa	OPEN	fataḥa
(2)	BROKEN	maksūr	BREAK	ʔinkasara	Break	kasara
(3)	∅	mutaharrik	move	taharraka	move	harraka
(4)	deaf	ʔaṣamm	∅	∅	deafened	ʔaṣamma
(5)	dead	mayyit	die	māta	kill	amāta
(6)	healthy	muᶜāfā	∅	taᶜāfā	∅	ᶜāfā
(7)	washed	maġsūl	wash	ʔiġtasala	wash	ġasala
(8)	rolled	mutadaḥrij	roll	tadaḥraja	roll	daḥraja
(9)	∅	munṣafiq	slam	ʔinṣafaqa	slam	ṣafaqa
(10)	protruded	mundaliᶜ	protrude	dalaᶜa	protruded	dalaᶜa
(11)	ignited	mudāʔa	ignited	ʔaḍāʔa	ignited	ʔaḍāʔa
(12)	lowered	hābiṭ	∅	habaṭa	lowered	habaṭa
(13)	eclipsed	kasīf	eclipsed	kasafa	eclipsed	kasafa
(14)	thin	naḥīf	thin	naḥufa	thin	ʔanhafa
(15)	led	munsariḥ	∅	ʔinsaraḥa	led	saraḥa
(16)	crowded	muzdahim	crowd	ʔizdaḥama	crowd	zaḥama
(17)	∅	∅	sneeze	ᶜaṭasa	∅	ᶜattasa
(18)	read	maqrūʔ	read	∅	read	qaraʔa
(19)	blue	ʔazraq	∅	ʔizraqqa	∅	zarraqa

(continued)

|	BE-State (adjective)		BECOME-Process (Intransitive)		CAUSE-Action (transitive)	
	English	Arabic	English	Arabic	English	Arabic
(20)	red	?aḥmar	redden	?iḥmarra	redden	ḥammara
(21)	white	?abyaḍ	whiten	?ibyaḍḍa	whiten	bayyaḍa
(22)	black	?aswad	blacken	?iswadda	blacken	sawwada
(23)	green	?axḍar	green	?ixḍarra	green	xaḍḍara
(24)	yellow	?aṣfar	yellow	?iṣfarra	yellow	ṣaffara
(25)	brown	bunniyy	brown	∅	brown	∅
(26)	gray	ramādiyy	gray	∅	gray	∅
(27)	raised	murtafiᶜ	∅	?irtafaᶜa	raise	rafaᶜa
(28)	afraid	xā?if	feared	xāfa	frightened	xawwafa
(29)	happy	farīḥ	∅	fariḥa	∅	farraḥa
(30)	∅	jālis	sat	jalasa	∅	jālasa
(31)	∅	māšin	walk	mašā	walk	maššā
(32)	∅	ḥāḍir "here"	∅	ḥaḍara "C,A"	∅	?istaḥḍara "brought"

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passive which involves syntax, semantics, and phonology is that of transitive <u>and</u> intransitive structures. This will be the topic of discussion in the next section.

1.1.1. <u>The Passivization of Transitive Structures</u>.

The passivization of transitive structures varies, depending on the number of objects which the transitive verb might require. Thus the passivization of a one-object transitive is different from the passivization of a two- or three-object transitive. In the case of a one-object transitive structure, the F(NP-object) will be moved to the MI(subject position) carrying with it its case role and leaving a trace behind. Since the NP-subject becomes Ø leaving nothing behind, the passive verb will govern the moved NP-object and assign it a case marker of nominative. Let us consider the following examples:

(1) a. <u>qatala</u> <u>dīkujjinni</u> <u>habībata - hu</u>
    killed .dīkujjinni lover   his
    Dīkujjinni killed his lover.

   b. <u>qutilat</u> <u>habībatu - hu</u>
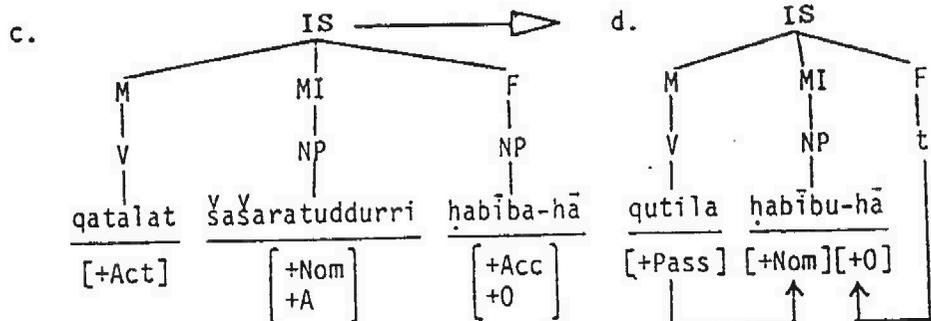   was killed lover his
    His lover was killed.

c.   IS ⟶▷   d.   IS

```
c.                IS  ──────▷        d.              IS
         M        MI         F              M        MI          F
         |        |          |              |         \          |
         V        NP         NP             V         NP         t
         |        |          |              |         |
      qatala   dīkujjinni  habībata-hu   qutilat  habībatu-hu
      [+Act]    ⎡+Nom⎤      ⎡+Acc⎤       [+Pass]  [+Nom][+O]
                ⎣+A  ⎦      ⎣+O  ⎦
```

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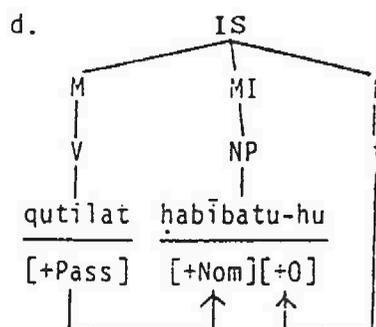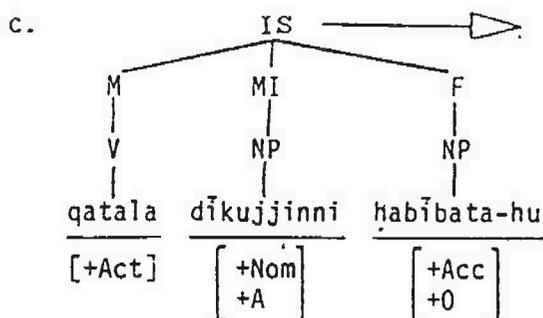
(2) a. <u>qatalat</u>   <u>šašaratuddurri</u>   <u>habība - hā</u>
      killed   šašaratuddurri   lover   her

      šašaratuddurri killed her lover.

   b.   <u>qutila</u>   <u>habību - hā</u>   <u>t</u>
      was killed   lover   her

      Her lover was killed.

c.

We notice that in (1a) and (2a) the active verb agrees with its governee in number, gender, and person. But when the NP-object is moved to the MI(position) adjacent to the passive verb as in (1b) and (2b), it must agree with the passive verb. In addition, the passive verb assigns the moved NP-object a nominative case marker.

In fact, all transitive verbs of one object fall within the transformational process of (1c) and (2c). As far as the syntactic and semantic aspects are concerned, the most important process is that the NP-subject becomes ∅. The NP-object is moved from its F(position) to the deleted NP-subject, leaving a trace behind from which it inherits its case role of object. The passive verb will assign the MI(NP-object) a case marker of nominative.

Passivization in Arabic can operate on two object transitive structures, but there are certain constraints which must be met in order for a well-formed passive structure to be generated. As we have seen in the section on transitives and intransitives, some objects in the

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transitive structures are blocked by the semantic selectional rules from forming a valid existential sentence. In such objects, the passive operation can operate on either object and move it to the subject position. Let us consider the following examples:

(3) a. $\underline{?a^c\underline{t}aytu}$ $\underline{zaydan}$ $\underline{dirhaman}$
         gave I   zayd   dirham
      I gave Zayd a dirham.

b. $\underline{?u^ctiya}$ $\underline{zaydun}$ t $\underline{dirhaman}$
   was given   zayd   dirham
   Zayd was given a dirham.

c. $\underline{?u^ctiya}$ $\underline{dirhamun}$ $\underline{zaydan}$ t
   was given   dirham   zayd
   A dirham was given to Zayd.

The transformational operations which occur in (3a-c) can be seen in the following underlying structures (4 a) (4b), and (4c).

(4) a.

b.

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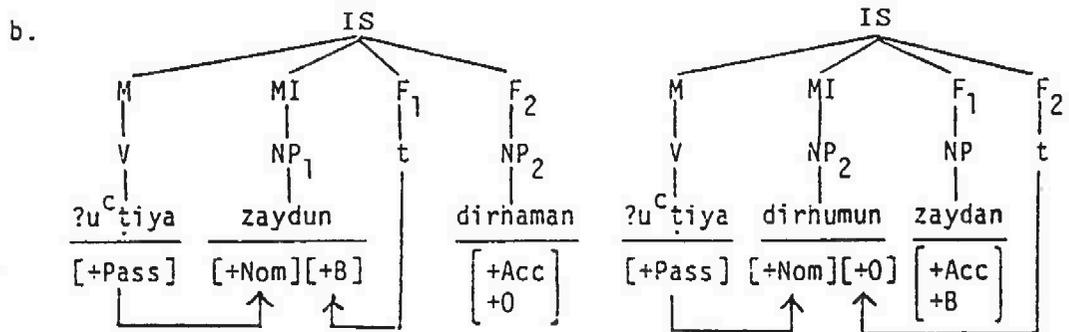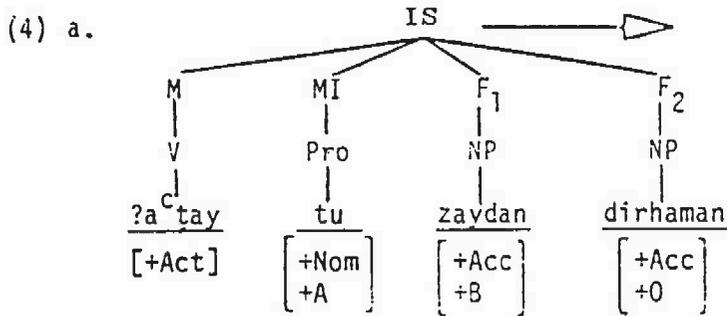
As seen in (4b) and (4c), either F_1(NP-B) or F_2(NP-object) can move to the MI(subject position) becuase they are blocked from forming a grammatical structure. This process, however, is different when the two objects can by themselves constitute a grammatical structure. Here the F_1(NP-object) which is adjacent to the MI(NP-subject) must move to the subject position in the passive structure. The justification for such a constraint is that the second F_2(NP-object) might be different categories such as PP, AdvP, existential sentence, or verbal structure. These categories when moving to the subject position will violate the electional semantic rules. Let us consider the following examples:

(5) a.

	F_1(NP)	F_2(AdvP)
x̣anan - tu	l - qitāia	ǧadan
thought I	the fighting	tomorrow

I thought the fighting was tomorrow.

b.

x̣unna	l - qitālu	ǧadan
was thought	the fighting	tomorrow

The fighting is thought to be tomorrow.

(6) a.

	F_1(NP)	F_2(PP)	
x̣anan-tu	zaydan	fī	l-bayti
thought I	zayd	at	home

I thought that Zayd was at home.

b.

x̣unna	zaydun	fī	l-bayti
was thought	zayd	at	home

Zayd was thought to be at home.

(7) a.

	F_1(NP)	F_2(verbal-S)	
x̣anan-tu	zaydan	qāma	∅-Pro
thought I	zayd	stood up	he

I thought that Zayd stood up.

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b.
$\overset{x}{\underset{\cdot}{o}}$unna	zaydun	qāma	Ø-Pro
was thought	zayd	stood up	he

Zayd was thought to stand up.

$$F_1(NP) \quad F_2(NP)$$

(8) a.
$\overset{x}{\underset{\cdot}{o}}$anan-tu	zaydan	qā?iman
thought I	zayd	standing up

I thought that Zayd was standing up.

b.
$\overset{x}{\underset{\cdot}{o}}$unna	zaydun	qā?iman
was thought	zayd	standing up

Zayd was thought to be standing up.

$$F_1(NP) \quad F_2(\text{existential-S})$$

(9) a.
$\overset{x}{\underset{\cdot}{o}}$anan-tu	zaydan	?abū - hu	qā?imun
thought I	zayd	father his	standing up

I thought that Zayd's father was standing up.

b.
$\overset{x}{\underset{\cdot}{o}}$unna	zaydun	?abū - hu	qā?imun
was thought	zayd	father his	standing up

Zayd's father was thought to be standing up.

The second F_2(NP-object) in the above examples is of different syntactic categories. In (5a), it is AdvP-Time; in (6a), it is PP-Location; in (7a), it is a verbal structure; in (8a), it is an NP-manner; and in (9a), it is a nominal existential structure. These categories can form a grammatical structure with the first F_1(NP-object). Since these categories are considered to be predicates in the grammatical structure, it will be impossible to move to the subject position under the operation of passive because they will violate the selectional rules. That is why the first F_1(NP-object) must move to the subject position in the passive. The general rule which can capture the constraints imposed

on the passivized transitive structures with two objects, regardless of
whether their objects can form a grammatical structure or not, can be
formalized in (10)

(10) X[is [...M(V).......MI(-).....Y.....Z]]X

In the domain of M-passive, either Y or Z can move to
MI-position if and only if Y and Z cannot form a grammatical
structure.

Y = NP
Z = NP, PP, AdvP, verbal-S, and existential-S.

The rule in (10) can capture the same phenomenon in three-object
transitive structures. Once again the restriction here is semantic.
The first F_1(object) must be moved to the MI(subject position) in the
case of passive. Thus rule (10) can apply in the following examples:

$$\overbrace{}^{\text{existential-S}}$$

(11) a. $\underline{?a^c\text{lam-tu}}$ $\underline{\text{zaydan}}$ $\underline{^c\text{amran}}$ $\underline{\text{qā?iman}}$
          told I   zayd ^{c}amr   standing up
          I told Zayd that ^{c}amr is standing up.

b. $\underline{?u^c\text{lima}}$ $\underline{\text{zaydun}}$ $\underline{^c\text{amran}}$ $\underline{\text{qā?iman}}$
    was told zayd ^{c}amr   standing up
    Zayd was told that ^{c}amr is standing up.

As we have seen, the second and the third NP-object in (11a) is an
existential structure from which we cannot move any constituent to
subject position.

However, one can look at these transitive structures whose F(NP-
objects) cannot move to MI(subject position) from the point of view of
embedding. The embedding structure is assumed to form an internal

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semantic and syntactic structure. So any extraction of one of its constituents from its structure will violate the semantic unity of the embedded structure. But when we move the first F_1(NP-object) to the MI(subject position), we are preposing and postposing a constituent within one internal structure. Thus, to passivize in Arabic is to limit the operation in one single clause which does not affect the other clause, i.e., it is a clause-bound operation.
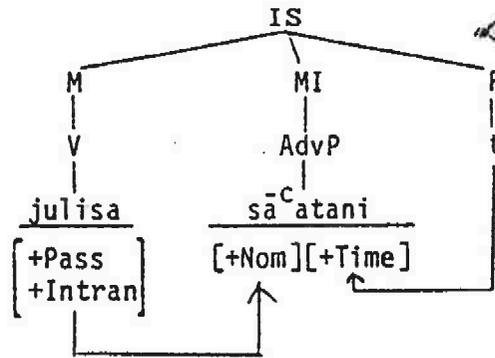
1.1.2. The Passivization of Intransitive Structures

Generally speaking, intransitive structures in Arabic cannot be passivized. There are, however, some intransitive structures which can be passivized when they meet certain conditions. The constraints imposed in the passivized intransitives, according to Ibn ya^{c}īš (d. 1250)[4], are that the syntactic categories which are in the subject position of MI must be PP, AdvP, or masdar 'gerund' (i.e., a type of VN). There are other constraints which the above categories must meet in order to be allowed to occur in MI(subject position) in the passive structures.

Ibn ^{c}aqīl (d. 1376)[5] stated the internal constraints of the categories which can occur in the subject position of the passive structure. The AdvP category must be inflected (i.e., it must show the case markers overtly), otherwise the passive structure will be ungrammatical. That is why (1) is grammatical, but (2) is not.

(1) a. <u>julisa</u> <u>sā^{c}atāni</u>
       was sat   two hours
       One sat for two hours.

b.

$$
\begin{array}{c}
\text{IS} \\
\overset{\displaystyle\diagup\;\;\mid\;\;\diagdown}{} \\
\text{M}\qquad\text{MI}\qquad\text{F} \\
\mid\qquad\mid\qquad\mid \\
\text{V}\qquad\text{AdvP}\qquad\text{t} \\
\mid\qquad\mid \\
\text{julisa}\qquad\text{sā}^{c}\text{atani} \\
\begin{bmatrix}+\text{Pass}\\+\text{Intran}\end{bmatrix}\quad[+\text{Nom}][+\text{Time}]
\end{array}
$$

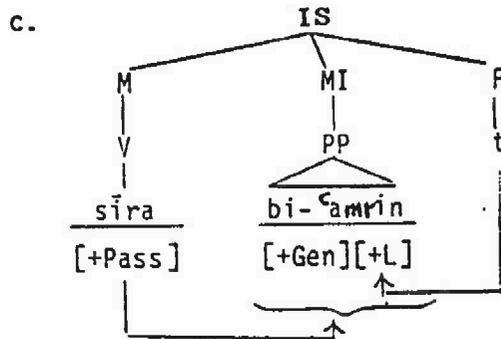(2)* julisa ^cindaka
      was sat near you

The constraints which are imposed on the PP and masdar categories are
the following:

(3) a. The object of a preposition must have the feature of
        [+definite].

    b. The governing preposition must be able to govern different
        categories and not be specialized in governing one
        particular category.

    c. The preposition must not convey the role of cause or
        purpose.

    d. As for the masdar, the only constraint which is imposed on
        it is that it must be conjugated, i.e., derived from other
        forms.

Let us consider the following examples of passivized intransitive
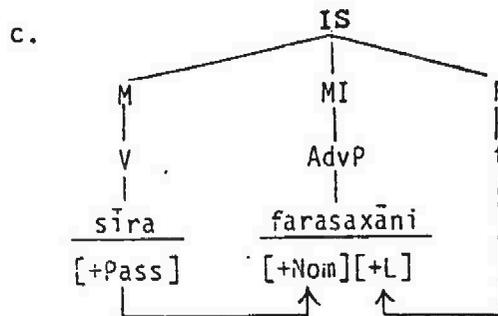structures where the above-mentioned constraints meet all the conditions
stated by Ibn ya^{c}ī$\check{s}$ and Ibn ^{c}aqīl.

(4) a. sāra   zaydun   bi - ^{c}amrin
         walked   zayd   with ^{c}amr
         Zayd walked with ^{c}amr.

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b. <u>sīra</u>   bi - ^camrin
    walked   with   ^cAmr
    One walked with ^cAmr.

c.
```
                        IS
              _____/|_____
             M          MI          F
             |          |           |
             V          PP          t
             |         /  \         |
           sīra    bi-camrin        .
          [+Pass]  [+Gen][+L]
```

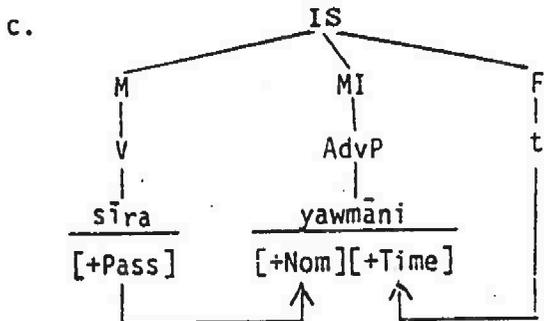(5) a. <u>sāra</u>   <u>zaydun</u>   <u>farsaxayni</u>
        walked   Zayd   two parasangs
        Zayd walked two parasangs.

b. <u>sīra</u>   <u>farsaxāni</u>
    walked   two parasangs
    One walked two parasangs.

c.
```
                        IS
              _____/|_____
             M          MI          F
             |          |           |
             V          AdvP         t
             |          |
           sīra      farasaxāni
          [+Pass]   [+Nom][+L]
```

(6) a. <u>sāra</u>   <u>zaydun</u>   <u>yawmayni</u>
        walked   Zayd   two days
        Zayd walked for two days.

b. <u>sīra</u>   <u>yawmāni</u>
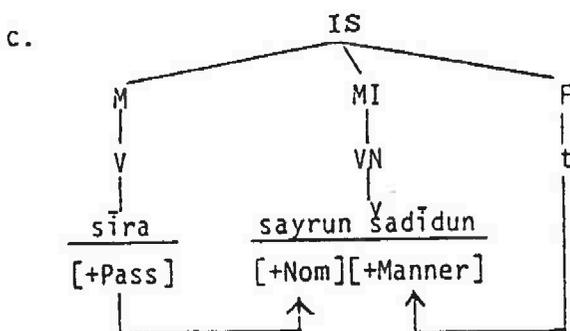   walked   two days
    One walked for two days.

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c.
```
                    IS
          ┌─────────┼──────────┐
          M         MI          F
          │         │           │
          V         AdvP        t
          │         │
        sīra      yawmāni
       [+Pass]   [+Nom][+Time]
```

(7) a. sāra   zaydun   sayran   šadīdan
         walked   Zayd   walking   strong

    Zayd walked hard.

   b. sīra   sayrun   šadīdun
        walked   walking   strong

    One walked hard.

c.
```
                    IS
          ┌─────────┼──────────┐
          M         MI          F
          │         │           │
          V         VN          t
          │         │
        sīra    sayrun šadīdun
       [+Pass]   [+Nom][+Manner]
```

In the examples above, the categories of F(PP), F(AdvP), and F(maṣdar) moved from their original position to the subject position of MI in the passive structure.   The argument for such movement is that the NP-subject will become ∅ and the syntactic categories which occurred in the active form will move to replace the empty subject position. Note that in Arabic there is a very definite adverbial constituent ordering, namely [Maṣdar (manner)-Location-Time] as in this sentence (8):

(8) sāra   zaydun   bi-ᶜamrin   sayran   šadīdan   farsaxayni   yawmayni
      V   S   PP (0)   Maṣdar   Manner   Location   Time

So if an adverb appears as in these sentences out of order at the beginning of the sentence adjacent to the verb, we can conclude that movement has taken place. In addition, the new or moved constituent will inherit its case role from its trace, i.e., from its active form, but it will be assigned a new case marker of nominative or gerentive by the passive verb, or the preposition, respectively.
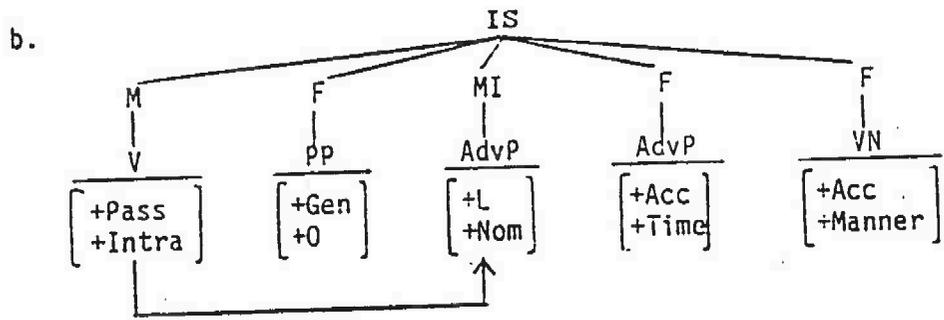
The most important issue is that the passivity of intransitive structures involve syntactic passive or transformational passive in addition to its semantic and phonological aspects. The argument is that the category of PP, AdvP, and <u>masdar</u> moved via transformational rule to the subject position because these categories can occur in the active structure along with the NP-subject. But when the NP-subject in the category MI is deleted, the categories will move and take their positions, leaving a trace behind. But strong evidence for a transformation in such passive sentences comes from the fact that these categories will carry with them their case role which is assigned by the active construction but never by the passive construction. But for these categories to receive a case marker, they must move to the position adjacent to the passive verb. The procedures of the passive intransitive can be stated as follows:

(9) a. The NP-subject must be deleted leaving nothing behind.

b. The active intransitive verb will be changed to the passive intransitive verb undergoing certain phonological rules.
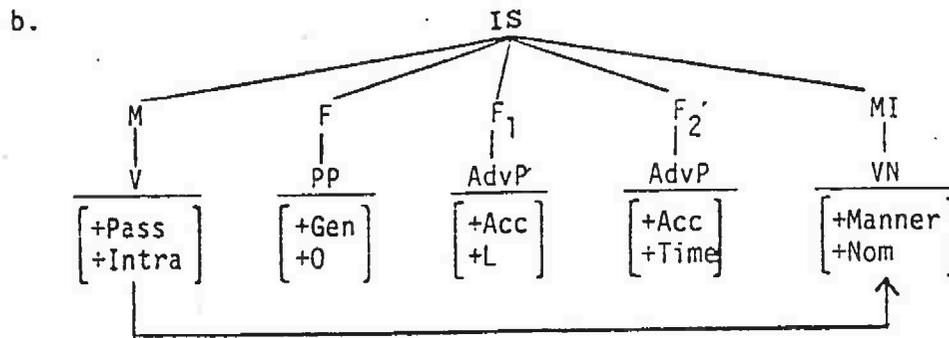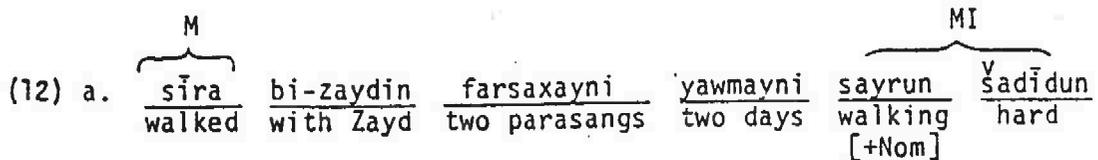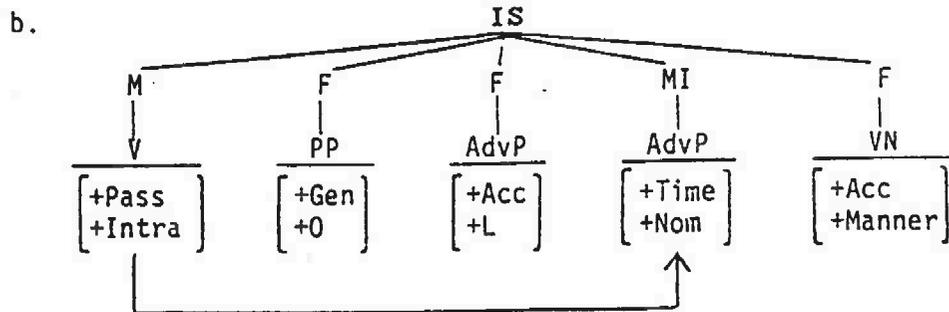
c. The categories PP, AdvP, and masdar will move via
   transformation from their generated positions to the
   passive positions to receive a case marker, but not case
   role, since this is already inherited from the trace.

It seems that the crucial evidence for transformation in the passive
intransitive structures come from the fact that the categories PP, AdvP,
and masdar in certain intransitive structures will function as a subject.
In such intransitive structures, which are different from the intransi-
tive structures in (10-12) the passive operation involves "Trans—
formation ". Let us consider some examples of the passive intransitive
structures where transformation has no role at all.

(10) a.
          M   MI
        sira bi-zaydin   farsaxāni   yawmayni sayran šadīdan
        walked with zayd two parasangs [+Nom] two days walking hard

   One walked hard with Zayd for two parasangs for two days.

b.
                                      IS
        M   F   MI   F   F
        | | | | |
        V   PP   AdvP   AdvP   VN
      [+Pass]   [+Gen]   [+L]   [+Acc]   [+Acc]
      [+Intra]   [+0]   [+Nom]   [+Time]   [+Manner]

(11) a.
          M   MI
        sira bi-zaydin   farsaxayni   yawmāni   sayran šadīdan
        walked with zayd two parasangs two days [+Nom]   walking strong

   One walked hard with Zayd for two parasangs for two days.

b.

```
                              IS
                              |
      M          F          F          MI          F
      |          |          |          |           |
      V          PP        AdvP       AdvP         VN
   ⎡+Pass ⎤    ⎡+Gen⎤    ⎡+Acc⎤    ⎡+Time⎤     ⎡+Acc   ⎤
   ⎣+Intra⎦    ⎣+0  ⎦    ⎣+L  ⎦    ⎣+Nom ⎦     ⎣+Manner⎦
       |_____↑
```

(12) a.

```
        M                                              MI
      ┌──┴──┐                                    ┌──────┴──────┐
      sīra    bi-zaydin   farsaxayni   yawmayni   sayrun      šadīdun
      walked  with Zayd   two parasangs two days  walking      hard
                                                  [+Nom]
```

b.

```
                              IS
                              |
      M          F          F₁         F₂'          MI
      |          |          |          |            |
      V          PP        AdvP       AdvP          VN
   ⎡+Pass ⎤    ⎡+Gen⎤    ⎡+Acc⎤    ⎡+Acc ⎤     ⎡+Manner⎤
   ⎣+Intra⎦    ⎣+0  ⎦    ⎣+L  ⎦    ⎣+Time⎦     ⎣+Nom   ⎦
       |_____↑
```
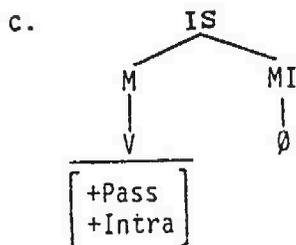
As we have seen in the above examples (10-12), there is no transformational operation in the passive structures; the passive structures here are generated in the base without the need of a transformational device. The only device needed here is case marker assignment of the passive verb. The passive verb is able in these structures to assign its MI(NP-subject) a case marker in whatever position it is generated, since the verb is central governor. The only constraint which is imposed on the MI(NP-subject) is that it must be generated to the right of the passive verb.

Arabic has, however, another kind of passivized intransitive structure which involves only passive morphology and excludes trans-formation. According to ?az-zajjāji, the well-known Arab grammarian sībawayhi licensed the passivization of some intransitive structures

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without the involvement of PP, AdvP, and VN categories.[6] This can be

seen in the following examples:

(13) a. <u>duḥika</u>
<u>laughed</u>
The event of laughing occurred.

   b. <u>quᶜida</u>
<u>sat</u>
The event of sitting occurred.

   c.

```
                    IS
                  /    \
                 M      MI
                 |      |
                 V      Ø
        ┌─────────┐
        │ +Pass   │
        │ +Intra  │
        └─────────┘
```

The assumption here is that the passive verb is operating on the abstract

notion of VN (i.e., maṣdar), which is an empty category.

?Al-?Istrābāði (d. 1289)[7] and ?As-Suyūṭi (d. 1518)[8] explained

another type of passivized intransitive structure which supports the

notion of "passive morphology." Arabic shows some passivized intransi-

tive structures which have no corresponding active. This means that

these passivized structures are generated in the base as passive struc-

tures without any syntactic movement. The base will generate the NP-

object adjacent to the passive verb. The passive verb in turn will

assign this NP-object a nominative case marker. These base-generated

passives can be seen from the following examples:

(14) a. <u>ᶜuqimat</u>   <u>il-mar?atu</u>
<u>was made barren</u> <u>the woman</u>
The woman was caused to be barren.

   b. <u>zukima</u> <u>r - rajulu</u>
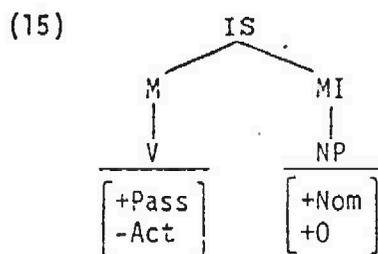<u>catch cold</u> <u>the man</u>
The man was caused to catch a cold.

c. ^{c}unnisat il-jāriyatu
  <u>old maid slave girl</u>

  The slave girl was caused to be an old maid.

d. <u>junna zaydun</u>
   <u>became mad zayd</u>

   Zayd was caused to become mad.

In the above examples (14a-d), the passive verbs are generated in the base without any corresponding active verbs. The only process here is morphological. The underlying structure of (14) is presented in (15).

(15)

```
                 IS
               /    \
              M      MI
              |      |
              V      NP
         ┌ +Pass ┐  ┌ +Nom ┐
         └ -Act  ┘  └ +0   ┘
```

It is proposed in (15) that such passive verbs should be assigned the features of [+Pass] and [-Act] to be distinct from other passive intransitive verbs which have a corresponding active verb.

So far I have been trying to explain the syntactic and semantic aspects of the passivization in Arabic. We have seen that syntax and semantics are involved in all types of passive structure, i.e., transitive passive, intransitive passive, inchoative passive, stative passive, and other types of passive. In the next section, we shall see that passivization involves a crucial operational device which determines the character of the Arabic passive, namely, a.phonological one.

2. <u>The Phonological Aspects of Passivization</u>

The structure of the Arabic phonology was investigated in some recent advanced research done by Brame (1970), McCarthy (1979), and others.

According to Brame (1970), the phonological process of the passive verb in Arabic involves switching the quality of the internal vowels. Thus the perfect triliteral stem <u>CaCvC</u> can be passivized by changing the first <u>a</u> to <u>u</u> and the stem vowel <u>v</u> to <u>i</u>. This gives the passive form of <u>CuCiC</u>. According to this pattern, the active verb <u>darab</u> can be passivized as <u>durib</u>. In the same way, the imperfect verb <u>CVCCVC</u> (prefix CV and stem CCVC) can be passivized by turning the prefix vowel <u>v</u> to <u>u</u> and the stem vowel <u>v</u> to <u>a</u>. Thus the active verb <u>ya + drib</u> can be passivized as <u>yu + drab</u>.

Brame also proposed that the feature [+Passive]· is assigned to the active stems by the passive syntactic transformation. This rule will transform the active <u>Cacvc</u> to <u>Cucic</u>, as in (1).

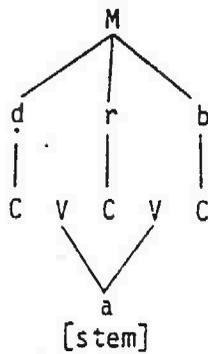(1) CaCvC ─────────⟶ Cucic
     [+Act]   [+Pass]

By several phonological rules developed in McCarthy (1979), the Arabic root undergoes a complex set of morphophonemic changes. McCarthy proposed that the morphological process of the Arabic active and passive verbs involve a reduplication of certain consonants and vowels. This morphological process can be explained under the general principles of autosegmental phonology proposed by Halle (1973).

According to autosegmental phonology, morphemes are controlled by the M-node, which consists of separate autosegmental tiers and aprosodic template. The Arabic verb will consist of a consonantal pattern, e.g., <u>drb</u> 'hit' and a vocalic melody, e.g., <u>a</u> perfective active, which are mapped into a highly constrained set of prosodic templates, each template
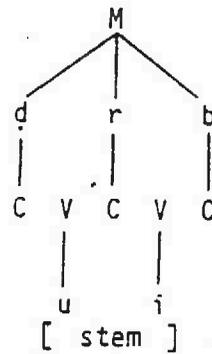
representing wnat is called in Arabic a <u>bunyān</u> 'pattern.' In each <u>bunyān</u>, the meaning of the verb stem is modified in some way.

ıplying this autosegmental phonology to the active and passive forms, we can say that the first <u>bunyān</u> is <u>durib</u>. In the same way, we can say that the first <u>bunyān</u> of the participle is <u>dārib</u> (active) and the second <u>bunyān</u> of the participle _ <u>ma + drub</u> (ɔassive) (ma is X, i.e., prefix). The autosegmental system ˈf the active-passive forms of Arabic can be seen in (2).
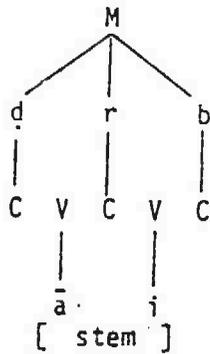
(2) a.

```
              M
           ╱  │  ╲
          ḍ   r   b
          │   │   │
        C V C V C
            ╲ ╱
             a
           [stem]
```

b.

```
              M
           ╱  │  ╲
          ḍ   r   b
          │   │   │
        C V C V C
            │   │
            u   i
         [ stem ]
```

c.

```
              M
           ╱  │  ╲
          ḍ   r   b
          │   │   │
        C V C V C
            │   │
            ā   i
         [ stem ]
```

d.

```
              M
           ╱  │  ╲
          ḍ   r   b
          │   │   │
      X + C  C V C
              │
          ma + ū
         [ stem ]
```
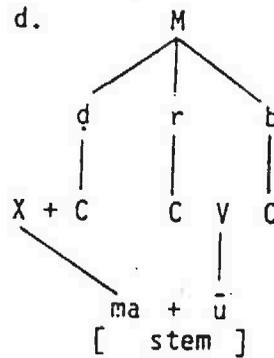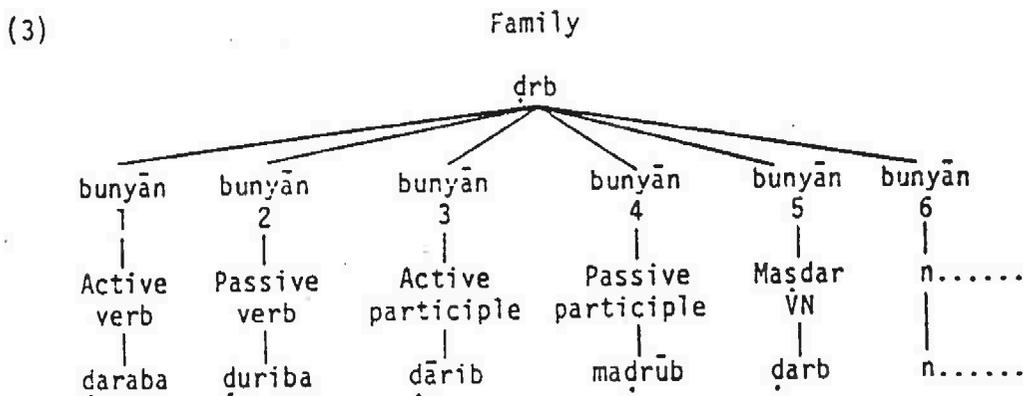
In this respect, the autosegmental system is more capable than transformational rules of deriving Arabic morphology because it can reduce the transformational rules to one form, namely A $\longrightarrow$ B/X, where A, B, and X are strings of elements. The autosegmental system can be collapʳed under a more general morphological thˑˑnʷ proposed by Ibn

Jinni (d. 1002) which was called ʔal-ʔištiqāqu l-ʔakbar wa l-ʔaṣġar, i.e., large and small derivational theory.[9] The essential idea behind Ibn Jinni's theory is that the root can form different bunyāns, i.e., patterns which belong to a single family. For example, all forms or bunyāns which are formalized from the root ḍrb have one single meaning, e.g., 'hitting,' even though all these bunyāns can occur in different contexts. Thus, according to Ibn Jinni's theory, the active and passive bunyāns are members of one family which is able to formalize different forms. That is why Ibn jinni viewed the Arabic language as families and tribes, each family or tribe having its own semantic character. This can be seen from the following tree (3):

(3)   Family

                                          ḍrb

bunyān 1	bunyān 2	bunyān 3	bunyān 4	bunyān 5	bunyān 6
Active verb	Passive verb	Active participle	Passive participle	Masdar VN	n......
ḍaraba	ḍuriba	ḍārib	maḍrūb	ḍarb	n......

The autosegmental system of Halle and McCarthy and the derivational system of Ibn jinni can be clarified by investigating different bunyāns. Let us consider the following examples:

(4) a. ḍaraba zaydun ^{c}amran
         hit   zayd ^{c}amr
    Zayd hit ^{c}amr.

    b. ḍuriba ^{c}amrun
        was hit ^{c}amr
    ^{c}amr was hit.

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(5) a.   <u>dahraja</u>   <u>zaydun</u>   <u>il-hajarata</u>
           rolled down   zayd   the stone
           Zayd rolled the stone down.

    b.   <u>duhrijat</u>   <u>il-hajaratu</u>
           was rolled down   the stone
           The stone was rolled down.

(6) a.   <u>?istaqbala</u>   <u>zaydun</u>   <u>iz - zā?ira</u>
           received   zayd   the visitor
           Zayd received the visitor.

   b.   <u>?ustuqbila</u>   <u>z - zā?iru</u>
           was received   the visitor
           The visitor was received.

We notice in the above examples that all verbs passivized are perfective even though their stems are different. The stem in (4b) is triliteral, but in (5b) it is quadriliteral, whereas in (6b) it is quinqueliteral. The phonolgoical changes which took place in all perfective forms can be seen in (7).

(7)

	Stem	Active	Passive
(i)	triliteral	CVCVC $\bigvee$ [a] $\longrightarrow$	CVCVC | | [u i]
(ii)	quadriliteral	CVCCVC $\bigvee$ [a] $\longrightarrow$	CVCCVC | | [u i]
(iii)	quinqueliteral	CVCCVCCVC $\bigvee$ [a] $\longrightarrow$	CVCCVCCVC | | [u i]

The main phonological change in (7) is that the stem vowel <u>a</u> becomes <u>u-i</u>. This phonological process from active to passive leads us to formalize a more general rule of the perfective active/passive form, as in (8).

(8)
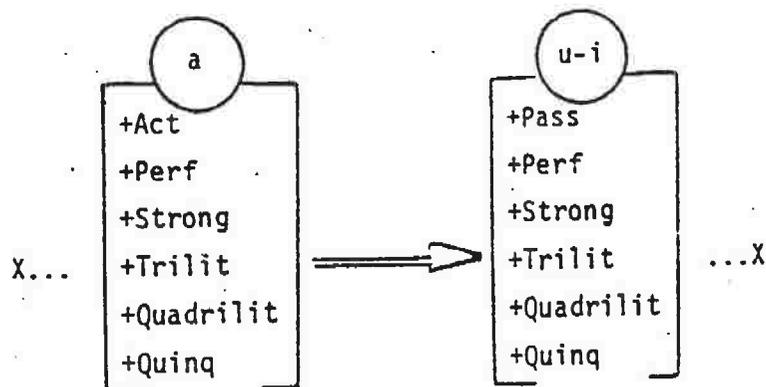
The phonological process of the perfective forms in (8) has a different nature from the phonological process of the imperfective forms, as we shall see in the following examples:

(9) a. $\dfrac{\text{yaḍribu}}{\text{is hitting}}$ $\dfrac{\text{zaydun}}{\text{zayd}}$ $\dfrac{{}^c\text{amran}}{{}^c\text{amr}}$

Zayd is hitting ^{c}amr.

b. $\dfrac{\text{yuḍrabu}}{\text{is hit}}$ $\dfrac{{}^c\text{amrun}}{{}^c\text{amr}}$

^{c}amr is being hit.

(10) a. $\dfrac{\text{yudaḥriju}}{\text{is rolling down}}$ $\dfrac{\text{zaydun}}{\text{zayd}}$ $\dfrac{\text{hajaratan}}{\text{stone}}$

Zayd is rolling a stone down.

b. $\dfrac{\text{tudaḥaraju}}{\text{is rolled down}}$ $\dfrac{\text{hajaratun}}{\text{stone}}$

A stone is being rolled down.

(11) a. $\dfrac{\text{yastaqbilu}}{\text{is receiving}}$ $\dfrac{\text{zaydun}}{\text{zayd}}$ $\dfrac{\text{iz - zā?ira}}{\text{the visitor}}$

Zayd is receiving the visitor.
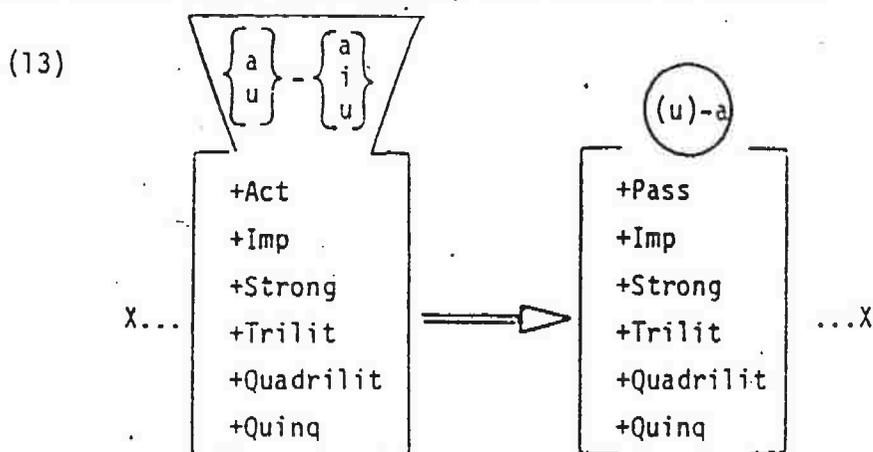
b. $\dfrac{\text{yustaqbalu}}{\text{is received}}$ $\dfrac{\text{z - zā?iru}}{\text{the visitor}}$

The visitor is being received.

As we notice · in the examples above, the imperfective forms undergo a different phonological process. Once again, the imperfective verb has different stems. The stem in (9b) is triconsonantal; in (10b), it is quadriconsonantal; whereas in (11b), it is quinqueconsonantal. The phonological process of these forms can be seen in (12).

(12)

		Stem	Active	Passive

(i)		triliteral	XV+CCVC
			   | |
			  [a i] ⟶
				XV+CCVC
				   | |
				 [u a]

(ii)		quadriliteral	XV+CVCCVC
			       |
			      [i] ⟶
				XV+CVCCVC
				       |
				      [a]

(iii)		quinqueliteral	XV+CCVCCVC
			   | |
			  [a i] ⟶
				XV+CCVCCVC
				   | |
				 [u a]

The main phonological change in (12) is that the prefix and stem vowels [a-i] become [u-a] in both triliteral and quinqueliteral, whereas the stem vowel [i] becomes [a] in the quadriliteral. Once again, here we can formalize a more general phonological rule which can account for all imperfective forms transforming from active to passive.

(13)

$$
X \ldots \left\{ \begin{matrix} a \\ a \\ u \end{matrix} \right\} - \left\{ \begin{matrix} a \\ i \\ u \end{matrix} \right\}
\begin{bmatrix} +Act \\ +Imp \\ +Strong \\ +Trilit \\ +Quadrilit \\ +Quinq \end{bmatrix}
\Longrightarrow
\begin{bmatrix} +Pass \\ +Imp \\ +Strong \\ +Trilit \\ +Quadrilit \\ +Quinq \end{bmatrix} (u)-a \ldots X
$$

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The autosegmental phonological system of the active/passive is capable of capturing all relevant morphological forms in Arabic. By the intricate relations between vocalic and consonantal within one particular root, the autosegmental system seems to generate all morphonemes needed for active and passive.

In short, Arabic passivity must be approached and analyzed by an abstract notion of phonological syntactic and semantic theory which is able to show the internal computational process of the interchangeability within a particular single root.

<p align="center">Wallāhu ?a ^{c}lam</p>

<p align="center">✴ ✴ ✴ ✴ ✴</p>

Footnotes

1. Ibn ya^{c}īš, Šarh, ?Al Mufaṣṣal, Vol. 2, ed. 1970, Beirut, p. 69.

2. Ibid.

3. Ibid, p. 14.

4. Ibid, pp, 72-73.

5. Ibn ^{c}aqīl, Šarh Ibn ^{c}aqīl, Vol. 2, ed. 1967, Eqypt, p. 119.

6. ?Az-Zajjāji, ?al-jumal, ed. 1957, Paris, pp. 88-91.

7. ?Al-?Istrābāōi, Šarh ?Aš-Šāfiyah, ed. 1975, Beirut, p. 272.

8. ?As-Suyūṭi, ?Al-?Ašbāh wa n-naōā?ir, Vol. 2, ed. 1940, Ḥaydar ?Abād, p. 433.

9. Ibn Jinni, ?al-xaṣā?iṣ, Vol. 2, ed. 1952, Beirut, p. 133.

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        būlāq, 1898.

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د. مازن الوعر

The Syntactic, Semantic and Phonological Generation of the Passivization Structures in Standard Arabic.

By : Mazen Al-Waer, PH.D.