

***The Category 'D' Reconsidered***

***BY***

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## **THE CATEGORY 'D' RECONSIDERED**

### **ABSTRACT:**

This study deals with the categorial status of a set of words known as 'determiners' and the features encoded in them.

We argue, following a suggestion in Chomsky, 1975, that 'Optimality' conditions on grammar require grammatical categories to be 'primitive' in the sense that they must be unanalysable into further entities. The status of many words classified as determiners does not conform with this suggestion. The category 'D' is therefore a non-standard grammatical category. We have provided mathematical, morphological and syntactic arguments and facts drawn from a number of languages including Arabic, English, French, German, Hebrew, Italian, ...etc. showing that the category 'D' is not a 'primitive' category and therefore should be suspended and replaced by its 'primitive' components.

We have shown that 'genuine' determiners are morphologically complex where each element encodes a functional feature, such as 'person', 'number', 'gender', 'proximate', 'definite', ...etc. These features, we claim, are functional categories. Many words classified as belonging to the category 'd' are in fact nouns or adjectives.

Adopting an articulated theory of 'D' in which functional features are taken as functional categories is not only theoretically motivated but also has implications for language learnability.

### **INTRODUCTION**

The insightful analysis of the structure of noun phrases proposed in Abney (1987) has opened new points and solved many long-lasting problems some of which concerned the status of the category D and its role in nominal constructions. Abney (1987) argues that determiners have

the properties of functional elements like complementizers and modal verbs suggesting that they should receive parallel syntactic treatment.

Chapter four in Abney (1987) is largely devoted to the argument that 'Pronouns' should be recognised as a sub-class of the syntactic category D head of DP. This was against the general assumption that pronouns are closer to nouns.

One property of the syntactic category D, pronouns are no exception, is to carry the referential and indexical features of the noun phrase following them (cf; Borer (1984), Abney (1987), and Chomsky (1994)).

I will argue that the category D is a non-standard grammatical category and therefore should be replaced by its 'primitive' unanalysable components such as the features Person, Number, Gender, Definite, ... etc. Mathematical, morphological and Syntactic arguments are provided showing that the category D, as it stands, is not drawn, like other categories, e. g. N, V, ...etc. from universal primitive vocabulary. Ritter (1991, 1993), for example, argues, based on data from Hebrew, for two functional projections in noun phrase structure, namely Number and Gender Phrases, beside the original DP (see Picallo, (1991, 1994) and Vergnaud and Zubizarreta 1992).

Section one includes a short exposition of words classified as belonging to the determiner set. Certain points are raised there against D as an idea grammatical category. Section two examines the categorial status of determiners. Some examples provided show that elements classified as Ds are morphologically complex and therefore the category D is a non-standard category. The category D does not conform with the mathematical equation set for primitive grammatical categories.

Sections three and four are devoted to exploring morphological and syntactic structures of 'Determiners' in various languages that confirm the conclusion in section two. In the conclusion, section five, I propose

an articulated theory of D and suggest three methods by which the findings of this article can be incorporated into the theory of grammar. In sections six, I attempt to explore some implications of the main argument of this article for language learnability.

### **1-DETERMINERS**

Determiners are 'function' words that normally come before nouns and noun phrases in the traditional sense. They are used to modify and give a range of reference to nouns. Determiners can make nouns definite or indefinite / specific or general, indicate a quality or possession / position or place ...etc. Pronouns are considered as a sub-class of determiners (cf; Woods, E. and Nicole McLeod, 1990: p. 158; Postal, 1966; Abney, 1987; and many others).

Determiners are introduced in some grammar books as consisting of two major groups:

- 1 a) Specific determiners:
  - (i) The definite article 'the'.
  - (ii) Demonstratives.
  - (iii) Possessives.
  - (iv) Pronouns.
  - (v) Pronominal adverbs (here, there, now, then,...)
- b) General determiners:
  - (i) a, a few, little, all, an.
  - (ii) another, any, both, each, either.
  - (iii) enough, every, few, fewer, less.
  - (iv) many, more, most, much, neither, no, other, several, some.
  - (v) which, what, whose, whichever, whoever, ...

(Collins Cobuild English Usage: pp. 186-7, 556-7)

In other grammar books determiners are classified into three groups:

- 2 a) Central determiners:
  - (i) Articles.
  - (ii) Demonstratives.

- (iii) Possessives.
- (iv) Quantifier.
- (v) Wh-determiners.
- b) Predeterminers:
  - (i) Some quantifiers (all, both, half, ...).
  - (ii) Multipliers (once, twice, double,...).
- c) Postdeterminers:
  - (i) Cardinal numbers.
  - (ii) Ordinal numbers.
  - (iii) General ordinals (next, last, ...).(Woods, E. and Nicole McLeod, 1990 Units, 3.1-11)

These classifications are in many ways inadequate. First, a distinction must be made between nominal elements wrongly classified as determiners and 'genuine' determiners. For example, articles, demonstratives, possessives, pronouns and some quantifiers, which I will call 'genuine' determiners, differ in their properties from words like 'other', 'another', 'many', 'enough', which seem to share adjectives in some of their properties, at least in languages other than English. In Arabic, for instance, adjectives unanimously follow the noun they modify whereas 'genuine' determiners precede the noun they modify<sup>(1)</sup>. Consider the following examples:-

- 3 a) hatha al-rajul \*hatha<sup>(2)</sup>  
this the man this  
"this man"
- b) inglizi rajul-un inglizi  
English mand-indef. English  
"an English man"
- c) baGdu al-rijaali \*baGdu<sup>(3)</sup>  
some the-men some  
"some of the men"
- d) \*kafin taGam-un kafin  
enough food-indef. enough

“enough food”

Second, even after excluding words with lexical content, there still remains that the ‘determiner’ set does not constitute a homogeneous syntactic category. They have miscellaneous properties. For example, their occurrences are not uniform throughout nominal constructions. In 2(a) above, for instance, determiners do not co-occur with one another, but those in 2 (b) do co-occur with others in 2(a) and (c).

Third, determiners encode specific features most of which are already recognised as independent functional categories. AGR-element represented morphologically and functionally in many determiners is now realised as head of AGR-Phrase<sup>(4)</sup>. The status of Quantifier Phrase (QP), whether a functional category or a genuine NP, is still dubious (cf; Ouhalla, 1988).

Determiners in general encode features like the following:

- 4 a) Definiteness (+/-definite).
- b) Person.
- c) Number (+/- singular/ plural).
- d) Gender (+/- masculine/ feminine).
- e) Quantity (+/- partitive).
- f) Case.
- g) Proximity (+/= proximate/ non-proximate).
- h) Saptio-temporal.
- i) ...etc.

Fourth, features such as these in 4 above are in many languages represented morphologically in the structure of the ‘determiner’. For example, the Arabic demonstrative element hathak (= that) is morphologically complex. Consider the following analysis:

- 5 a) ha-th-a-k.
  - (i) ha- (=+ definite<sup>(5)</sup>).
  - (ii) -th- (dem.)..
  - (iii) -a- (s,m).

- (iv) -k (non-proximate).
- (b) ha-th-i-k.
  - (i) ha- (as in (a) i).
  - (ii) -th- (as in (a) ii).
  - (iii) -i- (s,f)..
  - (vi) -k (as in (a) iv).

Each of the morphological elements illustrated in 5(a) and (b) stands for a feature such as those listed in 4 above<sup>(6)</sup>.

To sum up, there are lexical as well as functional words within the determiner set. Determiners are not a homogeneous syntactic category as they show irregular syntactic behaviour. They encode specific functional features. Most determiners are morphologically complex; each element stands for a feature.

The four points summarised above brings about the question of whether the 'determiner' is a primitive grammatical category or not.

## **II-THE CATEGORIAL STATUS OF DETERMINERS**

A standard assumption in generative grammar is that grammatical categories must be 'primitive': simple and unanalysable into further entities (Chomsky, 1975). Chomsky states that optimal grammar requires grammatical notions to be derived from a set of primitive categories (ibid., p. 21). Primitive grammatical categories are thus demanded by conditions of 'Optimality'.

Grammatical categories have been taken in most current linguistic theories as comprising complex notions made up from smaller elements 'features'. This assumption rests on three basic points summarised as follows (from Borsely, 1991, pp. 48-57):

1-A linguistic expression needs to be associated not only with a basic category but also with various feature specifications that provide additional information about it.

2-Phrasal categories are projections of specific grammatical categories. For example, the head category is given a specific feature

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value (=0), an intermediate constituent structure is given the value (=1) and finally the maximal projection of the category is given the value (=2).

3-The basic categorial status of an element can be analysed in terms of a pair of feature specifications in the following way:

- 6
- a) Nouns [+n, -v].
  - b) Verbs [+v, -n].
  - c) Adjectives [+n, +v].
  - d) Prepositions [-n, -v]. (cf., Borsely, 1991; Chomsky, 1981, 1986; Ouhalla, 1988 and many others).

The general idea is that syntactic categories are to be specified in terms of the features 'nominal' and 'verbal' with a plus and minus values in the manner described in 6 above. The INFL element with both nominal and verbal features was considered a non-standard category. In later studies the INFL element was decomposed into two distinct functional categories: TP and AGRP (cf., Ouhalla, 1988; Pollock, 1989 and Chomsky, 1989).

Given this measure, the AGR element itself is a non-standard category. There is a number of attempts to decompose AGR into its components i.e., person, number and gender. For example, Ritter argues for Per Phrase, Num Phrase and Gen Phrase (cf., Ritter, 1991, 1993, 1995).

The 'Determiner' category is likewise a non-standard grammatical category and therefore should be decomposed into its components; each will be recognised as an independent entity and head of its own phrase<sup>(7)</sup>.

From a logical point of view a category is 'non-primitive' if analysable into smaller entities. For example, 7(a) is not a primitive category whereas 7(b) and (c) are:

- 7
- a)  $X = \{x_1, x_2, x_n\}$
  - b)  $X = \{x\}$ .
  - c)  $X = \{O\}$ .



In 7(a) the category X consists of smaller entities;  $x_1, x_2, x_n$ . In 7(b) and (c) X contains only x/ the feature x or nil (empty).

An alternative to 7 (b) and (c) is to say that X contains the feature x with two values (+x/ -x):

$$8 \quad a) \quad X = \{+x\} / \quad b) \quad X = \{-x\}.$$

The small x stands for a category member of the set X/ a feature of the category X. to put this in a technical framework, consider the following equation using the Characterised Feature Method<sup>(8)</sup>:

$$9 \quad X = \{x : 0 \leq x \leq 1\}$$

The value of x is either (1) or (0); 1 represents the plus value of x and 0 represent the minus value of x. Suppose we replace X with a syntactic category. Then X will have at most one feature with two parameterised values specified by plus and minus notations.

The question now is whether 9 applies to any of the determiner set or not. There are clues indicating that some determiners encode more than one feature such as those given in 4 above. In other words, determiners encoding multi-features are complex. For example, the Arabic demonstrative pronoun hathak "that" encodes the following features, *definite*, *number (s)*, *gender (m)*, *person (3)* <sup>(9)</sup>, *proximate*, (see 5 above). Similar determiner elements are equivalent to 7(a), which indicates that they are complex 'non-primitive' categories. In order to eliminate this deficiency from grammatical categories one might suggest that grammatical features encoded in determiners are themselves independent functional categories. Each of them will then be a 'primitive' category in accordance with the mathematical equation 9. Consider the following:

- 10 a) Definite = { +def / -def }
- b) Number = { +sing / -sung }
- c) Gener = { +masc / -masc }
- d) Person = { +3rd / -3rd }
- e) Proximate = { +prox / -prox }

The same idea extends to personal pronouns, a sub-set of the determiner set; consider the following:

- 11 a) huwa (=he )  
b) Encoded features:  
(i) 3<sup>rd</sup> person, (ii) singular, (iii) masculine, (iv) nom.
- 12 a) Person = { +3<sup>rd</sup> / -3<sup>rd</sup> }  
b) Number = { +sing -sing }  
c) Gender = { +masc / -masc }  
d) Case = { +nom / -nom }

Personal pronouns encode the feature 'Person' which will be taken as an independent 'Primitive' functional category in this view. 'Person' as a grammatical category need not be thought of as encoding multi-features because 'first, second and third' persons are values of the same feature. These values can be reduced to one with a plus and minus values. I shall take first and second persons as the minus value and third person as the plus value, or vice versa. The reason why first and second persons are given one value is due to the fact that 'I' and 'you' are distinct yet they reduce to one in the pronoun 'we', for 'we' refers to 'I' and 'you' but not to 'I' and 'I'. 'He', of course, has a distinct value. This is a logical conclusion (See Ritter, 1995).

I would like also to adopt a some what general view of the category 'Person' to include features like 'demonstrative' and 'spatio-temporal' that will be realised as instances of the value 'third person' (See footnote no. 6).

Consider the Arabic and English definite articles al- and the respectively. They encode the feature '*definite (+def)*' only. The English indefinite article a / an encodes in addition to the feature '*definite (-def)*' the feature '*number (+sing)*'. The Arabic suffixal indefinite element -u-n encodes the features '*definite (-def)*' and '*Case (+nom)*'. In French, however, le and la encode the features '*definite (+def)*' and '*gender (+/-masc)*' while les encodes the features '*definite (+def)*' and '*number (-sing)*'. Consider the following examples from French:

- 13 a) le garçon  
the-m boy  
“the boy”  
b) la fille  
the-f girl  
“the girl”  
c) les étudiants  
the-pl students  
“the students”

Other determiners with quantification force are even more embarrassing to the notion of ‘Determiner’ as a syntactic category. Consider the following examples from Arabic, English and French respectively:

- 14 a) kul al-Haleeb  
b) kul al-kutub  
15 a) all the milk  
b) all the books  
16 a) tout le lait  
b) tous les livres

Notice that the predeterminer elements in Arabic and English do not overtly encode the feature ‘*number*’ whereas in French both the determiner and predeterminer overtly display the feature ‘*number*’.

For example both tout and tous encode the features ‘*quantity*’ and ‘*number*’; they differ in the value of the feature ‘*number*’, though.

Similarly, the determiners quelque and quelques “some” reflect different values of the feature ‘*number*’. Consider the following examples:

- 17 a) quelque espoir  
some-s hope  
“some hope”

- b) quelques amis  
    some-pl friends  
    "some friends"

From the discussion given in this section we come up with two points. First, the category 'D' being analysable into smaller entities, is not a 'Primitive' grammatical category and so should be suspended. Second, the features encoded in determiners are to be recognised as functional grammatical categories. In the following sections, various morphological and syntactic clues supporting these two points will be explored in a number of languages.

### **III- THE MORPHOLOGY OF DETERMINERS**

In the last section we have seen determiners encoding more than one functional feature such as these in 4. We have come up with the conclusion that determiners do not form a 'Primitive' syntactic category. In this section we explore the morphological structure of what appears to be 'genuine' determiners to find out whether or not morphological complexity corresponds to complexity in grammatical features. We want also to insure regularity and consistency in morphological structures and operations applying to them either within the same language or cross-linguistically.

English and Arabic data will first be considered and then data from French, Italian, German, Indonesian and Hebrew will also be dealt with.

In English, there are some determiners display in addition to the features '*number*' and '*definite*' other features like '*demonstrative*' and '*spatio-temporal*', which we have assumed instances of the feature '*person*', and '*proximity*' in space or time. Consider the following words:

- 18 a) this, these, here, now.  
    b) that, those, there, then.  
    c) what, whatever, which, whichever, whose, whosoever,  
        where, wherever, when, whenever, ...etc.

Words in 18(a) refer to people/ things/ place(s) or time(s) which are close in space/ position or time. Words in 18(b) refer to people/ things/ place(s) or time(s) which are remote in space/ position or time. 18(c) include words known as wh-determiners. They encode features such as *number*, *possession*, *definite* and probably *person*. We shall discuss them later.

Notice the contrast between this and that, these and those, here and there, now and then. The contrast represents two distances: what is near or close to the speaker and what is remote from the speaker in space, position or time. Similarities between the two groups in their phonological component is almost symmetrical. For example, six words out of eight begin with 'th'. This and that differ only in the last two letters '-is' and '-at'. These and those differ only in the vowels 'e' and 'o' respectively. Here and there differ only in the letter 't' in the latter. Now and then share the letter 'n'.

18(a) and (b) differ in the value of the feature '*proximate*'. 18(a) encodes the plus value i.e., what is near to the speaker, and 18(b) encodes the minus value i.e. what is farther from the speaker. Among each group there are differences as well as similarities; for example this and these differ in that the sound /i/ in the former is prolonged in the latter, i.e., /i:/<sup>(10)</sup>. That and those differ in their last parts, i.e., -at and -ose respectively.

This/ that and these/ those differ in the value of the feature '*number*'. The pronominal adverbs here/ there and now/ then encode the feature '*spatio-temporal*', that I assumed an instance of the feature '*person*', in addition to the feature '*proximate*' but not the feature '*number*'. With these observations in mind, we can say with much confidence that differences in form reflect differences in functional features and/ or their values.

Consider now the similarities and what we can make out of them. What does it mean that six words out of eight begin with 'th'? Remember that demonstrative pronouns and pronominal adverbs encode

the feature '*definite*'. This brings in the definite article 'the' which is very clearly similar to the beginnings of this, that, these, those, there and then. Despite the fact that '*the*' comes from the Old English '*the- thas, that*' which were used as both demonstrative pronouns and definite articles. I do not wish to claim that 'th' is itself the definite article 'the', and affix with 'e' deleted after attaching to these words. What is undoubtedly obvious is the fact that these words encode the feature '*definite*' (+*def*)'.

Let us turn now to 18©. All words in 18© begin with 'wh-' but this does not tell much. When we put 'w' and '-ever' aside and compare the residue with elements in 18 (a) and (b), the symmetry becomes more obvious except for 'which'. Consider the following:

- 19 a) What / -hat / that  
b) which / -hich / ....  
c) whose / -hose / his  
d) where / -here / here, there  
e) when / -hen / then

Notice that the italicised elements in the second column being with 'h' which may indicate that they were related or at least share some features. Compare now the following elements to their original forms in Old English:

- | 20 a) <u>Model English</u>  | b) <u>Old English</u>       |
|-----------------------------|-----------------------------|
| (i) the                     | (i) the, thas, that         |
| (ii) who, whom, what, which | (ii) hwa, hwam, hwat, hwelc |
| (iii) this, that            | (iii) thes, that            |
| (iv) he, she, it, they      | (iv) he, heo, hit, that     |
| (v) here, there             | (v) her, thar               |
| (vi) whose                  | (vi) hwa-es                 |
| (vii) where, when, then     | (vii) hwar, hwanne, thanne  |
| (viii) now                  | (viii) nu                   |

The element 't' at the end of some words in (b) (i)- (iv) is normally a marker for neutral gender in Old English. The elements 'm' in 'hwam' in

(b) (ii) is a marker for accusative case and 'es' in 'hwa-es' in (b) (vi) is a genitive/ possessive marker. The element 'r' in 'her', and 'n' in (b) (vii) and (viii) may refer to time. The vast majority of words in both (a) and (b) have the element 'h' either their first or second letter. This is not a coincident. The element 'h' refers to the third person as shown in the singular third person pronouns 'he' "= he", 'heo' "=she" and 'hit' "=it" in (b) (vi). Suppose that elements such as 'th', 't', 'm', 'es', 'r', 'nne', 'n', and 'h' each represents a functional features like those in 4. Since we do not know very much about the morphology of Old English and how to establish a link between these elements and functional features, we shall look at similar data in other languages.

John Lyons, as he examined data from Classical Greek, Latin and Turkish, notes that in many languages no distinction can be drawn between demonstrative pronouns and the third person singular pronouns ( cf., Lyons, 1968: p. 279). This observation explains the presence of the element 'h' represents the feature 'person' and the element 'th' represents the feature 'definite (+def)' then any determiner with these elements present in its morphology also encodes the corresponding functional feature(s). In other words, wh-determiners ( 18c ) encode the functional features 'person, spatio- temporal, definite +/-def'. The (minus def) value is probably encoded in the element '-ever'.

The following two points can be elicited: first, morphological similarities and differences signal functional feature intersections. Second, values of functional features are sensitive to morphological alternations happening in the elements encoding them.

The same observation can be seen in many Arabic examples that are even more surprising than those given in English. Notice the following examples from Arabic:

21 a) Demonstratives

(i) ha-tha-Ø /  
+def-this,s,m-close  
"this, masc."

ha-tha-k  
+def-this,s,m-remote  
"that, masc."

(ii) ha-thi-Ø / +def-this,s,f-close "this, fem."	ha-thi-k +def-this,s,f-remote "this, fem."
(iii) ha-thawla-Ø +def-these,pl,m-close "these, masc."	ha-thawla-k +def-these,pl,m-remote "these, masc."
(iv) ha-thawlin-Ø / +def-these,pl,f-close "these, fem."	ha-thawlin-k +def-these,pl,f-remote "these, fem."
b) <u>Pronominal adverbs</u>	
(i) hina-Ø / here- close	hina-k there-remote
(ii) ha-1Heen +def-time "now"	ha-k-1Heen +def-remote-time "then"

The initial element ha- in words in 21(a) and (b) in a definite marker equivalent to the canonical definite article al- attaching to lexical words as a prefix. In their studies on Semitic languages, Gray (1934) and Amayrah (1987) have treated ha- as a Semitic definite article still functioning as such in some Semitic languages. For example in Hebrew ha- is the canonical definite article as in "ha-khatul" (the cat), (see Borer, 1984). In Arabic, the element ha- still preserves the feature '*definite*' (+def); for example the following two nominal constructions "tha al-rajul" and "hatha al-rajul", while both mean "this man", the former but not the latter is deliberately made indefinite to express the speaker's discontent.

Although the use of ha- as a definite article has been restricted, there remains some traces of ha- co-occurring with the canonical definite article al- in spoken Arabic. In such constructions, al- must appear closer to the lexical noun than ha-. Consider the following examples:

- 22 a) ha-al-kitaab.  
Two) \*al-ha-kitaab.  
Three) al-kitaab.  
Four) \*ha-kitaab.



Notice that 22 (a) and (c) are grammatical whereas 22(b) and (d) are not. 22 (d) would be grammatical in Hebrew. 22 (b) is ungrammatical because ha- must occur before al- in nominal constructions, probably it has a wider scope than al-. Another possibility, which cannot be ruled out completely, is that ha- in 22 (a) is merely a short form of the demonstrative hatha where -tha has been deleted as result of applying a PF contraction rule in the following manner:

- 23 a) ha-tha                      al-kitaab.  
          this                            the-book  
  “this book”  
      b) ha-al-kitaab.  
  “this book”

The elements, -tha, -thi, -thawla, -thawlin, in 21 (a) encode the features ‘*person*’, ‘*number*’ and ‘*gender*’. The feature ‘*person*’ is no doubt encoded in the element “th”. The feature ‘*gender*’ with its two values is encoded in the elements “a”, “I” and “in” ( cf., 21(a) (I)-(iv). The element “wl” encodes one of the values of the feature ‘*number*’ i.e., ‘*plural*’. The absence of this element triggers the other value of ‘*number*’ i.e., ‘*singular*’.

The element “k” in 21 (a) and (b) represents the feature ‘*proximate* (-*prox*)’ whereas its absence of triggers ‘*proximate* (+*prox*)’.

These examples from a variety of Arabic straightforwardly confirm our point that functional features are overtly represented in the morphology of determiners. The rest of this section is devoted to exploring data from Indonesian, Urdu, Italian, French and Hebrew. First, let us consider Indonesian and Urdu:

- 24 a) Pronominal adverbs                      (Indonesian)  
      (i) didinya “here”  
      (ii) didito “there”  
      b) Demonstratives  
          (i) jauh                      “this”  
          (ii) jauh                     “that”

- (iii) yauh buku "this book"  
(iv) jauh buku "that book"  
lawba buku "many books"
- 25 a) Pronominal adverbs (Urdu)  
(i) yahan "here"  
(ii) wahan "there"  
(iii) ab / abhe "now"  
(iv) es waqt "near past/ future"  
(v) os waqt "remote past/ future"
- b) Demonstratives  
(i) yeh "this"  
(ii) who "that"
- c) yeh karain  
this cars  
"these cars"
- d) who karain  
that cars  
"those cars"

The above examples from Indonesian and Urdu show that the difference in features values is reflected on morphology. For example, in 24 (a) (i), (ii) and (b) (i), (ii) the words didinya and didi-to differ in the last syllables which indicates that the feature 'proximate' is encoded in elements -nya and -to. -nya encodes the 'plus' value and -to encodes the 'minus' value. Similarly, the elements 'y' and 'j' in the demonstratives yauh "this" and jauh "that", encode the feature 'proximate' in both values. The elements didi- and -auh refer to space / position, which we have assumed as instances of the feature 'person'. In 24 (b) (iii) and (iv), the words yauh "this" and jauh "that" encode also the feature 'number (+sing)'. The noun buku "book", as shown in 24 (c), is not in plural form as expected, e.g., "many books". The feature 'number (-sing)' is encoded in the determiner lawba "many" before the noun buku (cf., 24 (c)). Contrary to this are the Urdu examples 25 (c) and (d) where the feature 'number (-sing)' is encoded in the noun karain "cars" rather than in the demonstratives yeh "this" and who "that" occurring before it.

The feature 'proximate', in the Urdu examples 25, is encoded in the elements ya- / ye- "close" and was- / wo- "remote" in pronominal adverbs and demonstratives<sup>(11)</sup> (cf., 25 (a) (i), (ii) and (b) (i), (ii). In 25 (a) (iii) and (iv), the same feature is encoded in the elements es and os. The elements -han in 25 (a) (i), (ii) and -h in (b) (i), (ii) are encoding the feature 'person'.

Consider now the following examples from Italian:

26 a) Pronominal adverbs

- (i) ora "now"
- (ii) all-ora<sup>(12)</sup> "then"
- (iii) qua/ qui "here"
- (iv) li/ là "there"

b) Demonstratives<sup>(13)</sup>

- (i) que-sto  
"this,s,m"
- (ii) que-llo  
"that,s,m"
- (iii) que-sta  
"this,s,f"
- (iv) que-lla  
"that,s,f"
- (v) que-sti  
"these,pl,m"
- (vi) que-lli  
"those,pl,m"
- (vii) que-ste  
"these,pl,f"
- (viii) que-lle  
"those,pl,f"

The pronominal adverbs ora "now" and all-ora "then" differ in the first syllable of the latter, i.e., all-. The absence and presence of this element, all- encode the two values of the feature 'proximate'. This may be compared to the absence and presence of the plural -s in the morphology

of the English count nouns. A count noun without -s has the value +sing) and with -s has the value (-sing) of the feature 'number'. For example:

- 27 a) [cat + Ø], Ø= the singular marker  
b) [cat + s], s= the plural marker

The same procedure applied to the Italian pronominal adverbs:

- 28 a) [Ø+ ora], Ø= the (+prox) marker  
b) [all-ora], all= the (-prox) marker

The element -ora is probably a pronominal morpheme referring to 'time' encoding the feature 'person' as assumed.

que- (cf., 26 (b)) represents the pronominal element in demonstrative pronouns, encoding the feature 'person'. The elements to the left of the hyphen, which is mine, in 26 (b) (i-viii) encode the features 'number', 'gender' and 'proximate'. The elements -st- and -ll- encode the values (+prox) and (-prox) of the feature 'proximate' respectively. The features 'number' and 'gender' seem to intersect in the elements -o- (s,m), -a- (s,f), -i- (pl, m) and -e- (pl, f). Overlap of functional features is not an unusual phenomenon in natural languages, although the feature 'number' might be more deeply inherent in the human linguistic system than the feature 'gender' because most if not all languages have number distinctions whereas the distinction between masculine and feminine is limited or missing in some languages.

We shall now investigate data from French and then from Hebrew. Before we introduce the examples, some relevant information and facts about French demonstratives should be made clear. When the French demonstrative elements cette / cet occur before nouns they do not encode any sort of distance distinction, i.e., they are neuter with respect to the feature 'proximate'. To encode this feature the suffixal elements -ci/ -ce "here" or -là "there" are used after the noun to indicate what is close to or far away from the speaker respectively. In other words, the elements -ci and -là encoding the two values of the feature 'proximate' appear at a different syntactic position separated from the demonstrative pronoun by the lexical noun. Consider the following examples:

- 29 a) Pronominal adverbs  
(i) ici 'here'  
(ii) là 'there'
- b) Demonstratives  
(i) ce livre-ci / là  
this,s book-here/-there  
"this/ that book"  
(ii) ces livres-ci / -là  
these-pl books-here / there  
"these / those books"  
(iii) cet homme-ce /-là  
this,s,m man-here / -there  
"this/ that man"  
  
(iv) cette femme-ce / -là  
this,s,m woman-here /-there  
"this/ that woman"  
(v) cettes femme-ce / -là. "these/ those women"
- (c) Demonstratives as pronouns  
(i) celle-ci / -là  
"this / that (one)"  
(ii) celles-ci / ceux-ci  
"these (ones)"  
(iii) celles-la /ceux-là  
"those (ones)"  
(iv) ce-ci /ce-là  
"this / that"

These examples show that the elements encoding the feature '*proximate*', i.e., -ci/-ce and là attaching to the noun as suffixes, are separated from the '*determiner*' in which the rest of the features are encoded (cf., 29 (b))

The elements to the left of the noun, i.e., ce, ces, cet, cette and cettes, encode the features '*person*', '*number*' and '*gender*'. Compare ce/ cette (sing.) to ces/ cettes (plural) and cet (masc.) to cette (fem.) in 29 (b).

When demonstratives are used as pronouns as shown by examples 29 (c), the elements encoding '*proximate*' appear hyphenated with them e.g., ce-ci "this", ce-là "that".

Hebrew demonstrative give more support to our discussion circulating around the symmetry between morphological structure and 'functional' features. Recall that the element ha is the canonical definite article in Hebrew just like the Arabic al- and the English the. Consider the following examples:

- 30 a) ha-yeled  
the-child (m)  
b) ha-yeladim  
the-children (m)  
c) ha-yalda  
the child (f)  
d) ha-yeladot  
the-children (f)

Notice that the determiner ha- "the" does not encode any feature but '*definite (+def)*'. Other features like '*number*' and '*gender*' are realised as affixes on the lexical head, the noun. Now consider demonstrative pronouns in Hebrew<sup>(14)</sup>.

- 31 a) Proximate  
(i) ha-zeh "this, m"  
(ii) ha-zot "this, f"  
(iii) ha-ele "these"  
b) Non-proximate  
(i) ha-hu "that, m"  
(ii) ha-hi "that, f"  
(iii) ha-hem "those, m"  
(iv) ha-hen "those, f"

The element ha- encodes the feature '*definite*'. The elements to the right of the hyphen encode the features '*person*', '*number*' and '*gender*'. The contrast between (a) and (b) in 31 reflects the two values of the feature '*proximate*'. For example, the element -zeh in 31 (a) (i) encodes the



(ii) *Second person:*

an-t-a,    an-t-i    an-tu-ma,    an-tu-m    an-tu-n  
 -20s,m    -2-s,f    -2-dual    -2-pl,m    -2-pl,f

(iii) *Third person:*

hu-wa,    h-ia,    hu-ma,    hu-m,    hu-n  
 3-s,m    3-s,f    3-dual    3-pl,m    3-pl,f

b) Objective pronouns:

(i) *First person:*    n-i,    n-aa

1-s    1-pl

(ii) *Second person:*    k-a,    k-i,    ku-ma,    ku-m,    ku-n  
 2-s,m    2-s,f    2-dual    2-pl,m    2-pl,f

(iii) *Third person:*    h-u,    h-a,    hu-ma,    hu-m,    hu-n  
 3-s,m    3-s,f    3-dual    3-pl,m    3-pl,f

c) Possessive Pronouns:

(i) *First person:*    ii,    n-aa

1    1-pl

(ii) *Second person:*    k-a,    k-i,    ku-ma,    ku-m,    ku-n  
 2-s,m    2-s,f    2-dual    2-pl,m    2-pl,f

(iii) *Third person:*

h-u,    h-a,    hu-ma,    hu-m,    hu-n  
 3-s,m    3-s,f    3-dual    3-pl,m    3-pl,f

Notice that the boundaries between elements encoding various functional features are marked by hyphens. These divisions are based on Georgi Zedan remarks<sup>(15)</sup> (cf., Zedan, 1987 pp.122-30).

The element n encodes the feature 'person' in almost all first person subjective, objective and possessive pronouns(16) (cf., (i) in 32 (a), (b), (c)). The feature 'person' is encoded in the elements t in subjective second person pronouns, and k in objective and possessive second persons pronouns and finally in the element h in all third person pronouns (cf., 32).

We are left with two features '*number*' and '*gender*'. In Arabic pronouns, the feature '*number*' is represented by the singular, dual and plural markers. The feature '*gender*' is represented by the masculine and



feminine markers. However, there are cases where the features 'number' and 'gender' intersect in one element, e.g., ma=(dual,m'f), m-(pl,m) and n=(pl,f). This point would take us to the opposite direction and lead to the assumption that functional features- in this case some of them- are inseparable at the phonetic level. But in lexical nouns number and gender are represented by distinct markers. Consider the following examples from Arabic:

- 33 a) muGallim-aa-t  
teacher- pl-f  
"female teachers"  
b) kaatib-aa-t  
writer-pl-f  
"female writers"

33 (a) and (b) show that the features 'number' and 'gender' are encoded in distinct elements in the morphology of Arabic lexical nouns, i.e., aa encodes 'number' and t encodes 'gender'. Ritter made a similar observation on Hebrew number and gender markers (cf., Ritter, 1991).

One can speculate concerning this matter and say that the elements m and n, in 32, were only markers for only one feature in early Arabic pronominal system<sup>(17)</sup>. A vocalic element, probably similar to aa in 33, might have been used to encode the other feature in the early Arabic pronominal system. There are clues to support this speculation; for example, the two values of the feature 'gender' are encoded in vocalic change, e.g., a (m), i (f); ua (f); u (m), a (f) (cf., 32 above).

The last point we tackle is the initial element an in second person subjective pronouns (cf., 32(a) (ii)). According to Georgi Zedan (ibid.) the element an encodes the feature 'definite'. He based his assumption on two facts: first, the element an is historically a Semitic definite article like the Arabic al. Then he speculates that an could have been used in early Arabic as a definite article modified later to al by phonological rules. Second, in Syriac all personal pronouns except those of the third person begin with a silent an. Georgi Zedan then speculates that an might have been used with all personal pronouns in Semitic languages before it

was finally lost. The element an in some Arabic pronouns (cf., 32 (a) (ii)) and the silent an in Syriac pronouns might be residues of all full paradigm in which the feature 'definite' was encoded in pronominal system (cf., Zedan, 1987 p. 125).

In conclusion, many examples from various languages are showing that functional features such as 'person', 'definite', 'number', 'proximate' ...etc. are encoded in distinct and separable elements in the morphology of determiners. In the following section we seek some clues in structures larger than the word.

#### IV- THE SYNTAX OF DETERMINERS

This section is not meant to give a comprehensive syntactic account of determiners but rather devoted to a search for syntactic evidence supporting the main theme of this article.

Let us first clear away some of misconceptions associated with determiners. The first point here is that words that do not encode functional feature/ features are lexical words; nouns or adjectives wrongly classified as determiners, e.g., some quantifiers. Ouhalla, for example, claims that quantifiers do not form a separate syntactic category. They are nouns that can assign Gen-Case to the nominal phrase they modify (cf., Ouhalla, 1988 pp.210-5).

There are important observations verifying Ouhalla's assumption. Some Arabic quantifiers appear with the definite/ indefinite articles al- / n other quantifiers do no. Consider the following examples:

- 34 a) kul-u      al-rijaal-I      qaal-u      naGam  
         all-nom   the-men-gen   said-pl      yes  
         "all men said 'yes'"
- b) al-kul-u      qaala      naGam  
         the-all-nom   said      yes  
         "all of them said 'yes'"

- 35 a) kul-u rajul-i-n qaa naGam  
 every-nom man-gen-indef said yes  
 "every man said 'yes'"  
 b) kul-u-n qaala naGam  
 every-nom-indef said yes  
 "everyone said 'yes'"
- 36 a) aHad-u al-rijaal-I qaala naGam  
 one-nom the-men-gen said yes  
 "one of the men said 'yes'"  
 b) aHad-u-n qaala naGam  
 one-nom-indef said yes  
 "someone said 'yes'"  
 c) la aHad-u-n qaala naGam  
 no one-gen indef said yes  
 "no one said 'yes'"  
 d) ayy-u fikrat-i-n  
 any-nom idea-gen-indef  
 "any idea"

Notice that the nominative case marker u appears in the morphology of kul-u "all/every" and aHad-u "one" in examples 34 (a), 35 (a), and 36 (a). In the same examples, the nouns following kul-u and aHad-u bear the genitive case marker i, e.g., al-rijaal-i and rajul-i-n (b) examples in 34, 35, and 36 show the canonical definite/ indefinite articles al and -n attaching to words classified as determiners. These three properties are usually associated with nominal lexical items in Arabic. In other words, only nominal words appear with case markers like u, a and i; and with definite/ indefinite articles. Finally, only genuine nouns and prepositions assign Gen-case in Arabic, so that the noun phrases following them appear with genitive case markers, e.g., i. All these facts confirm Ouhalla's intuitions.

In 36 (c) the element la "no" precedes the word aHad-u-n "one" and does not display any case marker. The word following it does not appear with genitive case marker. In 36 (d) the element ayy-u "any" bears the case marker u and the word following it appears with a gen-case marker

and the indefinite article -n. The element ayyu differs from la in that it bears a case marker whereas la does not; and it differs from kul in that it only takes an indefinite article n whereas kul takes both articles probably because ayy inherently encodes the feature '*definite -def*'.

Suppose we assume that the words kul, aHad-un and ayy are functional elements encoding the feature '*quantity*', the elements al and n attaching to them encode the two values of the feature '*definite*' (cf., 34, 35, 36). Each of al-kul, aHad-un and ayy-un encodes the features '*definite*' and '*quantity*'; hence such words are manifestations of these two features. This would be a welcomed conclusion but other issues concerning case markers are problematic. It would be appropriate if more data from different languages are explored.

Some words classified as determiners in English and French behave similarly to adjectives or noun modifiers in Arabic. For example, in English determiners, adjectives and noun modifiers precede the noun they modify. German is very similar to English. In Arabic, adjectives follow and copy the features of the noun they modify. Noun modifiers follow but do not copy the features of the noun they modify. French adjectives and noun modifiers follow but both do not agree with the noun they modify. Consider the following examples:

- 37 a) The Red Cross. (English)  
b) The Red Sea.
- 38 a) Rote(s) Kreuz. (German)  
b) das Rote Meer.
- 39 a) Croix – Rouge. (French)  
b) La mer Rouge.
- 40 a) le alte montagne (Italian)  
the high mountain  
b) le persone oneste  
the people honest  
c) una bella ragazza  
a beautiful girl

- 41 a) al-sayyid-at-u      al-jamiil-at-u (Arabic)  
the-lady-f-nom      the-gorgeous-f-nom  
“The –gorgeous- lady”  
b) al-saliib-u      al-aHmar  
the-cross-nom,m the-red  
“the Red Cross”

In English and German, adjectives precede the noun they modify and follow determiners in nominal constructions as illustrated in 37 and 38. Arabic and French adjectives follow the noun they modify as shown in examples 39 and 41. Arabic adjectives differ from French adjectives in that they copy the nominal features \_ definite, number, gender and Case\_ of the noun they modify (cf., 41).

In Italian, adjectives usually follow the noun they modify as in example 40 (b) but some adjectives precede the noun they modify as in examples 40 (a) and (c)<sup>(18)</sup>. In both cases adjectives agree with the noun they modify in number both cases adjectives agree with the noun they modify in number and gender (cf., 40).

In Arabic nominal constructions ‘genuine’ determiners behave differently from adjectives and noun modifiers that are wrongly classified as determiners in English, for example. Consider the following Arabic nominal constructions:

- 42 a) kulu      ha-awlai      al-rijaali  
all      those      the-men  
“all those men”  
b) baGdu      ha-awlai      al-rijaali  
some      those      the-men  
“some of those men”
- 43 a) al-usbuG-u      al-qaadim-u  
the-week-case,m      the-next-case,m  
“the next week”  
b) al-rajul-u      al-akhar-u  
the-man-case,m      the-other-case,m  
“the other man”

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- c) al-rijaal-u                      al-akhar-uun  
the-men-case,m                      the-other-case,m  
“the other men”
- 44 a) rijaal-u-n                      kathiir-uun  
men-case,indef                      many-case,pl  
“many men”
- b) (maà-u-n) /                      qaliil-u-n /                      (min al-maà)  
water-case-indef                      little-case-indef                      of the-water  
“little water / some water”

‘Genuine’ determiners in Arabic such as the underlined words in 42 (a) and (b) always precede the noun they modify<sup>(19)</sup> (But see 34-36). The words al-qadim “the next”, al-akhar “the other” and qaliil “little” would be classified as determiners if we base our judgement on English data, but in Arabic examples 43 and 44 they behave like ‘genuine’ adjectives. They agree with the noun they modify in definiteness, number, gender and morphological case, i.e., copy its features. Given these facts I claim that the underlined words in 43 and 44 are genuine adjectives in both Arabic and English and therefore should be excluded from the determiner set.

Numerals are usually classified as determiners, but when we analyse Arabic cardinal numbers, multipliers and words equivalent to the English ‘double’ and ‘half’, we find out that they behave like nouns whereas ordinal numbers behave like adjectives. Consider the following examples:

- 45 a) rajul-u-n                      waHid-u-n  
man-case-indef                      one-case-indef  
“one man”
- b) rajul-aan  
man-dual  
“two men”
- c) thalathat-u                      rijaal-i-n  
three-case                      men-gen-indef  
“three men”
- d) kul-u                      al-rijaal-I                      al-thalathat-i

- all-case    the-men-gen    the-three-gen  
 "all the three"
- 46 a) kul-u                    al-thalathat-i  
 all-case                    the-three-gen  
 "all the three"
- b) diGf-u                    al-mablagh-i                    / al-diGf-u  
 double-case    the-amount-gen    the-double-case  
 "double the amount/ the double"
- c) nisf-u                    al-mablagh-i                    / al-nisf-u  
 half-case                    the-amount-gen    / the-half-case  
 "half the amount/ the half"
- 47 a) al-Hisan-u                    al-thaalith-u  
 the-horse-case                    the-third-case  
 "the third horse"
- b) al-Hisan-aan                    al-awwal-aan  
 the-horse-dual                    the-first-dual  
 "the first two horses"
- c) al-sana-t-u                    al-raabiGu-t-u  
 the-year-f-case                    the-four-f-case  
 "the fourth year"

Cardinal numbers in Arabic occur in two positions. They either precede or follow the noun they describe as shown by examples 45 (a) and (d). In these two examples the numeral waHid-u-n "one" and al-thalatha-t-I "three" follow the nouns they modify and agree with them in definiteness, number, gender and morphological case. In this, cardinal numbers behave as adjectives. In 45 (c), the cardinal number thalathat-u "three" precedes the noun it modifies. The noun following it appears with the genitive case marker i, which attaches to nouns receiving Gen-Case from nouns or prepositions. In other words, thalathat-u "three" behaves as a noun in this position and assigns Gen-Case to the noun following it as shown by the genitive case marker. Duality in nominal constructions is realised morphologically on the head noun as shown in 45 (b). For example the following example is ungrammatical in Arabic:

- 48 \*rijaal                    ithnaan  
 men                    two

“two men”

The words al-thalathat-i “the three” in 47 (a), diGf-u “double” in 47 (b) and nisf-u “the half” in 47 (c) look like genuine nouns in all respects. For example, they bear the case markers u/i, appear with the definite article al- and the noun phrase following them bears the genitive case marker -i. These three nominal properties indicate that words wrongly classified as determiners are in fact genuine nouns.

In 47 9a) and (b), ordinal number, like adjectives, follow the noun they describe and copy its nominal features such as: definiteness, number, gender and morphological case.

To sum up, Arabic data illustrate that some words recognised as belonging to the determiner set, such as cardinal and ordinal numbers, multipliers,...etc. seem to be rather genuine adjectives and/ or nouns.

Samples taken from German, French and Italian data show that our analysis is on the right track; consider the following examples:

49 (a) Ein halbes Dutzend (German)  
“half a dozen”

(b) Doppel Betrag  
“double the amount”

(c) Das nächste Mal  
the next time  
“the next time”

(d) drei Handtücher  
three handkerchiefs  
“three handkerchiefs”

(e) Das Erste Pferd  
the first horse  
“the first horse”

50 (a) une demi-douzaine (French)  
“half a dozen”

(b) le double de....



- the double of  
“double (sth)”.
- (c) la moitié de..  
“half (of) ...”
- (d) de cinq dollars  
“five dollars”
- (e) des premières épreuves  
“the first drafts”
- (f) le jour prochaine  
the year near  
“the next year”
- 51 (a) mezzo Secolo (Italian)  
half century  
“half a century”
- (b) un mese  
one month  
“a month”
- (c) dodici mesi  
twelve months  
“twelve months”
- (d) Il terzo cavallo  
the third horse  
“the third horse”
- (e) al quarto anno  
the fourth year  
“the fourth year”

It has been shown by examples given in 37 and 39 that in both English and German adjectives precede the noun they modify. Determiners also precede the noun they modify in these languages. In 50, the words halbe “half”, Doppel “double”, nächste “next”, drei “three” and Erste “first” precede the nouns they modify and follow ‘genuine’ determiners in nominal constructions. Genuine adjectives occupy this position in German and English. I claim that the above-mentioned words are not determiners but adjectives or noun modifiers.

In 51 (b) and 9c) double and moitie "half" are nouns as they are preceded by an article and followed by a de-phrase. In 51 (a), (d), (e) and (f), the words demi "half", cing "five" and premiers "first" occur between the noun they modify and definite articles. This is rather unusual position for adjectives in French. As shown by examples in 38 and 51 (f), adjectives in French follow the noun they modify. Perhaps the words demi, cing and premiers are not adjectives but nouns. If they were nouns, the nouns following them douzaine, dollars and epreuves would be in a de-phrase. This is true in Arabic as we say khamsatun min al-dularat "five dollars" where min literally means from /of/ or de. Suppose that demi, cing and premier and similar words are nouns. And suppose that nouns following them are noun modifiers. Then there will be no need for putting them in a de-phrase as if they were adjectives. This is also true in Arabic as we can say khamsatu dularatin "five dollars". Alternatively, they are taken as 'extraposed' adjectives<sup>(20)</sup>.

Italian is similar to French in that adjectives follow the noun they modify. Some adjectives in Italian precede the noun they modify as noted in Universal 19 of Greenberg (cf., Greenberg, 1963: p.86). Italian examples in 51 above show that the words mezzo "half", un "one", dodici "twelve", terzo "third" and quarto "fourth" occur in between the definite article and the noun they modify. There are three options in which these words are classified. First, to classify them as determiners; but this classification will go into difficulties. According to the orthodox definition determiners are function words that lack lexical meaning. But these words in Italian and other languages do have lexical meanings as they refer to a number, part of a number or to a rank rather than referring to a functional feature. In this case we are left with two options; to classify them as nouns and/or adjectives. If either option is adopted, the same line of analysis followed in dealing with French data applies to Italian.

This discussion means that the positions of 'determiners' in the ordinary sense, adjectives and probably noun modifiers in nominal phrases are related. This relationship is expressed by Universal 18 of

Greenberg which states that when adjectives precede nouns in nominal phrases, demonstratives and numerals do likewise (cf., *ibid.*).

In conclusion, these generalisations apply to Arabic except that adjectives and noun modifiers never precede the noun they modify. Adjectives, but not noun modifiers, always copy the features of the noun they modify. What is referred to as 'genuine' determiners always precede the noun they modify in Arabic and probably in all head-initial languages. In English and German determiners, adjectives and noun modifiers always precede the noun they modify. French and Italian are similar to Arabic, English and German with respect to the position of 'genuine' determiners. Although the canonical position of adjectives and noun modifiers in French and Italian is similar to Arabic, after the noun they modify, there are some adjectives and nouns precede the noun they modify in accordance with Universal 19 of Greenberg (cf., *ibid.*). Some of these adjectives and nouns, we claim, are wrongly classified as determiners.

We are left then with what I have called 'genuine' determiners. It has been shown that these categories are complex in two-fold: they encode functional features, and each feature is represented by a phonetically identifiable/ unanalysable element. The following examples from Arabic and French show that lexical items sometimes occur between these elements confirming their status as independent categories. Consider first these examples from Arabic:

- 52 a) ha-tha    ana/ huwa/ anta  
      def-this    I/ he            / you  
              "here I am/he is/you are"
- b) ha    and/ huwa/ anta    tha  
          def    I    / he    / you    this  
              "Here I am/ he is/ you are"
- c) ha    huwa    tha    jaà  
          def    he        this    came  
              "Here he comes"

In 52 (a) the element ha-tha "this" is one word consisting of ha- and tha- as we have explained in section three above. Examples 52 (b) and (c) illustrate that ha- and tha- are separable at the syntactic level as personal pronouns occur in between ha- and tha-. In other words ha- and tha- are two independent entities and therefore could be realised as distinct functional categories.

Another clue comes from French demonstratives, consider examples given in 29 and repeated here:

- 53    a) celle-ci            "this one"  
      b) delle-là            "that one"  
      c) ce livre-ci        "this book"  
      d) ce livre-là        "that book"

As we see in the example above the elements -ci and là representing the values of the feature '*proximate*' are realised as affixes into celle in 53 (a) and 9b), and into the modified noun livre in 53 (c) and (d). The feature '*proximate*' is represented by independent elements at the syntactic level and therefore should be recognised as an independent category.

The third clue comes from Hebrew data given in examples 30 and 31 in section three. In these example the definite article ha- appears in two different syntactic positions. It appears as a prefix attaching to lexical nouns and demonstrative elements. In both cases ha- encodes the feature '*definite*' (cf., 30 and 31).

Given these facts, we conclude that functional features, such as '*person*', '*number*', '*gender*', '*definite*' and '*proximity*' encoded in identifiable/ separable linguistic expressions are better recognised as '*primitive*' functional categories of Grammar.

## V- CONCLUSION

It has been shown that some words are wrongly classified as determiners are either nouns or adjectives. Genuine determiners such as

articles, demonstratives, pronominal adverbs and some quantifiers are complex words, in the sense that in many cases they encode more than one functional feature.

The theme of this discussion is that the 'determiner' does not constitute an autonomous syntactic category as it encodes functional features, such as '*person*', '*number*', '*gender*', '*definite*' and '*proximate*' ...etc. These features are themselves to by syntactic functional categories.

It has been argued that the determiner is not a 'primitive' syntactic category. A standard syntactic category must be simple and unanalysable into further (primitive) entities. This idea was first introduced in Chomsky LSLT as a condition on grammatical categories, and a requirement of 'Optional Grammar' (cf., Chomsky, 1975).

It has been shown that 'genuine' determiners encoding various features are morphologically complex, where each element of a determiner encodes in almost all cases a single feature. There is, however an overlap between the features '*number*' and '*gender*' in one or two cases.

Some examples from Arabic, French and Hebrew show that parts of a determiner encoding functional features appear in different places in nominal constructions.

Bases on these observations, an articulated approach towards the category 'determiner' has been suggested. Elements of the determiner set encoding functional features are themselves to be heads of their own phrases. The category 'D' decomposes into other 'primitive' functional categories in natural language, e.g., '*Person Phrase*' '*Number Phrase*', '*Gender Phrase*', '*Definite Phrase*', '*Proximate Phrase*'. ...etc. I have suggested that the concept of '*person*' should be widened to include features referring to '*time*', '*space*' and '*demonstrating*' (or probably all substantive elements in language).

There are three methods in which suggestions proposed here be accommodated in Syntactic Theory. First, assuming a strong lexicalist hypothesis, morphologically complex words encoding functional features are formed via morphological rules operating in the lexicon (cf., Chomsky, 1970, 1989; Anderson, 1982; Jackendoff, 1975; Jensen and Jensen, 1984 and many others). It is difficult to establish functional features as independent syntactic functional categories with this method. However, it might be possible to select the dominant feature encoded in the 'determiner element' as the head category. Alternatively, one may assume some kind of lexico-syntactic mechanisms that allow syntactic representations to incorporate into the lexicon (e.g. Starosta, 1988; Brody, 1995). This approach is still to face facts introduced in section four.

A more convenient method would assume a theory with a 'weak' lexicalist hypothesis. In the theory of syntactic incorporation affixes are taken as independent entities that project as heads of their own phrases at DS. At a later level, SS, they come together following a head-to-head movements; instances of the generalised Transformational Principle Move-Alpha (cf., Baker, 1988; Ouhalla, 1988; Alharbi, 1990, 1994, 1995; and many others).

This method is well-established in the Syntactic Theory and has been confirmed by countless examples from many languages. Consider the following:

54 a) DS; the elements X, Y, Z project as heads:

[<sub>xp</sub> spec [<sub>x</sub> X [<sub>yp</sub> spec [<sub>y</sub> Y [<sub>zp</sub> spec [Z' Z]]]]]]

b) SS, after head-to-head movement:

[<sub>xp</sub> spec [<sub>x</sub> Z-Y-X [<sub>yp</sub> spec [<sub>y</sub> t [<sub>zp</sub> spec [Z' ]]]]]]

54 (a) is the D-structure representation of XP, YP and ZP. The elements X, Y, and Z project as independent heads at DS. The relationships between these categories are determined by their properties of functional selection in the sense of Ouhalla, 1988. For example, if X, Y, and Z are elements in a determiner encoding more than one feature so that each element stands for a feature, an element W encoding the feature 'W'

does not appear in the actual morphology of the determiner, then we simply assume that it does not project (Ouhalla, 1988).

In 54 (b) the head element Z at the bottom of the structural hierarchy moves to the head of the first phrase dominating it, i.e., Y. Then the complex Z-Y moves to the head of the highest phrase, i.e., X. Head movement is triggered/ motivated by morphological requirements of head affixes.

In latest developments in Grammatical Theory, syntactic levels such as DS and SS and principles associated with them have been suspended (cf., Chomsky, 1993, 1994). This shift will certainly undermine the theory of head-movement because it eliminates the relevant syntactic levels. An independent Morphological Component (MC) in the sense of Chomsky (1994) constitutes an alternative to 'syntactic affixation'. Great deal of study is needed to establish a Morphological Component capable of incorporating morphological facts without sacrificing the spirit of the Minimalist Program.

The MC can be thought of as an interface system of morphological schema in which morphological requirements of X-zero elements are satisfied and checked through some kind of well-formedness conditions of a highly general nature. The output enters into the Phonological Component (PF). The MC may be realised as equivalent to Morphology Theory in the sense of Baker (1988) and perhaps encompass the principles such as the Stray Affix Filter and the Affix Principle (cf., Baker, 1988; Ouhalla, 1988; Alharbi, 1990, 1994).

#### **vi- IMPLICATIONS FOR LANGUAGE LEARNABILITY**

It has been proposed in this article that the category 'D' should be replaced by functional features encoded in identifiable phonetic entities of the determiner set. Some of these features are given in (4) in section one above and repeated here for convenience as 55:

- 55    a) Proximate (+/- prox.)  
      b) Definite (+/- def.)  
      c) Person (+/- 3<sup>rd</sup>.)

- d) Number (+/-sing.)
- e) Gender (+/-masc.)
- f) Quantity (+/-quan.)
- g) Case (+/ nom.)
- h)... .. etc.

These features are to be taken as independent functional categories that will replace the 'D' category for reasons given in sections two, three, four and five. If our assumptions are on the right track, children should be aware of the properties of such categories at a certain stage of their linguistic-cognitive development; namely, the stage where items encoding these categories appear in child speech with their morphosyntactic and referential properties (Radford, 1990).

Radford distinguishes two stages of grammatical development in child's grammars: *the lexical-thematic stge*, (20 months +/- %20). At this stage thematic argument structures are directly mapped into lexical syntactic structures. The child shows no sign of awareness of the properties of functional categories. The second stage is *the functional-nonthematic stage*, (24 months +/- - %20). At this stage the child gradually acquires a grammar similar to adult grammar where functional categories play an essential role (ibid.).

According to Radford (ibid.) the early models of child grammar have the following characteristics:

- 56
- a) lexical-thematic.
  - b) lack D-system.
  - c) lack C-system.
  - d) lack I-system.
  - e) lack Case-system.
  - f) appear with missing arguments 'elliptical' (ibid.: Ch. 4-8).

All *the lexical-thematic stage* some pronouns and demonstratives appear in child speech not as determiners but as uninflected caseless pronominal NPs; because children never combine them with nominals (ibid.:100-1; and examples 26 there).



At *the functional-nonthematic stage* children manipulate functional-nonthematic structures as they begin to acquire the following items (adopted from Radford, 1990: 276):

- 57 a) A set of referential/ quantification determiners:  
(this/ that, the/ a, another, some, any, all,...(21).  
b) Possessive determiners:  
(as in Daddy's/ my/ yours,...).  
c) A set of pronominal determiners: (this/ that/ it/  
he/ she/ they/ ...)  
d) A case-system (e.g., I/ me contrasts).

Radford made a distinction between two types of acquisition: *item acquisition* and *category acquisition*. A lexical item can be acquired at any *stage* whereas the acquisition of a grammatical category is determined by the category type. The child begins categorising lexical items at *the lexical-thematic stage*. It is only at *the functional-nonthematic stage* that the child starts to recognise properties of functional categories. The translation between *the two stage* is a matter of maturation, argues Radford (ibid.: 290).

It seems that the two stages of linguistic development suggested by Radford are contingent on the overall development of human cognitive systems in which language is unique. Cognitive development occurs in successive stages, such as those described by Jean Piaget. If this is correct, principles of UG could be related to the *Laws of organization* in Cognitive Psychology (cf., Piaget, 1981) Rep.). Mental/ cognitive development is contingent on biological developments in the human body particularly those that happen in the brain, nerves, perception and glands systems. The theory of development through *stages* is well-founded. For examples, in their linguistic development, children produce *acategorical* speech before they move to the two categorical stages mentioned above (cf. Radford, 1990).

Features like those in 55 above assumed as *functional categories* replacing the category 'D' in this study, should not be understood as semantic classes or conceptual features. According to Radford child

speech is organized entirely of grammatical categories and grammatical relations (cf., *ibid.*; 38-9). This is exactly the aim we have maintained in this study. By adopting an articulated theory of 'D', introducing primitive functional categories with the least variant properties in the languages investigated, the link between language faculty and other cognitive systems could be soon uncovered. Some steps should be taken in the same direction before the whole picture becomes complete. Other functional categories such as Complementisers, Modals and probably Prepositions could be explored in the same manner.

For first language acquisition learnability effort reduces to nil, because children acquire *items* before they become aware of their categorical properties. *Category* acquisition is a matter of time. For second or foreign language acquisition learnability efforts reduces to morphological properties. Other properties could either be innate or transferable from the learner's language with the least effort. The last statement still needs further study.

**NOTES**

(a) Some quantifiers in Arabic such as kul "all" and baGd "some" follow the quantified NP in certain structures such as those with Floating Quantifiers. Consider the following examples:

- a) i- kulu al-awlaadi  
all the-boys  
"all the boys"  
ii- al-awlaadu; kulu-hum;  
the boys all-them
- b) i- baGdu al-alawlaadi  
some the-boys  
"some of the boys"  
ii- al-awlaadu; baGdu-hum;  
the boys some-them  
"some of the boys"

In (a)i and (b)i the quantifiers kul and baGd occupy the normal position of quantifiers in nominal constructions. In (a)ii and (b)ii the same

quantifiers are in Q-Float Constructions. In this case an agreement element "a clitic" attaches to the floating Q encoding the nominal features of the preceding quantified NP. We shall not discuss these constructions here. I refer the interested reader to Sportiche, 1988 on Floating Quantifiers in English and French.

(2) Constructions such as al-rajulu hatha "literally = the man this" are grammatical in Arabic. In these cases demonstratives are used emphatically.

(3) See fn. 1 above.

(4) Even AGR elements are complex. We shall discuss this issue later. See also Ritter, 1995.

(5) For more interesting discussions are Amayrah, I., 1987: 69-71; and Gary, 1934: 65-6.

(6) The feature 'demonstrative' is encoded in pronominal elements that refer to a person/ persons, a thing/ things, place or time. Therefore I shall take the feature 'demonstrative' as an instance of the feature 'person'.

(7) There are some attempts to categorise determiners as Adjectives, e.g., Simpson, 1982. See Radford, 1992: Ch. 3 for an elaborate discussion.

(8) I am very grateful to Dr. Ahmed Hammas for his help in formulating this equation and for his constructive comments on several issues on Mathematical and Logic.

(9) See fn. 6 and also Lyons, 1968, 279.

(10) Details concerning morphological/ phonological aspects irrelevant to the discussion at hand will be ignored, e.g., the /s/ in this which changes to /z/ in these.

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(11) This observation may also reflect a deeper difference between Indonesian and Urdu in the value of the head-parameter.

(12) The example words in 26 are not hyphenated in normal writing in Italian. The hyphen in these words are only used for purely illustrative purposes.

(13) See fn. 12.

(14) Hebrew examples in 31 are taken from Lyons, 1968.

(15) This study was first published in 1886, and reprinted later in 1904, 1923 and 1987.

(16) The only exception is the first person singular in possessive case, which will have no effect on our generalization here.

(17) The /m/ and /n/ sounds are both nasals. The original element may be an /m/. Notice also that in Hebrew the feature 'number' is encoded in a similar element in the morphology of lexical nouns, i.e. im.

(18) There is a limited number of Italian adjectives that precede to noun they modify. In these cases the article preceding the adjective is determined not by he modified noun but the adjective:

- |     |     |           |         |
|-----|-----|-----------|---------|
| i)  | il  | quadro    |         |
|     | the | picture   |         |
| ii) | lo  | splendido | quadro  |
|     | the | splendid  | picture |

see Cagno, 1970 Repr.: 199, 212-4.

(19) See fn. 1.

(20) The element demi- in 49 (a) looks like a prefix attaching to the noun if modifies. One may argue that this element and similar adjectives and nouns that precede modified nouns could be generated at a post-nominal

position at DS. At SS they move to a pre-nominal position for reasons related to properties of AGR in these languages, perhaps.

(21) Piaget, 1981 Repr.: 127-8 notes that children aged 2-3 years are unable to distinguish between 'all' and 'some.'

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