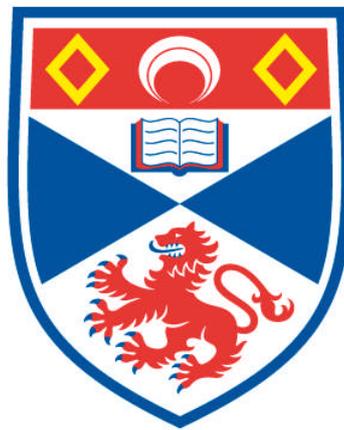


**THE ARABIC VERB:
FORM AND MEANING IN THE VOWEL-LENGTHENING
PATTERNS**

Warwick Danks

**A Thesis Submitted for the Degree of PhD
at the
University of St Andrews**



2010

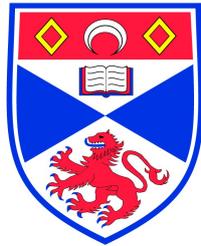
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The Arabic verb:
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in the
vowel-lengthening
patterns



University
of
St Andrews

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Submitted 22 September 2009
for the degree of
Doctor of Philosophy

Abstract

The Arabic verb: Form and meaning in the vowel lengthening patterns

The research presented in this dissertation adopts an empirical Saussurean structuralist approach to elucidating the true meaning of the verb patterns characterised formally by vowel lengthening in Modern Standard Arabic (MSA).

The verbal system as a whole is examined in order to place the patterns of interest (III and VI) in context, the complexities of Arabic verbal morphology are explored and the challenges revealed by previous attempts to draw links between form and meaning are presented. An exhaustive dictionary survey is employed to provide quantifiable data to empirically test the largely accepted view that the vowel lengthening patterns have mutual/reciprocal meaning. Finding the traditional explanation inadequate and prone to too many exceptions, alternative commonalities of meaning are similarly investigated. Whilst confirming the detransitivising function of the *ta-* prefix which derives pattern VI from pattern III, analysis of valency data also precludes transitivity as a viable explanation for pattern III meaning compared with the base form.

Examination of formally similar morphology in certain nouns leads to the intuitive possibility that vowel lengthening has aspectual meaning. A model of linguistic aspect is investigated for its applicability to MSA and used to isolate the aspectual feature common to the majority of pattern III and pattern VI verbs, which is determined to be atelicity. A set of verbs which appear to be exceptional in that they are not attributable to atelic aspectual categories is found to be characterised by inceptive meaning and a three-phase model of event time structure is developed to include an inceptive verbal category, demonstrating that these verbs too are atelic.

Thus the form-meaning relationship which is discovered is that the vowel lengthening verbal patterns in Modern Standard Arabic have atelic aspectual meaning.

To my late mother

Mavis Florence Danks (1922-1999)

and my late grandmother

Emma Louise Williams (1891-1982),

for their strength, patience and unswerving faith in me.

Contents

Acknowledgments	vii
Notes on symbols, abbreviations and other conventions followed in examples	ix
Chapter 1: Introduction	1
1.1 Saussurean structuralism	3
1.1.1 The linguistic sign	3
1.1.2 Language as a system	4
1.2 Beedham's method of lexical exceptions	6
1.2.1 Principles	6
1.2.1.1 Unexplained exceptions are indicative of incorrect analysis	6
1.2.1.2 From form to meaning	7
1.2.1.3 Synchronic basis	8
1.2.1.4 The Hegelian triad and scientific method	12
1.2.2 An attempt to apply the method	13
1.2.2.1 Phase 1: choose a formal construction	13
1.2.2.2 Phase 2: identify the problems, anomalies, contradictions, etc.	14
1.2.2.3 Phase 3: identify unexplained lexical exceptions	15
1.2.2.4 Phase 4: identify the properties of the exceptions	16
1.2.2.5 Phase 5: what might lead to the exceptions?	16
1.2.2.6 Phase 6: the semantic phase	17
1.3 A fresh approach	17
1.4 Further methodological considerations	19
Chapter 2: Verbal morphology and the lexicon	21
2.1 Arabic verbal morphology	22
2.1.1 Inflectional morphology	23
2.1.2 Derivational morphology	25
2.1.2.1 'Bilateral verbs'	25
2.1.2.2 Pattern I trilateral stems	26
2.1.2.3 Derived or augmented trilateral stems	27

2.1.2.4	Quadriliteral stems	31
2.1.2.5	Morphological connections	32
2.1.2.5.1	The putative 't' affix	32
2.1.2.5.2	Shared vowel melody	32
2.1.2.5.3	Alternative classification scheme	33
2.2	Distribution of verbal patterns in the lexicon	35
2.2.1	Data collection	35
2.2.1.1	Method	36
2.2.1.2	Lexical issues	38
2.2.1.2.1	Choice of dictionary	39
2.2.1.2.2	Homomorphous (homonymous) roots	39
2.2.1.2.3	Colloquialisms	41
2.2.1.2.4	Synchronic gaps, classicisms and semantic change	41
2.2.2	Comparison of data with existing sources	42
2.2.3	Quantitative analysis of the data	45
2.2.3.1	Productivity by root	45
2.2.3.2	Productivity by pattern	46
2.2.3.3	Co-occurrence of patterns	47
2.2.3.3.1	Overview	47
2.2.3.3.2	Chi-square test methodology	49
2.2.3.3.3	Chi-square and phi coefficient values for trilateral pattern co-occurrences	51
2.2.3.3.4	Quadriliteral pattern co-occurrences	55
2.3	Summary	56
Chapter 3:	Alternative morphologies	58
3.1	Alternatives to the Arabic root as the primary basis of derivation	58
3.1.1	Word- and stem-based approaches	60
3.1.1.1	Is the concept of root necessarily excluded?	61
3.1.1.2	Specific arguments for a fully vocalised base	62
3.1.1.3	External evidence	69
3.1.1.3.1	Aphasic metathesis	69

3.1.1.3.2	Slip-of-the-tongue and word game metathesis	72
3.1.1.3.3	Hypocoristics	73
3.1.1.3.4	Diminutives in San'ani dialect	75
3.1.1.4	Conclusions	77
3.1.2	Matrices, etymons and radicals	78
3.1.2.1	Bohas's hypothesis	78
3.1.2.2	Assessment of the matrix/etymon model	83
3.1.2.3	Conclusions	85
3.2	Prosodic templatic morphology	85
3.2.1	Three morphemic tiers	86
3.2.2	Prosodic analysis	87
3.2.2.1	Syllable types in Arabic	87
3.2.2.2	Minimal stems	90
3.2.2.3	Further noun stems	91
3.2.2.4	Verbal stems	93
3.3	Summary	95
Chapter 4:	Understanding Arabic verbal semantics: Form and meaning	97
4.1	The grammarian's dilemma	98
4.2	Specific approaches from the grammars	101
4.2.1	The 'reductionist' approach	101
4.2.2	The 'explicit specification' approach	107
4.2.3	The approaches compared	111
4.3	The linguist's contribution	111
4.3.1	Semitic comparative linguistics	112
4.3.2	The synchronic linguist's perspective	119
4.4	Summary	123
Chapter 5:	Evaluating the pattern III – pattern VI semantic relationship	125
5.1	Selection of patterns III and VI	125
5.2	Mutuality and reciprocity	126
5.2.1	Data collection	126
5.2.2	Data interpreted	131
5.2.2.1	Pattern III mutuality	131

5.2.2.2	Pattern VI reciprocity	136
5.2.2.3	Pattern III – pattern VI correlation	140
5.2.2.4	Correlations with pattern I	142
5.3	Pattern III conativity	149
5.4	Summary	151
Chapter 6:	Transitivity and valency	153
6.1	Defining transitivity in Arabic	153
6.1.1	Transitive verbs	153
6.1.2	Intransitive verbs	154
6.1.3	Ambitransitivity	156
6.1.4	Transitivity through a preposition	156
6.1.5	Multi-transitive verbs	158
6.2	Valency	160
6.3	Data collection	164
6.4	Data analysis	167
6.4.1	Valency and the <i>ta-</i> prefix	167
6.4.1.1	A hierarchical approach to valency structure	168
6.4.1.2	Hierarchical exceptions	170
6.4.1.2.1	Unrelated meanings	171
6.4.1.2.2	Compliance with the hierarchy in at least one usage	172
6.4.1.2.3	Hierarchical challenges: other potentially explicable exceptions	175
6.4.1.2.4	Synonyms	180
6.4.1.2.5	Other exceptions	181
6.4.1.2.6	List of exceptions	182
6.4.1.3	Summary	183
6.4.2	Valency and the relationship with pattern I	184
6.4.2.1	Pattern I and pattern III valency	184
6.4.2.2	Pattern I and pattern VI valency	192
6.5	Summary	195
Chapter 7:	The pattern III template: From form to meaning	196
7.1	Formal characterisation of pattern III	197

7.2	Vowel lengthening and plurality	199
7.2.1	An introduction to verbal plurality	201
7.2.2	Mutuality and reciprocity as verbal plurality	206
7.2.2.1	Formal comparison of vowel lengthening in pattern III and broken nominal plurals	207
7.2.2.2	Is plurality a valid interpretation of mutual action?	210
7.2.3	Summary – plurality	213
7.3	The long \bar{a} in Arabic morphology	214
7.3.1	Nominal templates with long \bar{a}	217
7.3.1.1	Participles	217
7.3.1.2	Verbal nouns	224
7.3.1.3	Nouns of instrument	227
7.3.1.4	Nouns of occupation and intensity	229
7.3.2	Commonalities of meaning	231
7.3.2.1	Agency and patiency	232
7.3.2.2	Process and result	234
7.3.2.3	Temporal complexity	236
7.3.3	Summary – hypothesis of long \bar{a} as an aspectual marker	237
Chapter 8:	An aspectual model for Modern Standard Arabic	238
8.1	Defining aspect	238
8.2	The Arabic s-stem and p-stem verb forms: Tense or grammatical aspect?	240
8.3	Vendler's aspectual categories	246
8.4	Olsen's scheme	251
8.4.1	Overview	251
8.4.2	Application to MSA	256
8.4.2.1	States	257
8.4.2.2	Activities	261
8.4.2.3	Accomplishments	266
8.4.2.4	Achievements	274
8.4.2.5	Semelfactives	280
8.4.2.6	Stage-level states	284
8.5	Summary	287

Chapter 9: Aspectual categorisation of patterns III and VI	288
9.1 Data	288
9.1.1 Verbs of ACTIVITY and STATE	290
9.1.1.1 Corpus data counts – methodology	292
9.1.1.2 Results	294
9.1.2 Other categories represented	296
9.1.2.1 Verbs of surprise	296
9.1.2.2 Verbs of giving	302
9.1.2.3 Verbs of inception	307
9.1.2.4 Other verbs	310
9.1.2.4.1 Denominative and delocutive verbs	310
9.1.2.4.2 Potentially [+telic] verbs	312
9.1.2.4.3 Section summary	324
9.2 Summary	324
Chapter 10: Inceptive aspect	326
10.1 The case for a lexical aspect category of INCEPTIVE	326
10.2 Extension of Olsen's scheme for INCEPTIVES	337
10.2.1 Feature marking of the onset phase	344
10.2.2 Other feature marking combinations	346
10.2.3 Extended scheme for lexical aspect categories	350
10.3 Inceptive verbs in patterns III and VI	351
10.4 Summary	361
Chapter 11: The passive in patterns III and VI	362
11.1 Passive formation by vowel melody change	362
11.1.1 Corpus data evidence	364
11.1.2 Native speaker evidence	367
11.1.3 Conclusion	368
11.2 Passive participle formation	369
11.2.1 Dictionary evidence	369
11.2.2 Native speaker evidence	372
11.2.3 Corpus data evidence	375
11.2.4 Conclusion	376
11.3 Verbal noun forms	376

11.4 Summary	377
Chapter 12: Conclusions	379
12.1 Overview	379
12.2 The characteristics of patterns III and VI	381
12.2.1 Form	381
12.2.2 Meaning	382
12.2.3 Relating form and meaning	383
12.3 Directions for further research	383
12.3.1 Nominal aspect	383
12.3.2 Aspect and passivisability	385
12.3.3 Inceptivity of state and of activity	386
12.3.4 Alternative verbal noun forms	386
12.3.5 Defining atelicity	387
12.4 Summary	391
Bibliography	393
Appendix I: Data tables	406
Appendix II: Semantic category labels	408
Appendix III: Native speaker questionnaires	410
III.1 Background	410
III.2 Procedure	410
III.3 Information and consent form	412
III.4 Questionnaire	414
III.5 Data summary	418
Appendix IV: Passive participles in patterns III and VI	419

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Thanks are also due to the Honeyman Foundation for their Studentship award, to Dilworth Parkinson at Brigham Young University for assistance in accessing his invaluable *arabiCorpus*, to Mari Broman Olsen of Microsoft for her encouragement as I applied and developed her model of linguistic aspect, and to my anonymous native speaker informants for their time and willingness to share their insights.

Notes on symbols, abbreviations and other conventions followed in examples

Arabic transliteration

Consonants

ء	'
ب	<i>b</i>
ت	<i>t</i>
ث	<i>th</i>
ج	<i>j</i>
ح	<i>H</i>
خ	<i>kh</i>
د	<i>d</i>
ذ	<i>dh</i>
ر	<i>r</i>
ز	<i>z</i>
س	<i>s</i>
ش	<i>sh</i>
ص	<i>S</i>

ض	<i>D</i>
ط	<i>T</i>
ظ	<i>DH</i>
ع	ع
غ	<i>gh</i>
ف	<i>f</i>
ق	<i>q</i>
ك	<i>k</i>
ل	<i>l</i>
م	<i>m</i>
ن	<i>n</i>
ه	<i>h</i>
و	<i>w</i>
ي	<i>y</i>

Vowels etc.

اَ	<i>a</i>
اُ	<i>u</i>
اِ	<i>i</i>
أ	<i>-an</i>

اِى	<i>ā</i>
و	<i>ū</i>
ي	<i>ī</i>
ة	<i>-a, -at</i>

NOTES:

1. As is common practice, the transliteration follows pronunciation rather than a

symbol-for-symbol substitution, allowing the transliterated text to be read aloud. It is recognised that production of speech in MSA is subject to many idiolectal variations and thus the transliterated text here employs minimal inflection except where a vowel must be supplied preceding a joining *hamza*.

2. Consequently, grammatical cases are rendered only when explicitly pronounced or where necessary to the argument and are glossed accordingly.
3. The combinations *Damma-waw* and *kasra-yā* (وُ and يِ) have been represented as *ū* and *ī* respectively, except where the weak consonant begins the following syllable when *uw* and *iy* are preferred.
4. In certain proper names containing the /g/ phoneme, the ك or ج from the Arabic orthography has been transliterated as *g*.
5. To reflect pronunciation in modern informal speech, *tā' marbūTa* (تة) has been transliterated simply as *-a*, except in construct or preceding an object pronoun when it is represented as *-at*.

Citations and translations

Each example is given with appropriate citations except where:

1. it is a dictionary listing from Wehr (1994);
2. it is my own composition or rewording of a previously cited example.

Furthermore, all questionnaire examples (see Appendix III) and all translations of Arabic examples are my own, with the exception of dictionary definitions.

Morphemic Glossing

1	first person
2	second person
3	third person
ACC	accusative
APT	active participle
CMPR	comparative
COLL	collective
DEF	definite
DIM	diminutive
DU	dual
F	feminine
FUT	future
GEN	genitive
IND	indicative
INDF	indefinite
M	masculine

NEG	negation
NOM	nominative
NPST	non-past
OBJ	object
PASS	passive
PFV	perfective
PL	plural
POSS	possessive
PPT	passive participle
PST	past
Q	question marker
REL	relative
SBJ	subject
SBJV	subjunctive
SG	singular
VN	verbal noun

Notes:

1. As far as is reasonably practical, the conventions followed are those given in *The Leipzig Glossing Rules* (Bickel et al. 2008).
2. The table above contains some non-standard abbreviations used for ease of glossing Arabic.
3. Due to the complex nature of Arabic morphology, including broken plurals, discontinuous morphs and portmanteau morphs, it has not always been possible to fully match morphs with glossed meanings. For example, in p-stem verb forms it is difficult to specify exactly which morphs carry person, gender and mood

and, for this reason, I make no attempt to gloss p-stem prefixes as separate morphs. However, since the purpose of the gloss here is largely to clarify the examples for non-Arabists, the practice I have followed should not be taken to represent any particular view regarding which morph carries a specific burden of meaning.

4. Active verbs have not been glossed as such and the typologically unmarked categories of indicative mood, masculine gender and singular number are only glossed where explicit in morphology.

Event Time Diagrams

/-----	Bounded at start
-----/	Bounded at end
<-----	Unbounded at start
----->	Unbounded at end
0-----	Implicit start
----/----	Internal phase boundary
	Punctual phase
↑, ↓	Locations of points in time
ET	Event time
RT	Reference time
ST	Speech time
X	External events

Privative feature marking (Olsen 1997)

[+feature]	Marked for feature
[Øfeature]	Unmarked for feature
Ø	Unmarked for all features

Other abbreviations

(+ d.o.)	Followed by direct object
(+ i.o.)	Followed by indirect object
(s.o.)	Someone
(s.th.)	Something
[III]	Roman numeral (with or without vowel): trilateral pattern (see Chapter 2)
[QII]	Q with Roman numeral: quadrilateral pattern (see Chapter 2)
[MUT][REC][SIM]	Semantic category labels, with or without arithmetic symbols (see Appendix II for complete listing)
[3A]	Number-letter combination: valency structure code (see Table 41 on page 165)
{1}	In discussion of valency: numbers designating items contributing to valency
{YN?}	In questionnaire examples: responses of individual informants (see Appendix III)

Chapter 1

Introduction

From our earliest times on the planet, we humans have searched for order in the world around us, whether gazing at the night sky and defining the somewhat fanciful patterns of the constellations or peering deep within the living cell to discover the elegant double-helix structure of DNA. We recognise patterns in art, patterns in music and even patterns in the physical sciences, such as the periodicity of the elements or mathematical sequences. Moreover, that there is order, not a mere amorphous sea of chaos, leads us to conclude that there is meaning to be found in the patterns we observe. Recognising the beauty and regularity of the movements of the stars and the bodies of the solar system, the Psalmist attributes divine meaning:

The heavens declare the glory of God; the skies proclaim the work of his hands.
Day after day they pour forth speech; night after night they display knowledge.
There is no speech or language where their voice is not heard. Their voice goes
out into all the earth, their words to the ends of the world. (Psalm 19:1-4, NIV)

Whether we agree with the Psalmist's assessment or not is irrelevant. What is clear is that he has observed order and structure and proceeded to interpret it: he has progressed from form to meaning. In recent times, the Human Genome Project has mapped the entirety of human DNA, but now the discipline of bioinformatics is tasked with understanding what effect each gene has on us as organisms, once again identifying

form and progressing thence to meaning.

Language is fundamentally an ordered phenomenon. By this I mean not to imply that words or sentence components are necessarily ordered in a particular way, though this is often true of specific languages. Rather I am more generally stating that language is not chaotic, but possesses discernible patterns and reproducible structure. Were it not so, there would be little point in me writing this paragraph, for in doing so I make a very basic assumption. I assume that the language I employ is sufficiently close to that codified variety we call English that it will be comprehensible to other users whose language competencies also include that variety. That is, not only does the language I share with my readers have the same form, but its lexicon and its grammatical constructions have the same meanings for my readers as they have for me.

This study has been inspired by the relationship between linguistic form and meaning which characterises the view of language expounded in the foundational lectures on linguistics given in the early twentieth century by Ferdinand de Saussure at the University of Geneva, subsequently published posthumously by his students as the *Cours de Linguistique Générale* and consulted here in translation (Saussure 1966). If language implies order, then the prescriptive grammarian identifies the order he discerns within its patterns and imposes it, whereas the descriptive linguist classifies those patterns and the Saussurean structuralist specifically relates the form evident within such patterns to meaning. Furthermore, the research detailed in the following chapters results from taking up the challenge of evaluating Beedham's (2005) method of lexical exceptions, itself firmly rooted in Saussurean structuralism, as an appropriate tool with which to examine the verbal system of Modern Standard Arabic (MSA).

Many critiques and expositions of Saussure have been published and may be consulted, thus it is my intention here only to provide a brief restatement of the principles which have been formative in my approach. Beedham's method will be less familiar, thus I will seek both to summarise his methodology and to explain to what extent it has or has not been applied in my own research.

1.1 Saussurean structuralism

Two fundamental themes of Saussurean structuralism will be seen to pervade this present research: the indivisibility of the linguistic sign and the notion of a language as a consistent and self-contained system.

1.1.1 The linguistic sign

Saussure (1966:66) defines the linguistic sign as 'a two-sided psychological entity ... [in which] ... [t]he two elements are intimately united, and each recalls the other'. These two elements are introduced initially as 'concept' and 'sound-image', but Saussure (1966:67) proceeds in the original French to designate them *signifié* and *signifiant*, or 'signified' and 'signifier', on the basis that 'the last two terms have the advantage of indicating the opposition that separates them from each other and from the whole of which they are parts'. Without wishing to diminish the indivisibility which Saussure establishes between these two facets of the linguistic sign, I prefer the respective designations 'meaning' and 'form' followed by Beedham (2005) as more appropriate in contemporary English.

We should note, as Beedham does, that:

the indivisible linguistic sign ... does not of itself tell us whether we should start with the *signifiants* – with form – and move from there to the *signifiés* – to meaning – or do it the other way round and start with meanings and move from there to forms. (Beedham 2005:3)

However, I have already commented in my opening paragraphs that advances in diverse fields of knowledge typically involve observation of form and proceed from there to meaning. We shall return to the methodological implications of this in section 1.2.

The other noteworthy property of the linguistic sign as defined by Saussure (1966:67ff.) is that it is arbitrary: there is no intrinsic or iconic connection between form and meaning, such that the link only exists within a particular language community. Thus, for example, according to our language background we may designate a canine quadruped as *dog*, *chien*, or *kalb*, but there is no absolute sense in which any of these forms from English, French and Arabic respectively is any more 'canine-like' than any other. Whilst the arbitrariness of the sign appears a generally sound maxim, it may be an oversimplification. Although Saussure (1966:69-70) recognises and addresses the issues of onomatopoeia and interjections, he does not deal with the counterexample of reduplication present in many languages and noted in sections 4.2.2 and 7.2.1.

1.1.2 Language as a system

It is somewhat ironic that what might be regarded as the ultimate statement of Saussurean structuralism, that a language is 'un système où tout se tient', is actually not attributable to Saussure but to Meillet (1893:318-319 in Koerner 1999:26). Nevertheless, it is clear that this quotation neatly expresses Saussure's (1966:114) claim that

'[l]anguage is a system of interdependent terms in which the value of each term results solely from the simultaneous presence of the others'.

Thus, according to Saussure, although the linguistic sign is in itself arbitrary, its place within the system which is language is anything but arbitrary. Furthermore, Saussure makes two observations which may seem obvious to the modern trained linguist but are anything but trivial. Firstly, although he initially introduces the linguistic sign by relating a word form to the concept it signifies and presents the language as a system consisting of these interdependent signs, he includes not only words but equally grammatical devices as integral and systematically dependent parts:

Within the same language, all words used to express related ideas limit each other reciprocally ... [However] [e]verything said about words applies to any term of language, e.g. to grammatical entities. (Saussure 1966:116)

Thus in French (or English), for example, singular and plural stand in relation to one another within the category of number, whereas in Sanskrit (or Arabic) singular and plural also stand in relation to the further designation of dual number. This leads to the second observation that each individual language is a system in its own right, within which its various components may relate in ways which are quite unlike their apparent counterparts in other language systems, or may simply be absent from those systems. Among his other examples he cites the lack of tense as a deictic delineator of time in Hebrew and the aspects of the Slavic verb as characteristics which are quite distinct from his native French (Saussure 1966:116-117).

To sum up what we have gleaned from Saussure, if we observe a characteristic

form within a language system, we should expect that form to have meaning associated with it and, conversely, if a language makes a distinction of meaning we should expect to see a corresponding distinction of formal expression. Moreover, because language is a coherent system, every linguistic sign stands contrasted in both form and meaning with those around it. Finally, whilst the specific language system is in itself consistent and coherent, its categories and divisions of form and meaning do not necessarily align with those encountered in other systems, introducing a cautionary note for the linguist who may prejudice his conclusions about a language system by observing it through a lens tinted with the characteristics of his own native language.

1.2 Beedham's method of lexical exceptions

Originally presented as 'a method of investigating grammar' in Beedham (1982:135ff.), the 'method of lexical exceptions' is refined and explained more fully in Chapter 7 of Beedham (2005). The research presented in this dissertation began as an attempt to apply Beedham's method to Arabic, though it will become clear that I have departed in significant ways from the prescribed methodology, such that I claim only that this work is inspired by the method, not strictly an application of it. However, whilst some specifics of Beedham's methodology have been sacrificed, the underlying principles largely remain intact.

1.2.1 Principles

1.2.1.1 Unexplained exceptions are indicative of incorrect analysis

It is evident from Beedham's approach to exceptions to grammatical rules that he takes

Saussure's view of language to its extreme:

According to Saussure a language is a structure or system. System implies regularity implies rules If a language really is systematic it should not allow exceptions at all, i.e. items which stand outside the system Yet exceptions ... arise to the extent that we, the grammarians, have got it wrong. We introduce them from outside with rules that are not quite right. (Beedham 2005:153)

Thus he argues that correct formulation of grammatical rules will necessarily lead to the elimination of (unexplained) exceptions. Essentially this is a strong restatement of the Saussurean maxim of *un système où tout se tient*: for Beedham, there is no place for exceptions in a language system.

1.2.1.2 From form to meaning

Again, Beedham states his position forcefully and unequivocally:

It is important to emphasise that one starts with form and goes from there to meaning, not the other way round The linguist who starts with meaning is doomed to be trapped in the analysis which produced that meaning.

(Beedham 2005:156)

Our starting point is to be some property which is formally expressed and hence objectively observable and quantifiable, whether morphological or syntactic. For example, Beedham's analysis of the passive proceeds from its formal expression as

be + V-ed, rather than from a meaning-based definition of the passive as equivalent to an underlying active. His research on the strong verbs of English and German (Beedham 2005:107ff.) begins with the formal morphological distinction that they do not form their preterite and second (past) participles¹ regularly and asserts that this distinct expression of form must be accompanied by distinct meaning, for which he then proceeds to search. Thus, in emphasising the indivisibility of the sign (the form-meaning relationship), he again presents a purist view of Saussure but furthermore chooses to 'align [himself] with one side of the debate about whether to go from form to meaning or from meaning to form' (Beedham 2005:6), namely that form is the structuralist's natural and logical empirical starting point.

1.2.1.3 Synchronic basis

Beedham makes it clear that he works exclusively synchronically, viewing historical considerations as a distraction: '[i]f you are concerned only with the modern language there is no diachronic part to your work to be distracted by' (Beedham 2005:8). Again, he is motivated by a high view of Saussurean structuralism which will not allow any anomalous elements within the synchronic system, no matter their provenance or however historically entrenched they may be. Thus while he admits that the '[i]rregular verbs [of English and German] are a historical vestige ... that does not stop the irregular verbs from being rule-governed and meaningful synchronically' (Beedham 2005:112). He is thus motivated by this belief to find the meaning associated with these irregular verbs within their respective modern language systems.

¹ Beedham (2005:175) 'follow[s] Jespersen (1924:283-284) in calling it the 2nd participle [in these languages] in order not to prejudice the issue of its meaning'.

I am compelled to comment at this point that I believe Beedham to be an idealist. The strong view of the Saussurean principles which he holds fast to and employs enables him to pursue his goal of definitively relating meaning to form with a commendable single-mindedness. However, whilst taking those same principles as a useful and necessary foundation, I confess to less idealism and more of what I would like to regard as realism. It is in the realm of synchronic integrity that my appeal to realism is most evident. To justify this, I will return to Saussure.

We must recognise that Saussure himself was a historical linguist and that his original lectures were delivered at a time when, with the exception of prescriptive grammarians, linguists were, as he comments, 'completely absorbed in diachrony', and he expresses the hope that '[l]inguistics, having accorded too large a place to history, will turn back to the static viewpoint of traditional grammar but in a new spirit' (Saussure 1966:82-83). Whilst wanting to clearly delimit synchronic study from diachronic in order to establish its validity as a discipline, Saussure (1966:74) is well aware that language change cannot be ignored and comments that '[c]hange in time takes many forms, on any one of which an important chapter in linguistics might be written'. He continues:

Language is radically powerless to defend itself against the forces which from one moment to the next are shifting the relationship between the signified and the signifier. This is one of the consequences of the arbitrary nature of the sign.

(Saussure 1966:75)

In his treatment of synchrony and diachrony, Saussure (1966:88-89) employs the

analogy of the chess board, likening the state of the board at any stage of a game to a static situation in a language system. Each possible state of the board is governed by the predetermined rules of the game and progression from one state to the next involves moving a single chess piece, though this move has an effect on the entire system. His view of diachrony is valid in that he observes that for any given state of the board, the succession of moves which brought it about is irrelevant. However, his analogy of change breaks down in one respect. It represents the real development of language in much the same way that a cinematographer captures real life: the movie camera cannot record movement, the illusion of movement only being created when a succession of still frames is projected consecutively. For Saussure, a chess piece moves and displaces another such that no intermediate state exists, but I contend that the following illustration, whilst perhaps fanciful, is more helpful.

Imagine a well-ordered dwelling. The occupant of the house has taken the trouble to acquire all the items one needs to live comfortably and efficiently and has assigned each object its place with care to maximise its effectiveness. If a new item is acquired it presents no problem, so the brand-new DVD recorder, not previously required by the household but now indispensable, takes its place naturally alongside the wide-screen television and the recently added digibox with only minor adjustments to make some space. Sometimes, however, room must be found for a newly acquired object by displacing another. I remember as a child I was left a rather elegant upright piano by my deceased cousin. Finding room for it was made all the more difficult because we already possessed a perfectly serviceable piano, but rejecting the gift was unacceptable, so for some months our lounge contained two pianos side by side. An external observer during

this period would have been hard-pressed to explain why a family with only one (would-be) pianist needed two such instruments fulfilling the same function. Ultimately, the original piano was evicted and the system returned to a stable state.

I believe that this picture better represents language change and I would draw attention to the phrase 'from one moment to the next' in the preceding quote from Saussure. This is essentially the problem for us as empirical synchronic linguists: we are aiming at a moving target. Ideally each element has a unique place synchronically defined within the system, but realistically readjustment of the system is a constant, dynamic process which takes time, not one which moves stepwise from one state to the next. The system is therefore better characterised as a stable equilibrium.² Thus I do concur with the ideal of *un système où tout se tient*, but contend that in taking a synchronic snapshot of a language at any point in time we are actually capturing a static representation of a moving phenomenon. Therefore, for example, in explaining some lexical exceptions, such as near synonyms with apparently redundant morphology which emerge in Chapter 6, I take the view that we cannot expect the system to be completely free of anomalies, but that we should expect that the system will always be readjusting itself to resolve those anomalies by expelling or re-assigning them. Furthermore, true synchronic study is also realistically unattainable for practical reasons: any language, especially a major international variety like MSA, is in use over a geographically widespread area by speakers with a wide range of ages and social backgrounds. I consider that anomalies in our research resulting from these sociolinguistic factors are to be expected and, to a degree, welcomed: a study which has too narrow a focus will be of

² The children's toy with a weighted base which wobbles when pushed but always rights itself is a useful illustration.

limited interest; thus restricting our research to the language of a small homogeneous group of individuals is not an option. I will therefore treat a language as if it is a self-consistent, homogeneous system, but will not be unduly surprised if a small number of anomalies defies synchronic explanation.

1.2.1.4 The Hegelian triad and scientific method

Beedham's method seeks to challenge existing views and rules of grammar by examining 'problems, contradictions, flaws, exceptions, etc.' and thus to discover a fresh solution which is free from these inconsistencies, a process which he frames as 'the Hegelian triad of thesis, antithesis, and synthesis' (Beedham 2005:153-154). As an integral part of the antithesis, lexical exceptions provide effective ammunition for attacking accepted grammatical wisdom. Beedham (2005:155) also views exceptions as a practical means of overcoming the infinity of language, allowing the researcher to concentrate on constructions which do not occur instead of having to examine the limitless possibilities of those that do.

In support of his method, Beedham (2005:155) furthermore states that 'lexical exceptions ... render theoretical linguistics an empirical science' and thus presents his analysis of the passive as a scientific discovery. Whilst I applaud his intentions and support any attempt to bring empirical scientific principles to bear on linguistic research questions, to imply that this method, and it alone, can transform theoretical linguistics in this way is surely an overstatement. However, its underlying principles of 'new observations ... new facts, which lead to new insights and new analyses' (Beedham 2005:160) are consistent with the following definition of science:

A branch of study which is concerned either with a connected body of demonstrated truths or with observed facts systematically classified and more or less colligated by being brought under general laws, and which includes trustworthy methods for the discovery of new truth within its own domain.

(OED)

1.2.2 An attempt to apply the method

Beedham (2005:163-164) conveniently summarises his method in six distinct phases. I will briefly restate each of these and use this framework to comment upon how my own research detailed in the forthcoming chapters follows this methodology or to what extent it departs from it.

1.2.2.1 Phase 1: choose a formal construction

Beedham specifies that the researcher should choose a construction which has a sufficiently large number of lexical exceptions. Moreover, for purposes of comparison, he requires study of the chosen construction in two or more languages in which the researcher is fluent. The concept of fluency in Modern Standard Arabic is somewhat nebulous in itself (see further discussion in section 2.2.1.2), but I will assume sufficient competency in the language to have the required degree of intuitive insight. However, my fluency in English and in other European languages will be of very little assistance in the present research, since my chosen construction is morphological and thus language-specific, or at least peculiarly Semitic. Whilst I have some familiarity with Hebrew, and pan-Semitic comparison does provide some insight into the nature of the Arabic verbal system in general (as evidenced in Chapters 3 and 4), the specific vowel

lengthening verb patterns of Arabic which become the focus of my study from Chapter 5 onwards have no well-attested cognates in Hebrew. Thus, if I were to follow the requirements of Beedham's methodology rigidly, I would conclude that since no cross-linguistic element to the study is possible, it is not suitable for application of the method.

However, it is my contention that while the benefits of insights from other languages may be seen in Beedham's own work, it is not a fundamental underlying principle that the method must be applied simultaneously in more than one language. I will therefore work here with Arabic alone. I will, however, delay singling out one particular morphological pattern as suitable for analysis until I have surveyed the verbal system as a whole.

1.2.2.2 Phase 2: identify the problems, anomalies, contradictions, etc.

From the outset, I have in mind the confusing, often anomalous semantics of the Arabic verbal patterns. This, in general terms, becomes the focus of Chapter 4. However, having in mind the morphological complexities of the verbal system, and conscious of the methodological principle of proceeding from form to meaning, I am led first to comprehensively survey all verbs in the language according to their derivational patterns and the interactions between those patterns (Chapter 2), and to attempt to gain a better understanding of the morphological system (Chapter 3) which gives rise to verbal forms. Having established the formal basis for the verb patterns, in Chapter 4 I explore the semantic issues involved in characterising the various verbal patterns, surveying the problems, anomalies, etc. in the system as a whole before tackling the form-meaning

relationship for a specific verb pattern (in fact, for two related patterns) in the next phase.

1.2.2.3 Phase 3: identify the unexplained lexical exceptions

In order to do this, I must formulate the thesis I wish to challenge. In Chapter 5, I collect dictionary data for all verbs occurring in the vowel lengthening patterns, as Beedham recommends, and establish that the dominant pattern III meaning is mutual (or implicitly reciprocal) and, similarly, that pattern VI most often has explicit reciprocal meaning. Thus in terms of Beedham's method, the thesis to be examined is that the vowel lengthening patterns give rise to mutual or reciprocal meaning. Although no grammarian would claim this to be a prescriptive rule, many identify it as the most characteristic tendency of these patterns and it thus clearly merits closer scrutiny.

Note that I am proceeding from regularity of form to irregularity of meaning directly, unlike Beedham's applications, in which the lexical exceptions display irregular formal properties in morphology or syntax. However, since up to one third of all verbs in the patterns concerned do not fit the thesis, even when both morphologically related patterns occur together, rather than proceeding to examine the substantial set of exceptions more closely, I conclude that the underlying basis of the thesis is flawed and turn to a different property in search of consistent meaning.

In Chapter 6 the focus turns to the syntactic behaviour of the set of verbs in question and especially the derivational meaning of the prefix which distinguishes pattern VI from pattern III. The thesis is now that the *ta-* prefix is detransitivising. However, even an approach to detransitivisation on the basis of numerical valency is

found to be inadequate to explain the antithetical set which constitutes 40% of the verbs.³

1.2.2.4 Phase 4: identify the properties of the exceptions

This phase concentrates on identifying formal properties, though Beedham recognises that it may also be helpful to study the semantic properties of the exceptions. Concerning detransitivisation, I intuitively observe in the course of compiling the data in Chapter 6 that *ta-* prefixation often causes a verbal argument to change from being a direct object to an indirect object and that this phenomenon is common amongst the exceptions. Although I do not formally compile a list of exceptions at this stage, I have identified a property which allows me to theorise.

1.2.2.5 Phase 5: what might lead to the exceptions?

At this point, I depart significantly from Beedham: instead of concentrating now on the exceptions themselves, I use what I have discovered about them to inform my view of transitivity. Whereas Beedham looks at the set of exceptions and asks why they are anomalous, I return to look at the entire population and ask how I can reformulate the thesis to bring the exceptions into line and dispense with the anomaly. In this case, I develop a hierarchical model of transitivity, which redefines what we mean by detransitivisation in Arabic. In some respects, my departure from Beedham's methodology is not that great: I have arrived at the same point as he does by a different route and have succeeded in reformulating a grammatical rule to eliminate (most)

³ In Chapter 6 I will use the term 'numerical valency' to indicate the simple number of verbal arguments contrasted with 'hierarchical valency' which takes account of the nature of those arguments.

unexplained exceptions.

1.2.2.6 Phase 6: the semantic phase

Beedham now asks whether the meaning corresponding with the formal characteristic which has been identified in the exceptions is applicable to the construction as a whole. Although I have found a solution to the detransitivising prefix which is applicable to the whole set of verbs I am interested in, this new view of transitivity proves to be of no benefit in understanding the vowel lengthening component of their morphology. I am no closer to discovering its meaning and must therefore reassess the methodology.

1.3 A fresh approach to the problem

Although I have presented my work thus far as a linear process in accordance with Beedham's phases of research, in reality the manner in which it progressed was more 'organic'. Intuitive leaps do not happen to order and indeed may precede the completion of data gathering and interpretation. Thus the investigations detailed in Chapters 5 and 6 represent my attempt to apply Beedham's method, which was a significant component of my original research question, and are argued through to conclusions, even though it became clear relatively early on that they would not deliver the understanding of the form-meaning relationship which I was pursuing.

With no further rule to examine, I had no means to identify corresponding exceptions in pursuit of my goal. However, returning to the principles of Beedham's methodology rather than its practical outworking, I decided to investigate where else within the language system of MSA we might find the formal characteristic of vowel

lengthening. Chapter 7 thus begins by evaluating the formal similarities between verbal pattern III (and its derivative) and broken nominal plurals and raises the possibility of verbal plurality. I then move on to examine other nominal forms which contain the long \bar{a} vowel. Intuitively, the connection with these nominal forms seemed promising and suggested an aspectual meaning. I began to collect aspectual data, but soon realised that before I could analyse that data quantitatively I had first to identify the specific aspectual property which appeared to be shared by the majority of the verbs in patterns III and VI, so that I could test for it empirically.

Chapter 8 details my search for a model of lexical aspect which could be logically and consistently applied to MSA, which I discover in Olsen (1997). The identification of the aspectual feature which characterises the majority of the verbs in the vowel lengthening patterns is described in Chapter 9. I now find that I have a new tentative thesis, based not on an existing rule of grammar but on my own observations, that patterns III and VI are atelic. I therefore concentrate on the apparent exceptions, eliminating many of them by careful application of the aspectual model with reference to corpus examples and native speaker feedback. A few verbs are found to be structurally anomalous and are explained accordingly. However, there remains a substantial set of verbs which do not readily fit the atelic aspectual categories and thus constitute exceptions to the thesis of atelicity. I draw a semantic link between these verbs in terms of their shared sense of inceptivity. Formally, as demonstrated through corpus examples in Chapter 10, what sets them apart is that they do not behave syntactically in combination with the grammatical aspects in the manner we observe for other verbs. Thus I proceed to reformulate the aspectual model, extending it to include a new

category which incorporates these inceptive verbs. In doing so, I also explain a similarly anomalous set of verbs in English, demonstrating that my analysis has cross-linguistic applicability.

I have therefore arrived in Beedham's terms at a new synthesis which I formalise in the concluding chapter: that the vowel lengthening verbal patterns have atelic aspectual meaning. In my journey I have not always adhered to Beedham's methodology. However, to the extent that I reached my conclusion by generating new data, making an intuitive leap and employing lexical exceptions as a tool towards gaining a formal understanding of what unites all instances of my chosen grammatical construction, I have followed the spirit of Beedham's method. I should emphasise that I had no preconceived notion that the answer to my search for meaning in these verbal patterns would be aspectual. Moreover, I would conclude that my research has potential application to passivisability in Arabic, as discussed in Chapter 11, was far from my mind. It is perhaps fitting, however, that the research which unfolds in the chapters which follow, founded on Saussure's principles and inspired by Beedham's methodology, provides insight into the workings of aspect and the passive in a language so different from the European languages in which Beedham's own research takes place.

1.4 Further methodological considerations

Before proceeding to examine language data, it will be helpful to clarify some matters of methodology. It will be noted in the early chapters that my method begins with collecting and analysing dictionary data, consistent with Beedham's own approach. The limitations of such a data source are discussed in section 2.2.1.2. However, as my

research progresses and begins to concentrate on specific examples, it becomes necessary to examine and verify the actual contemporary usage of certain verbs in some detail and specifically in contexts which provide unambiguous evidence.

Data are obtained in two ways: questionnaires which present a range of examples to native speaker informants,⁴ an approach also used by Beedham, and corpus examples of actual language. Native speaker input was found to have its own limitations, especially as the number of informants was small and the volume of data which may reasonably be tested on volunteers is limited. The responses obtained were not always consistent and the feedback from informants that the examples are presented without context is valid. However, questionnaires did provide the opportunity to test a small number of verbs in a range of aspectual settings.

Thus, in order to verify contemporary usage of a wide range of verbs, I have extensively consulted *arabiCorpus*, a web-based resource developed and maintained by Dilworth Parkinson at Brigham Young University. I have principally used the corpus in two ways: to obtain counts of verbs in order to present data which reflect their current frequency and to identify specific examples in context which demonstrate aspectual and other lexical properties of the verbs under investigation. Thus many of the examples cited are from sources contained within *arabiCorpus*, though I also draw upon other sources of actual modern Arabic usage including web pages located by searching for specific strings in *Google*. In this way, I have been able to isolate examples which contextually demonstrate verbal properties, the subtleties of which would be difficult to elicit from native speakers using artificial sentences.

4 See Appendix III for full methodology.

Chapter 2

Verbal morphology and the lexicon

As discussed in Chapter 1, the starting point in seeking to apply Beedham's method of lexical exceptions is to look for irregularity in the language system, identifying subclasses of lexical items which do not conform to the normal rules or patterns. Arabic is certainly a language of patterns: indeed, in common with other Semitic languages, it is notable for the regularity of its morphology, in which the verbal patterns are the keystone. Foreign learners of Arabic will attest to the observation that mastering the verbs is key to learning the language and most Arabic scholars view the verbal system as the framework around which the language is built, as the ordering of entries in Hans Wehr's *Dictionary of Modern Arabic* (Wehr 1994) and other dictionaries confirms. Arabic also strikes the linguist as a language rich in verbs, both numerically and semantically. Even the constituent-order typology of Classical Arabic, which is strongly VSO, points to the prominence of the verb. However, whereas Beedham (2005:107ff.) singles out the irregular verbs of English, German or Russian as obvious candidates for his method, the Arabist has no comparable set of verbs to examine. Simply put, there are no irregular verbs in Arabic. I will discount as morphologically trivial and extremely rare such apparent anomalies as example (1), a common verb subject to changes in certain parts of its paradigm motivated purely by phonotactic convenience, in this case the avoidance of an awkward, syllable-initial glottal stop following syllable-final /r/ leading to elimination of the middle radical (*hamza*) and resyllabification as in (1b):

- (1a) رأى
ra'ā
 'he saw'
- (1b) يرى
yarā
 'he sees'

Thus, while it is proposed to examine the verbal system of MSA for exceptions, it will not be morphologically irregular verbs which will form the basis of the study. Instead, we must look to those verbs which are anomalous in other ways. The aim of the present chapter is to explain and document much of the lexicological groundwork, thus it will serve as an introduction to the morphological structure of the Arabic verb patterns and examine how these formal patterns are realised and distributed in the lexicon. As such, I will postpone critical examination of some of the assumptions until later chapters: in particular, Chapter 3 will explore different approaches to Arabic morphology, and Chapter 4 will concentrate on the semantics of the derived verbal patterns.

2.1 Arabic verbal morphology

A brief overview of the verbal system of MSA is presented here for the benefit of non-Arabists. Full paradigms may be consulted elsewhere: for example Reig (1983) presents conjugations for 184 different example verbs. It is important to realise, however, that the variations represented in these tables are almost completely predictable from sets of

rules which cover the behaviour of the patterns when weak consonants, emphatic phonemes, reduplication and the glottal stop (*hamza*) are present in all the attested combinatorial possibilities, giving rise to phonotactically motivated changes, or 'morphophonological adjustments' (Holes 2004:110ff.). Thus, conjugations in the sense of groups of verbs which are inflected differently, as in Latin or Greek for example, do not exist in MSA.

2.1.1 Inflectional morphology

Table 1 demonstrates the main verbal inflections using the paradigmatic triliteral pattern I verb *فعل* (*faʿala* – 'to do').⁵ Although I have included the labels 'perfect' and 'imperfect' for ease of reference to traditional grammars, the designations 's-stem' and 'p-stem' are preferred by Holes (2004) and have the merit of labelling the forms without prejudging their meanings, referring respectively to suffixed and prefixed stems. It should be noted that the so-called prefixed stem paradigm actually consists of the stem inflected with both prefixes and suffixes, otherwise regarded as circumfixes (Bauer 2003:263-264) or 'discontinuous bound affixes' (Holes 2004:106). In fact, the paradigm given in Table 1 only shows one set of p-stem affixes, modification to the suffixed portion giving rise to two further paradigms traditionally designated subjunctive and jussive.

5 The numerical designations of the verbal patterns are treated in section 2.1.2.3.

Person / gender / number	perfect / s-stem		imperfect/ p-stem	
1SG	<i>fa</i> عal- <i>tu</i>	فعلتُ	'a-fعal- <i>u</i>	أفعل
2MSG	<i>fa</i> عal- <i>ta</i>	فعلتَ	<i>ta</i> -fعal- <i>u</i>	تفعل
2FSG	<i>fa</i> عal- <i>ti</i>	فعلتِ	<i>ta</i> -fعal- <i>īna</i>	تفعلين
3MSG	<i>fa</i> عal- <i>a</i>	فعل	<i>ya</i> -fعal- <i>u</i>	يفعل
3FSG	<i>fa</i> عal- <i>at</i>	فعلتْ	<i>ta</i> -fعal- <i>u</i>	تفعل
2DU	<i>fa</i> عal- <i>tumā</i>	فعلتما	<i>ta</i> -fعal- <i>āni</i>	تفعلان
3MDU	<i>fa</i> عal- <i>ū</i>	فعلوا	<i>ya</i> -fعal- <i>āni</i>	يفعلان
3FDU	<i>fa</i> عal- <i>atū</i>	فعلتا	<i>ta</i> -fعal- <i>āni</i>	تفعلان
1PL	<i>fa</i> عal- <i>nā</i>	فعلنا	<i>na</i> -fعal- <i>u</i>	نفعل
2MPL	<i>fa</i> عal- <i>tum</i>	فعلتم	<i>ta</i> -fعal- <i>ūna</i>	تفعلون
2FPL	<i>fa</i> عal- <i>tunna</i>	فعلتنَّ	<i>ta</i> -fعal- <i>na</i>	تفعلن
3MPL	<i>fa</i> عal- <i>ū</i>	فعلوا	<i>ya</i> -fعal- <i>ūna</i>	يفعلون
3FPL	<i>fa</i> عal- <i>na</i>	فعلن	<i>ya</i> -fعal- <i>na</i>	يفعلن

Table 1: Perfect and imperfect inflectional paradigms (active)

Those unfamiliar with Arabic may wish to note that the least morphologically complex form in the paradigms is the third-person, masculine singular of the perfect or s-stem, represented in standard unvowelled orthography by the root letters alone. Whereas speakers and scholars of Indo-European languages are most often used to referring to verbs by their infinitives, no direct equivalent exists in Arabic and thus the least complex form is used for citation purposes. Hence in succeeding chapters, and in

common with Wehr (1994), Wright (1967) and many others, when Arabic verbs are cited as examples the English translation will be given in the infinitive. Only when a distinction is necessary, such as in translating verbs in context, will the person, number, gender and tense/aspect of the citation form be explicitly rendered. Attention should also be drawn to the transliterations, in which the full classical pronunciations are given. However, modern speakers of the standard language will often not pronounce all the word-final short vowels and this will vary in context according to the onset of the word which follows the verb, but also stylistically as a matter of register and idiolect.

2.1.2 Derivational morphology

2.1.2.1 'Bilateral' verbs

Although some authors, for example McCarthy & Prince (1990a), prefer to identify and enumerate verbs derived from a separate class of bilateral roots, they will be treated here as trilateral roots having the same second and third radical consonants ($C_2 = C_3$). Al-Qahtani (2005:58-60) elaborates further upon why this assumption is reasonable diachronically, citing phonological processes. Synchronic observation reveals that while the citation form (s-stem, 3_{MSG}) of the verb in (2a) differs formally from a trilateral verb in which $C_2 \neq C_3$, when a suffix having an initial consonant is added to the s-stem, such as the first person singular in (2b), the familiar s-stem sequence is evident. This rule applies throughout the s-stem and p-stem paradigms and it could therefore be argued that identification of such verbs as bilateral is merely an artefact of choosing a paradigmatic form with a vowel-initial suffix as the citation form.

(2a)	حَبَّ	ضَرَبَ
	<i>Habba</i> ($C_2 = C_3$)	<i>Daraba</i> ($C_2 \neq C_3$)
	'he loved'	'he hit'
(2b)	حَبَبْتُ	ضَرَبْتُ
	<i>Hababtu</i>	<i>Darabtu</i>
	'I loved'	'I hit'

Thus, for the purposes of this chapter, verbal derivational morphology will be assumed, as is traditional, to be based upon trilateral and quadrilateral roots. The data referred to in Appendix I are also arranged accordingly.

2.1.2.2 Pattern I trilateral stems

In Table 1 the trilateral pattern I paradigm verb *فَعَلَ* (*fa'ala*) was used to exemplify inflectional morphology. Other pattern I variants exist having different vowelings on the middle radical in the s-stem. In verbs where this vowel is 'u' (*ضَمَّة* - *Damma*), the p-stem middle radical vowel is also 'u' and, where it is 'i' (*كَسْرَة* - *kasra*), the p-stem always has 'a' (*فَتْحَة* - *fatHa*). The possible combinations are shown in Table 2 with examples. While there is clearly some systematicity relating the p-stem vowel to its s-stem counterpart, opinions differ as to whether there is good synchronic evidence of syntactic or semantic consistency to the different vowelings schemes, suggesting a meaningful classification on this basis as per Wright (1967:I.30), or whether, as Badawi et al. (2004:60) claim, they are 'best treated as a lexical feature'. However, for the purposes of this chapter it is

sufficient to note their existence and to be aware that the vowelings may have some syntactic and/or semantic significance. In tabulated data (see Appendix I), I have used the labels Ia, Ii and Iu to distinguish trilateral pattern I verbs according to their s-stem vowelings.

s-stem middle vowel	p-stem middle vowel	s-stem		p-stem		
a	a	ذَهَبَ	<i>dhahaba</i>	يَذْهَبُ	<i>yadhhabu</i>	to go
a	i	ضَرَبَ	<i>Daraba</i>	يَضْرِبُ	<i>yaDribu</i>	to hit
a	u	كَتَبَ	<i>kataba</i>	يَكْتُبُ	<i>yaktubu</i>	to write
i	a	شَرِبَ	<i>shariba</i>	يَشْرَبُ	<i>yashrabu</i>	to drink
u	u	حَسُنَ	<i>Hasuna</i>	يَحْسُنُ	<i>yaHsunu</i>	to be good

Table 2: Pattern I variants (active)

2.1.2.3 Derived or augmented trilateral stems

Grammars of Classical Arabic, for example Wright (1967), identify fourteen derived trilateral patterns distinguished by Roman numerals II to XV, all of which exhibit modifications beyond that of pattern I, which we have already met. This system of numerical designations is generally favoured outside the Arab world, though many Arab grammarians continue to refer to the patterns by their traditional labels, which consist of the citation forms resulting from insertion of the consonants of the paradigm root **فعل** (*f-ع-l*) into the s-stem derivational templates. Table 3 presents all fifteen patterns, including their numeric and traditional word-form designations; templatic

representations of the stems are also provided. It should be noted that some forms are effectively obsolete in MSA: Wehr (1994) does not identify any examples of patterns XIII or XV, while XI, XII and XIV are also extremely rare in modern Arabic (see Table 10 on p.44). These patterns are therefore excluded from the analysis and discussion of data which follows, in which reference to pattern IX is also limited. Although in common use, pattern IX verbs are few in number and highly restricted semantically to colours and defects. Note in Table 3 that '(i)' represents a vowel which may either be regarded as present in the pattern but elided when pronounced postvocally, or as an epenthetic vowel supplied together with a leading glottal stop (*hamza*) to enable pronunciation when no vowel precedes, since all syllables must begin with a CV sequence and syllable-initial CC is disallowed. McCarthy & Prince (1990a:11-12) discuss this further, treating this phenomenon as an epenthetic syllable which is not properly part of the template. Comparison of these s-stem forms with their corresponding p-stems, where the leading syllable of the s-stem is absent both in speech and in orthography, lends credence to their position. Compare, for example, pattern VII in Tables 3 and 4. Attention is drawn in these tables to the vowelings of the augmented patterns II – XV: unlike pattern I which exhibits three variants of the middle radical vowel in both s- and p-stems, each of the augmented patterns has only one vowelings scheme in the s-stem and one in the p-stem; also, whereas all augmented pattern s-stems are vowelled throughout with 'a', p-stem vowelings, including that of the inflectional prefix, varies from pattern to pattern. For sake of completeness, it must also be noted that one form of expression of the passive in MSA involves predictable stem-internal vowel changes in both s- and p-stem forms. This will not be elaborated upon here,

Number	Pattern designation (citation form: 3MSG from s-stem)		Template (stem)
I	فعل	<i>fa ʿala, fa ʿila, fa ʿula</i>	$C_1aC_2aC_3, C_1aC_2iC_3, C_1aC_2uC_3$
II	فَعَّل	<i>fa ʿ ʿala</i>	$C_1aC_2C_2aC_3$
III	فاعِل	<i>fā ʿala</i>	$C_1āC_2aC_3$
IV	أفعل	<i>'af ʿala</i>	$'aC_1C_2aC_3$
V	تفَعَّل	<i>tafa ʿ ʿala</i>	$taC_1aC_2C_2aC_3$
VI	تفاعِل	<i>tafā ʿala</i>	$taC_1āC_2aC_3$
VII	انفعل	<i>(i)nfa ʿala</i>	$(i)nC_1aC_2aC_3$
VIII	افتعل	<i>(i)fta ʿala</i>	$(i)C_1taC_2aC_3$
IX	افعلّ	<i>(i)ff ʿalla</i>	$(i)C_1C_2aC_3C_3$
X	استفعل	<i>(i)staf ʿala</i>	$(i)staC_1C_2aC_3$
XI	أفعالّ	<i>(i)ff ʿālla</i>	$(i)C_1C_2āC_3C_3$
XII	افوعِل	<i>(i)ff ʿaw ʿala</i>	$(i)C_1C_2awC_2aC_3$
XIII	افعوّل	<i>(i)ff ʿawwala</i>	$(i)C_1C_2awwaC_3$
XIV	افعلل	<i>(i)ff ʿanlala</i>	$(i)C_1C_2anC_3aC_3$
XV	افعللى	<i>(i)ff ʿanlā</i>	$(i)C_1C_2anC_3ā$

Notes:

C_1, C_2 and C_3 (designated as *f*, *ʿ* and *l* by Arab grammarians) represent any of the 28 consonants of MSA, (with some phonotactic and combinatorial limitations).

(i): epenthetic vowel.

Other characters in template representations are fixed consonants and vowels as in transliterated text.

Table 3: Triliteral patterns I - XV (s-stem, active)

Number	Pattern designation	3MSG from p-stem	
I	فَعَلَ	يَفْعَلُ يَفْعِلُ يَفْعُلُ	yaf ع alu, yaf ع ilu, yaf ع ulu
II	فَعَّلَ	يُفَعِّلُ	yufa ع ع ilu
III	فَاعَلَ	يُفَاعِلُ	yufā ع ilu
IV	أَفْعَلَ	يُفْعِلُ	yuf ع ilu
V	تَفَعَّلَ	يَتَفَعَّلُ	yatafa ع ع alu
VI	تَفَاعَلَ	يَتَفَاعِلُ	yatafā ع alu
VII	انْفَعَلَ	يَنْفَعِلُ	yanfa ع ilu
VIII	اِفْتَعَلَ	يِفْتَعِلُ	yafta ع ilu
IX	اَفْعَلَّ	يَفْعَلُّ	yaf ع allu
X	اسْتَفْعَلَ	يَسْتَفْعِلُ	yastaf ع ilu
XI	اَفْعَلَّ	يَفْعَلُّ	yaf ع āllu
XII	اَفْعَوْعَلَ	يَفْعَوْعِلُ	yaf ع aw ع ilu
XIII	اَفْعَوَّلَ	يَفْعَوِّلُ	yaf ع awwilu
XIV	اَفْعَنَّلَ	يَفْعَنِّلُ	yaf ع anlilu
XV	اَفْعَنَّلَى	يَفْعَنِّلِي	yaf ع anlī

Table 4: Triliteral patterns I - XV (p-stem, active)

except to highlight that this supports the notion that vowel melody in Arabic is potentially morphemic i.e. meaning-bearing (McCarthy 1981; 1985; McCarthy & Prince 1990a), as explained more fully in Chapter 3.

2.1.2.4 Quadriliteral stems

Similarly, roots comprising four consonants give rise to a base pattern and three augmented patterns, also designated by Roman numerals. In order to distinguish these clearly from the trilateral patterns I have adopted the convention of prefixing the numeral with 'Q'. Pattern QIV is rare and QIII probably obsolete in MSA.

Number	Pattern (citation form)		Template (stem)
QI	فعل	<i>fa ʿlala</i>	$C_1aC_2C_3aC_4$
QII	تفعل	<i>tafa ʿlala</i>	$taC_1aC_2C_3aC_4$
QIII	افعلن	<i>(i)faʿanlala</i>	$(i)C_1C_2anC_3aC_4$
QIV	افعلّ	<i>(i)faʿalalla</i>	$(i)C_1C_2aC_3aC_4C_4$

Table 5: Quadriliteral patterns I - IV (s-stem, active)

Number	Pattern designation	3MSG from p-stem	
QI	فعل	يُفَعِّلُ	<i>yufa ʿlilu</i>
QII	تفعل	يَتَفَعِّلُ	<i>yatafa ʿlalu</i>
QIII	افعلن	يَفْعَلِّلُ	<i>yafaʿanlilu</i>
QIV	افعلّ	يَفْعَلِّلُ	<i>yafaʿalillu</i>

Table 6: Quadriliteral patterns I - IV (p-stem, active)

In Tables 5 and 6 the practice of traditional grammars, such as Wright (1967:I.48), in using **فعل** as the paradigmatic base pattern is retained, though it should not be inferred that this necessarily implies that the third and fourth radicals are identical, as the

templatic representation in Table 5 makes clear.

2.1.2.5 Morphological connections

It will be useful to observe at this stage that certain triliteral and quadriliteral patterns share morphological features. Some of the issues raised here bear further investigation.

2.1.2.5.1 The putative 't' affix

Patterns V, VI, VIII, X and QII share the consonant 't' as part of their template, distinct from the root consonants. Application of conventional concatenative morphology to the pairs II and V, III and VI and QI and QII would suggest that 't' or 'ta-' is a prefix which derives the second member of the pair from the first and is thus morphemic in nature, raising a number of questions. Does prefixed 't' consistently carry a semantic burden or fulfil a syntactic function across these patterns as well as being formally consistent, such that it is identifiably morphemic? Is 't' in patterns VIII and X an infix version of the same morpheme and, if so, to which base patterns do these relate? Alternatively, is infix 't' a different morpheme altogether?

2.1.2.5.2 Shared vowel melody

Observe again the pairs II and V, III and VI and QI and QII: the unprefix members of each pair all share the p-stem vowel melody 'u – a – i', while the corresponding 't' prefixed patterns share the vowel melody 'a – a – a – a'. It has already been noted, following McCarthy (1981) and McCarthy & Prince (1990a), that vowel melody in Arabic may be morphemic. This may therefore suggest that II, III and QI and their 't'

prefixed counterparts may share common semantic features. Likewise, VII, VIII and X (and indeed many of the higher forms) also share the p-stem vowel melody 'a – a – i', suggesting that there may be a common semantic component here too.

2.1.2.5.3 Alternative classification scheme

It is possible to reclassify the Arabic verbal patterns on the basis of their morphological features. This is particularly helpful for Semiticists working cross-linguistically, facilitating reference to cognate forms. Table 7 is based on such a scheme by MacDonald (1963), classifying patterns I to X (excluding IX). MacDonald describes *G*, *D*, *C* and *N* as the basic patterns from which other Semitic patterns derive. The *L* pattern is treated as a special case of *D* and hence represented as subsidiary to it, following O'Leary (1969:217), who views the lengthened vowel as resulting from failed consonantal gemination. Observe that the right-hand section of the table contains the patterns modified with 't'. It should be noted that certain other Semiticists, such as Ryder (1974), refer to *G* (Grund) as the *B* (base) stem.

ground	<i>G</i>	I		<i>Gt</i>	VIII
doubled	<i>D</i>	II		<i>Dt</i>	V
[lengthened]	[<i>L</i>]	III		[<i>Lt</i>]	VI
causative	<i>C</i>	IV		<i>Ct</i>	X
<i>na</i> -reflexive	<i>N</i>	VII		<i>Nt</i>	?

Table 7: Patterns classified according to morphology (after MacDonald 1963:100)

MacDonald, a university lecturer, saw didactic advantages in this classification,

though it is not unproblematic. Firstly, as a matter of consistency in nomenclature, *C* is a semantic label, not a morphological one, and risks prejudging the meaning associated with the form, as discussed more fully in Chapter 4. Use of the designation *S* (or \check{S}) for pattern IV is probably preferable on these grounds, though this is morphologically more typically Eastern Semitic and results in terminological opaqueness for pattern IV, though not for X, which would become *St* in this scheme. Leemhuis (1977) prefers to designate IV as *H* which is typically Western Semitic, but has the disadvantage of opaqueness for both patterns IV and X. It is not appropriate to discuss the Semitic origins of pattern IV here, nor the question of whether pattern X is its 't' derivative: I explore these issues further in Danks (2007). Another consequence of arranging the patterns in this scheme is that there is an assumption that all the 't' derivatives share a morpheme, whether prefixed or infix, i.e. that they share a common semantic component realised by 't'. MacDonald (1963:104) refers to it as 'reflexive *ta-*', which is indicative that his scheme classifies patterns V, VI, VIII and X not purely according to morphological form but also on semantic grounds, the validity of which is at best questionable, as the diversity of tabulated meanings in Chapter 4 will testify. However, perhaps the most obvious flaw in this scheme is to regard *N* as a basic pattern, leading to the notable absence of any pattern *Nt* in Classical or Standard Arabic, though O'Leary (1969:226) identifies a pattern in the dialect of Tlemcen (North-Western Algeria) which is formally, if not necessarily semantically, a candidate for *Nt*. Indeed, MacDonald's designation of *N* and 't' as both reflexive highlights the difficulty and there may be grounds to suggest that pattern VII might more helpfully be included in this scheme as a derivative of *G*, hence *Gn*.

2.2 Distribution of verbal patterns in the lexicon

The hypothesis that certain verb patterns in MSA are morphologically related was introduced above. This is relatively uncontroversial inasmuch as it is self-evident from examination and comparison of formal realisations. Moreover, it is a key concept in morphology that a morpheme is a meaning-bearing unit of language, an indivisible unit of morph and seme: Saussure's *signifiant* and *signifié*, or form and meaning.

It has already been stated that, subject to certain phonological and combinatorial constraints, a root consisting of any combination of three or four consonants can combine with any of the corresponding verbal pattern templates to produce a verb. In practice, however, no root gives rise to verbs on all possible patterns, not even on each of the nine most common. It is conceivable that the distribution of verb forms within the lexicon is entirely random. If, however, morphological relationship implies not just commonality of form but also commonality of semantics, we should see a degree of organisation to the lexicon, resulting in significantly greater than chance co-occurrences of patterns for a given root where one is derived from another. Furthermore, we would expect to be able both to identify morphemes formally and to characterise them semantically on the basis of how they derive verbs from the roots with which they combine.

2.2.1 Data collection

In order to investigate the distribution of verbs within the lexicon according to root and pattern, it was necessary to undertake an exhaustive survey of trilateral and quadrilateral roots, not merely to record the number of verbs in each pattern (these figures are

available elsewhere: see section 2.2.2), but to provide a comprehensive 'map' of how verbs in various patterns occur together for the same roots.

2.2.1.1 Method

Using Wehr's Dictionary of Modern Written Arabic (1994), a comprehensive listing of all trilateral roots which give rise to verbs in one or more patterns was compiled (including roots in which the second radical is doubled) in the form of a spreadsheet. All attested verbal patterns in the range I to X (excluding IX) for each root were tabulated, and instances of the other six possible morphological forms noted where applicable. The exercise was repeated for quadrilateral roots giving rise to one or more of patterns QI to QIV. A small extract from the table of trilateral data is reproduced as Table 8. Note that root consonants appear in left-right order; where C2 is doubled, the root appears in the table with C3 = C2 but conforms to the dictionary ordering; under the respective patterns, '1' indicates that the verb is attested and a blank cell indicates not attested; multiple root entries are dealt with in section 2.2.1.2.2. Appendix I provides a full listing of data tables generated as part of this research together with details of how they may be consulted.

C ₁	C ₂	C ₃	I	II	III	IV	V	VI	VII	VIII	X	Entry	Other patterns
ج	و	وق		1									
ج	و	و	1			1	1				1		
ج	ي	ي	1	1		1							
ج	ي	ي	1			1							
ج	ي	ي	1	1			1						IX
ج	ي	ي	1		1	1		1	1	1			
ج	ي	ي	1	1	1	1	1	1			1		
ج	ه	ه				1							
ج	ج	ج	1								1		
ج	ج	ج	1										
ج	ج	ي	1		1	1	1	1		1	1		
ج	ج	و	1	1	1								
ج	س	ه	1		1					1			
ج	س	و				1							
ج	س	س	1										
ج	س	ه	1			1				1		1	
ج	س	ه	1		1							2	
ج	ر	ج	1	1	1	1	1						
ج	ر	س	1	1		1	1						
ج	ر	ر		1									
ج	ر	س	1			1							
ج	ر	و	1			1	1						

Table 8: Extract from data tabulated by root and pattern

2.2.1.2 Lexical issues

Modern Standard Arabic presents unique lexicological challenges. What does 'modern' mean for a language which relies for its grammatical forms and much of its lexicon upon a classical language preserved with only minor changes since the 6th Century, due to its daily use by Muslims in the form of the Qur'an? What does 'standard' mean for a language spoken in a diverse range of dialects across a large swathe of North Africa and the Middle East? If we define MSA as the contemporary language of literature and official communication which is common to separate nation states throughout the region, this at least presents a realistic target for the lexicographer. Although it may only be practical to produce a dictionary of the written language, this effectively defines what is 'standard' for the spoken language also.

Arabic, as a language with a dual system of communication (diglossia) confronts the lexicographer with a variety of unexpected problems whose solution is not always easy.... Before venturing any further step, the lexicographer had [sic] to solve the cardinal question: What is [Modern Written Arabic] and what should its lexicon look like? Or, in other words, the lexicographer has to define the identity of MWA in terms of its lexicon. (Drozdík 1998:211-212)

Insofar as the current task of comprehensive data collection is concerned the reservations which follow are noted, but for practical purposes cannot reasonably be addressed. However, as closer examination of specific examples is undertaken it may be appropriate to revisit these issues.

2.2.1.2.1 Choice of dictionary

It is recognised that the method of data collection employed here relies solely upon a single dictionary. However, Wehr's work, consulted here in translation from the original German, commands considerable respect:

The excellence of Wehr's Arabic-German dictionary was recognized in leading centers of Arabic studies almost immediately after the appearance of the first edition (1952). The dictionary, compiled on sound lexicographical principles, presents the vocabulary and basic phraseology of Modern Written Arabic (MWA), sometimes referred to as Modern Standard Arabic, the only codified variant of present-day Arabic and the only one with an indisputable pan-Arab validity. (Drozdík 1998:211)

The magnitude of the task of manually cross-checking every entry in a range of other dictionaries would place it outside the scope of this research project. Moreover, Wehr has been the choice of others who have undertaken similar surveys (McCarthy & Prince 1990a; Al-Qahtani 2003, 2005), which also has the merit of allowing comparisons to be drawn.

2.2.1.2.2 Homomorphous (homonymous) roots

Where Wehr has listed more than one entry for a particular root combination, and two or more of these give rise to verbs, I have made separate, annotated entries in the data table e.g. *تخم* (*t-kh-m*) in Table 8. The rationale behind Wehr's treatment of these roots does allow that possible inconsistencies will result:

In the presentation of the entries in the dictionary, homonymous roots are given separately in only a few especially clear instances. The arrangement of word entries under a given root does not necessarily imply etymological relationship. Consistent separation was dispensed with because the user ... will not generally be concerned with Semitic etymology. (Wehr 1994:x)

Thus, Wehr's decision to list separately or under a single entry may appear arbitrary.

For example, there are two entries for the root combination **وزر** (*w-z-r*), which I have tabulated accordingly (data extracted in Table 9). The verbs under entry 1 share a common meaning involving bearing or taking on a burden or sin (**وزر** – *wizr*) and thus the decision to include them together seems justified. Likewise, the verbs formed on patterns V ('to become a minister') and X ('to appoint as minister') are classified under a separate entry, presumably identifying a denominative derivation from **وزير** (*wazīr* – 'a minister'). However, a complication arises in pattern VIII, where the verb can mean 'to commit a sin' or 'to wear a loincloth'. We might speculate that Wehr's decision to include **وزرة** (*wizra* - 'a loincloth') under entry 1 is motivated by a connection both in the Qur'an (7:22,26) and in the Hebrew scriptures which predate it (Gen. 3:7,21), where the sin of Adam and Eve results in their being clothed, initially with leaves and subsequently with garments. In fact the word **وزرة** (*wizra*) itself is to be found nowhere in the Qur'an, though a later link cannot be discounted. Thus it seems reasonable to assume that this is an example where Wehr has included the meaning together with others in the absence of clear etymological evidence to the contrary. We should be wary of making fanciful connections diachronically, and in any case it is clear that this meaning of the pattern

VIII verb is incongruous synchronically, thus it appears that it deserves a separate entry. For reasons of practicality Wehr's classifications have been retained for the purposes of data collection, though it should be considered in later chapters, where the focus is on semantics, that there are often grounds for separating entries which have heretofore been treated together.

C ₁	C ₂	C ₃	I	II	III	IV	V	VI	VII	VIII	X	Entry	Other patterns
و	ز	ر	1		1	1		1		1		1	
و	ز	ر					1				1	2	

Table 9: Multiple entries for the root combination *w-z-r*

2.2.1.2.3 Colloquialisms

It must be accepted that there will be many instances where dialectal words or colloquialisms are in regular use in the standard language, often restricted by country or region. Again Wehr elaborates on this issue in his introduction (1994:viii), and the decision was therefore taken that all entries considered by Wehr to merit inclusion in a *Dictionary of Modern Written Arabic* should also be included in the table here.

2.2.1.2.4 Synchronic gaps, classicisms and semantic change

Only a few verb forms are precluded on purely morphological grounds: for example, roots beginning with *ḥ* (*n*) do not combine with pattern VII which utilises prefixed 'n'. Thus non-appearance of a given verb form in Wehr is not proof that it is not possible, has never been in use or is not in current use somewhere within the Arabic-speaking

continuum. Conversely, attestation in the dictionary does not prove that a given form is in true synchronic usage, as, concerning classicisms, Wehr (1994:ix) comments that 'Arab authors can and do frequently draw upon words which were already archaic in the Middle Ages' including 'quotations from the Koran or from classical literature' and therefore admits that 'it is not possible to make a sharp distinction between living and obsolete usage'. Moreover, there is the related problem that where a pattern is attested for a root, there may be discrepancies between its synchronic and classical semantic and syntactic usages.

2.2.2 Comparison of data with existing sources

I have already alluded to data collected and published by McCarthy & Prince (1990a) and Al-Qahtani (2003, 2005). Summaries of their data, together with my own totals, are presented in Table 10, which includes explanatory notes on some of the totals calculated from Al-Qahtani's figures. His methodology at times seems at odds with a synchronic, descriptivist perspective:

There are drawbacks in studying Arabic verbs in isolation from the numerous studies conducted by Arab grammarians. This work has been done after careful reading and consideration of their work, including contemporary works done by those who were trained on the traditional framework of Arabic linguistics and philology. What they have in common is that their studies on Arabic verbs are based on logic and prescriptivism. (Al-Qahtani 2005:53)

Although his system of classification reveals some unusual assignments and at times

cuts across well-established morphological categories, with the exception of the number for pattern II, where he strangely includes QII verbs, the totals calculated from Al-Qahtani's data are otherwise close to mine. A possible explanation for the minor discrepancies seen in the other totals is that Al-Qahtani used as his source the 1974 reprint of the 3rd Edition of Hans Wehr's dictionary as opposed to my use of the 1994 reprint of the 4th Edition, which includes additional material.⁶ This, and the fact that Al-Qahtani states that he has excluded 'verbs ... coming from dialects such as Egyptian or Syrian, for example' (2005:55), explains why my totals are consistently somewhat higher. It is less clear why there are discrepancies between Al-Qahtani and McCarthy & Prince, since the latter cite a 1971 printing of Wehr, which is also the 3rd edition. Particularly striking, and unexplained, is pattern V, where my total and Al-Qahtani's agree closely, while that of McCarthy & Prince is very different. In the table of quadrilaterals my significantly higher total for pattern QII may be attributable to its productivity for borrowings, reflected in new entries in the 4th Edition of the dictionary.

⁶ For the complex publication history of Wehr's dictionary in both German and English editions see Drozdík (1998).

pattern	AL-QAHTANI			McCARTHY & PRINCE			DANKS
	'main entry'	'derived'	total	biliteral	triliteral	total	total
I			2512*	270	2299	2569	2523
II	290	1189	1479**	127	1271	1398	1416
III	27	428	455	18	445	463	465
IV	47	879	926	78	873	951	938
V	41	899	940	85	940	1025	953
VI	5	370	375	17	377	394	389
VII	7	244	251	31	229	260	267
VIII	12	578	590	68	553	621	606
IX	2	16	18	0	18	18	19
X	4	389	393	34	355	389	395
XI	0	2	2	0	2	2	2
XII	1	6	7	N/A	7	7	7
XIV	0	1	1	N/A	2	2	1
	total			total			total
QI	275			296			294
QII	**			111			131
QIII	***			1			1
QIV	3****			8			8

Notes:

- Al-Qahtani records his data in *Semantic Valence of Arabic Verbs* (2005:54-90), referring to the list of 8327 verbs published as *A Dictionary of Arabic Verbs* (2003).
- The counts by McCarthy & Prince are taken from their article *Prosodic Morphology and Templatic Morphology* (1990a:33-34).
- No verbs in patterns XIII and XV are recorded in any of the three counts.

* This total was obtained by adding the figures for what Al-Qahtani terms biliteral and triliteral 'ground' verbs and subtracting 99 which he has listed separately due to medial vowel variants (2005:65).

** Al-Qahtani has included the *ta-* prefixed quadrilateral derivative verbs, elsewhere designated QII, in his figures for pattern II. He does not, however, enumerate them separately.

*** Al-Qahtani does not state where the total for this pattern has been included, if anywhere.

**** This figure comprises verbs included by Al-Qahtani under the heading 'quintilateral'

Table 10: Lexical frequencies for triliteral and quadrilateral patterns

2.2.3 Quantitative analysis of the data

There are a number of ways to analyse the raw data in order to gain insights into how patterns occur by root.

2.2.3.1 Productivity by root

Table 11 shows the total numbers of trilateral and quadrilateral roots and the numbers of verbs derived from them, enabling the mean number of patterns represented per root to be calculated. Tables 12 and 13 show frequencies for patterns per root for trilaterals and quadrilaterals respectively. Roots which do not give rise to verbs have not been included in the data, i.e. those with zero actual patterns per root, thus mean patterns per root values must be interpreted accordingly. No trilateral roots were found to give rise to verbs in more than nine patterns and no quadrilateral roots in more than three. The distribution of roots in these tables shows that relatively few are highly productive, while the category which is most numerous (more than one-third of trilateral roots and over three-quarters of quadrilateral roots) is that which represents only one pattern per root. Thus lexical gaps, consisting of unused patterns for given roots, are numerous.

	No. of roots	No. of verbs	Mean patterns / root
Trilateral	2963	7981	2.69
Quadrilateral	350	434	1.24

Table 11: Mean patterns per trilateral and quadrilateral roots

Actual patterns / root	1	2	3	4	5	6	7	8	9
No. of roots	905	696	532	377	246	124	62	17	4
Percentage	37.1	23.5	18.0	12.7	8.3	4.2	2.1	0.6	0.1

Table 12: Actual patterns per trilateral root

Actual patterns / root	1	2	3
No. of roots	267	82	1
Percentage	76.3	23.4	0.3

Table 13: Actual patterns per quadrilateral root

2.2.3.2 Productivity by pattern

Of greater interest is productivity by pattern. Tables 14 and 15 reproduce my data from Table 10, together with percentages of roots represented by each pattern. It must be remembered that these figures can only reflect how productive a pattern has been in the language up to this point in time. They cannot necessarily predict whether a pattern will be more or less productive in the future for neologisms and borrowings.

pattern	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIV
freq.	2523	1416	465	938	953	389	267	606	19	395	2	7	1
% of roots	85.2	47.8	15.7	31.7	32.2	13.1	9.0	20.5	0.6	13.3	0.1	0.2	0.0

Table 14: Percentage productivity by trilateral pattern

pattern	QI	QII	QIII	QIV
frequency	294	131	1	8
% of roots	84.0	37.4	0.3	2.3

Table 15: Percentage productivity by quadrilateral pattern

2.2.3.3 Co-occurrence of patterns

2.2.3.3.1 Overview

Clearly from the statistics presented above, some patterns occur more commonly in the lexicon than others. Since phonological constraints are minimal, it is likely that the frequency with which a pattern occurs depends on how semantically or syntactically 'useful' it is. Nevertheless, if the patterns are all independent of one another, we would expect to see them distributed randomly amongst the roots. My data from Table 14 may be used to calculate predicted frequencies for co-occurrence based on such a random distribution. For example, if 31.7% of trilateral roots form a verb on pattern IV and 13.3% on pattern X, random distribution predicts that $31.7\% \times 13.3\% = 4.2\%$ of roots will form verbs on both patterns. By comparing actual co-occurrence figures with these predictions it will be possible to identify which patterns have a tendency to occur together or to be mutually exclusive.

Table 16 contains actual co-occurrence frequencies derived from my raw data for all pairs of patterns from I to X, excluding pattern IX which, together with the higher patterns, is excluded from further analysis as their frequencies are too low to be reliably tested for statistical significance. In Table 17 predicted frequencies are presented as calculated above. There are some striking differences between predicted and actual co-occurrences, for example for the morphologically related patterns III and VI, but there

appear to be other more unexpected correlations, including those involving patterns VIII and X with III and VI. However, it is not sufficiently rigorous to base conclusions concerning co-occurrences on the raw data presented in these tables. In order to assess the likelihood that co-occurrences are real phenomena and not mere coincidences and to quantify the degree of correlation, the data must be examined for statistical significance.

	I	II	III	IV	V	VI	VII	VIII	X
I									
II	1130								
III	416	258							
IV	853	558	216						
V	816	661	196	379					
VI	359	230	238	193	172				
VII	256	136	54	98	116	41			
VIII	567	318	183	245	274	160	75		
X	365	265	128	267	211	130	32	128	

Table 16: Actual co-occurrence frequencies (trilaterals)

	I	II	III	IV	V	VI	VII	VIII	X
I									
II	1206								
III	396	222							
IV	799	448	147						
V	811	455	150	302					
VI	331	186	61	123	125				
VII	227	128	42	85	86	35			
VIII	516	290	95	192	195	80	55		
X	336	189	62	125	127	52	36	81	

Table 17: Predicted co-occurrence frequencies (trilaterals)

2.2.3.3.2 Chi-square test methodology

The chi-square test is particularly suitable for frequency data where the linguist wishes to compare actual frequencies with those predicted by a particular hypothesis. For two independent variables A and B, each of which can be present or absent (designated here as + or - respectively), a 2 by 2 table is constructed, and data tested for significance according to the method outlined here (Butler 1985:118-121; Connor-Linton 2003). Actual frequencies for each of the four logical possibilities are inserted into the table template (Table 18), then predicted frequencies (assuming a null hypothesis of no relationship between the variables) are calculated as in Table 19:

where:

C = actual frequency of (A+ and B+)

D = actual frequency of (A+ and B-)

E = actual frequency of (A- and B+)

F = actual frequency of (A- and B-)

Actual frequencies	A+	A-
B+	C	E
B-	D	F

Table 18: Chi-square testing: 2 by 2 table template for actual frequencies

Predicted frequencies	A+	A-
B+	$(C+D)(C+E) / (C+D+E+F)$	$(E+F)(C+E) / (C+D+E+F)$
B-	$(C+D)(D+F) / (C+D+E+F)$	$(E+F)(D+F) / (C+D+E+F)$

Table 19: Chi-square testing: 2 by 2 table template for calculating predicted frequencies

The chi-square (χ^2) value is calculated according to the following formula:

$$\chi^2 = \sum \frac{(\text{actual} - \text{predicted})^2}{\text{predicted}} \quad \text{for each of the four cells in the table}$$

Significance can now be tested at various levels, by comparing the calculated chi-square value with standard values. For 2 by 2 tables the parameter df (degrees of freedom) = 1. Some of the relevant standard values are reproduced in Table 20, in which significance at a given probability requires calculated chi-square to be greater than or equal to the standard value. The probability level represents the null hypothesis, namely that there is no relationship between the variables. Thus, for example, if the calculated chi-square value lies between 10.83 and 15.14, the probability that the variables are independent is somewhere between one chance in 1000 and one in 10,000, or conversely there is a greater than 99.9% probability that they are related.

probability level	0.05	0.01	0.001	0.0001
χ^2	3.84	6.64	10.83	15.14

Table 20: Standard values of χ^2 with $df = 1$ (Harter 1964:234-239)

In addition to the chi-square value, a related parameter, the phi coefficient (Φ) can be calculated (Butler 1985:148-149):

$$\Phi = \frac{(CF-DE)}{\sqrt{((C+E)(D+F)(E+F)(C+D))}}$$

Whereas chi-square gives a measure of the probability that the variables are

related, the phi coefficient measures to what degree the variables are related, either positively or negatively: the greater the magnitude of Φ , the greater the degree of correlation.

2.2.3.3.3 Chi-square and phi coefficient values for trilateral pattern co-occurrences

Table 21 shows example data for the actual numbers of roots with patterns III and VI present or absent and (in square brackets) the predicted values for the same combinations of these variables, calculated according to Table 19. Chi-square and phi coefficient values have also been calculated according to the formulae given, and probability values obtained from standard chi-square tables (Harter 1964:234-239).

	+ pattern III	- pattern III
+ pattern VI	238 [61.05]	151 [327.95]
- pattern VI	227 [403.95]	2347 [2170.05]

Chi-square (χ^2) = 700	Probability (p) < 0.0001	Phi coefficient (Φ) = 0.49
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Table 21: Chi-square calculation for co-occurrence of patterns III and VI

In Table 22 values of χ^2 , p and Φ have similarly been generated for all combinations of patterns I-VIII and X. Some general observations concerning the interpretation of these values will be helpful.

Firstly, the majority of cells in the table show extremely low values for p, even though the associated phi coefficients may be relatively low. This is because the data set is large, so even for weakly correlated patterns, the probability that they are unrelated is

small. In high-risk situations, such as medical trials for an expensive new drug or indeed in comparing texts in forensic linguistics, it is customary to set a low value for p when looking for statistical significance. For our purposes, where the consequences of misidentifying a correlation are relatively minor, specifying a value of $p < 0.01$ (a 99% probability that a correlation is not random) is highly conservative. Even on these stringent grounds, only six of the 36 combinations of pattern pairs fail the test for significance of co-occurrence. We may therefore state with a considerable degree of certainty that the distribution of verbs according to morphological patterns in the lexicon is not random: there must be morphosyntactic and / or morphosemantic factors which give rise to these correlations. This may not be surprising news to scholars of Arabic, but it is objective evidence of form- meaning relationship in the verbal system of MSA and an encouragement to pursue further investigation.

Secondly, care must be taken in interpreting the phi coefficient, which represents the degree to which variables are correlated but does not in itself establish cause and effect. Butler (1985:149-150) uses an example in which the height of school pupils correlates highly with their scores in tests. Here there is a third variable – age – which has a causal effect on both the other variables. The phi coefficients in Table 22, also represented graphically for ease of comparison in Fig.1, confirm a high degree of correlation, as expected, between patterns which bear close morphological relationships such as [III and VI] and [II and V]. The value for [IV and X] lends support to the less obvious derivational relationship here also.⁷ These three pairs give rise to the largest phi coefficients highlighted in bold type in the table. However other pairs also show a relatively high degree of correlation, for example [VI and VIII]. This indicates that the

⁷ See also Danks (2007).

presence of a pattern VI verb for a given root is a relatively good predictor that the root will also have a verb in pattern VIII and vice-versa.

	I	II	III	IV	V	VI	VII	VIII	X
I									
II	(61.3) <.0001 [-0.14]					(chi-square χ^2) probability p [phi coefficient Φ]			
III	(8.11) <0.01 [0.05]	(13.1) <0.001 [0.07]							
IV	(36.4) <.0001 [0.11]	(75.3) <.0001 [0.16]	(55.2) <.0001 [0.14]						
V	(0.25) >0.2 [0.01]	(262) <.0001 [0.30]	(25.2) <.0001 [0.09]	(42.7) <.0001 [0.12]					
VI	(18.0) <.0001 [0.08]	(23.1) <.0001 [0.09]	(700) <.0001 [0.49]	(66.7) <.0001 [0.15]	(29.8) <.0001 [0.10]				
VII	(26.7) <.0001 [0.09]	(1.17) >0.2 [0.02]	(4.55) <0.05 [0.04]	(3.45) <0.1 [0.03]	(17.1) <.0001 [0.08]	(1.28) >0.2 [0.02]			
VIII	(42.7) <.0001 [0.12]	(6.70) <0.01 [0.05]	(121) <.0001 [0.20]	(27.1) <.0001 [0.10]	(59.5) <.0001 [0.14]	(117) <.0001 [0.20]	(10.5) <0.005 [0.06]		
X	(19.0) <.0001 [0.08]	(68.0) <.0001 [0.15]	(96.2) <.0001 [0.18]	(272) <.0001 [0.30]	(94.4) <.0001 [0.18]	(156) <.0001 [0.23]	(0.46) >0.2 [-0.01]	(40.0) <0.0001 [0.12]	

Table 22: χ^2 , p and Φ values for co-occurrences of trilateral patterns

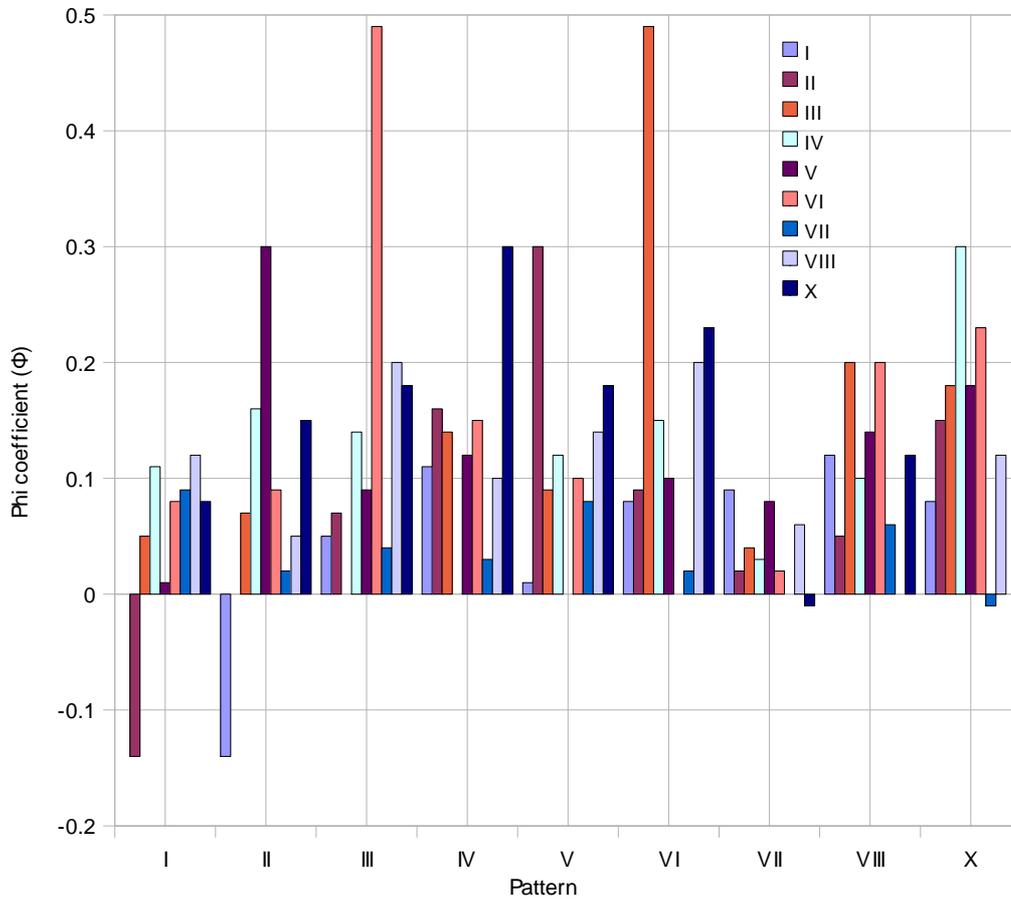


Fig. 1: Graphed phi coefficients for pattern co-occurrences (trilaterals)

However, it does not imply that a causal relationship exists between these two patterns. In fact, both patterns independently show relatively high correlation with pattern III, so it is possible for example that III and VI are related morphologically while III and VIII are related syntactically or semantically. Quantified correlations allow claims which are not always backed by data to be assessed for validity. For example, McCarthy & Prince (1990a:34) state that 'Form 5 ... tends to occur only together with roots having Form 2..., Form 6 with Form 3, and Form Q2 with Q1'. Although this statement is perhaps phrased too strongly and the use of the word 'only' is ambiguous, the tendency they

identify is supported by my data for the trilaterals.⁸ However, they also claim that '[t]his dependency between different conjugations ... is otherwise unknown in the Arabic verb system', though my figures demonstrate that the correlation between patterns IV and X is as strong as that between II and V. What we can say is that the correlations which exist between specific patterns certainly merit further investigation and explanation.

Lastly, a word on the phi coefficients for [I and II] and [VII and X], which are the only two negative values in the table. The latter pair shows a barely negative correlation, which is not statistically significant and would therefore not be worthy of further discussion, were it not that McCarthy & Prince (1990a:38) have claimed a negative correlation for this pair, stating that '[t]he scarcity of roots that take both 7 and 10 is significant at the .05 level'. Similarly, they suggest that roots avoid forming verbs in both patterns VII and VIII, whereas I demonstrate a strong likelihood of a small positive correlation. Clearly they have taken the trouble to analyse their data statistically, but since their methodology is not discussed it will not be possible to speculate as to the difference in their findings. However, it is worth noting that patterns I and II are to some degree negatively correlated according to my data, i.e. that there is some tendency for them not to occur together. It is likely that this is largely due to the fact that these are the two patterns most likely to occur in isolation: there are 636 roots which only exist in pattern I and 160 only in pattern II.

2.2.3.3.4 Quadrilateral pattern co-occurrences

Thus far we have excluded quadrilateral pattern co-occurrences from the discussion. With only four patterns in total, two of which are rare in the lexicon, the only co-

⁸ See section 2.2.3.3.4 for discussion of the quadrilaterals.

occurrence relationship which is suitable for statistical treatment is [QI and QII], although this relationship is of particular interest for its analogy to [II and V] and [III and VI] as discussed in section 2.1.2.5.1. Examination of the calculated values in Table 23 reveals that it is almost certain that the two patterns are quite highly negatively correlated, i.e. that QII has a tendency to occur independently of QI with significantly greater than chance frequency. This is somewhat surprising and in direct contradiction of the claim made by McCarthy & Prince (1990a:34). The considerably higher dictionary count for QII in my data, based on a more recent edition of Wehr, may be partially responsible for the discrepancy, particularly in terms of its productivity for new borrowings, but further speculation is again impossible without access to the methodology of McCarthy & Prince.

	+ pattern QI	- pattern QI
+ pattern QII	82 [110.04]	49 [20.96]
- pattern QII	212 [183.96]	7 [35.04]

Chi-square (χ^2) = 71.4	Probability (p) < 0.0001	Phi coefficient (Φ) = -0.45
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Table 23: Chi-square calculation for co-occurrence of patterns QI and QII

2.3 Summary

The verbal morphology of MSA is highly systematic and lends itself to quantitative analysis which reveals non-random distributions of verbal patterns by root within the lexicon. Some of these distributions are attributable to morphological dependencies between patterns whilst others suggest that semantic or syntactic factors may be

responsible. Several significant correlations have been identified which merit further study.

Chapter 3

Alternative morphologies

It is clear from the introduction to Arabic verbal morphology in Chapter 2 that it displays both a high level of systematicity and a complexity of interactions between morphological components. Thus conventional concatenative morphology⁹ has traditionally been rejected in favour of a root-and-pattern model which is distinctive of Semitic languages. Before we proceed to examine verbal semantics in Chapter 4, some issues concerning the validity of the root-and-pattern approach will be addressed.

3.1 Alternatives to the Arabic root as the primary basis of derivation

The most basic assumption made in Chapter 2 is that the root sequence is the foundation for Arabic word formation. On this basis, the system of verbal patterns was introduced, in which it was shown that trilateral roots are most commonly encountered, with quadrilateral roots also occurring. We have also briefly observed in 2.1.2.1 that what appear to be biliteral roots adopt the trilateral patterns, where C₂ also fills the C₃ position and gemination occurs where phonologically appropriate.

Ussishkin (2006:37) remarks that '[t]he consonantal root is not a construct of modern, generative linguistics. Grammarians as far back as the Middle Ages, if not

9 Concatenative morphology is also described by Bauer (2003:214) as the 'linear approach [in which] the morphs are accounted for in terms of their ordering in time (or on the page)'. Sproat (1992:44) explains and exemplifies concatenative morphology thus:

The simplest model of morphology that one can imagine is the situation where a morphologically complex word can be analyzed as a series of morphemes concatenated together. This situation obtains in ... *antidisestablishmentarianism*, which we can analyze as being composed of morphemes strung together like beads on a string.

earlier, had based their work on various Semitic languages on the consonantal root.' As a native speaker of Modern Hebrew and psycholinguist, Shimron appeals not only to centuries of scholarship but to intuition in support of the Semitic root:

The root-template construct has traditionally appeared as a central morphological structure of Semitic language because firstly ... the root and the templates are indeed there, in Semitic words, and cannot be simply overlooked. But it is also the result of a long history of linguistic research...

(Shimron 2003b:4)

However, although the centrality of the root in word formation has formerly been widely assumed by grammarians of Arabic, comparative Semiticists and most theoretical linguists, for example Greenberg (1950), its status and even the reality of its existence have more recently been called into question. The debate is both lively and current, largely between proponents of the root-based approach and those who espouse a word- or stem-based approach to Arabic (and indeed Semitic) morphology, with many significant papers appearing in the last decade. For example, Shimron's (2003a) volume opens with the editor's own chapter (Shimron 2003b), which not only may be profitably consulted as a summary of the traditional view of Semitic morphology, but also introduces the debate which follows, as the volume includes contributions from notable opponents of the root such as Bat-El, Heath and Benmamoun. However, adding to this already complex discussion, and somewhat separate from it, is the 'etymon-based' approach to lexical organisation proposed by Bohas (2006), which will be briefly discussed in section 3.1.2.

3.1.1 Word- and stem-based approaches

The essential principle of word- and stem-based approaches is that word formation in Arabic is based upon fully vocalised words or stems,¹⁰ contrasting with the root-and-pattern model in which the consonantal root, an abstract discontinuous morpheme, is the basic morphological unit. Accompanying this, there is often an underlying suggestion that the long-standing and once ubiquitous reliance upon the consonantal root as the base morpheme may, at least in part, be an artefact of traditional Arab lexicographic conventions. Bat-El (2003:40-41), who claims that 'the consonantal root is a traditional notion' and that 'tradition should be respected by all means, but not at the cost of masking scientific inquiry', also remarks that Brockelmann explicitly expressed the view that the root is a mere lexicographic convenience over a century ago. Larcher is among those who have expressed similar views more recently:

La plupart des arabisants sont convaincus ... que si la «racine» sert d'entrée aux articles des grands dictionnaires arabes traditionnels et, à leur suite, arabisants, c'est parce qu'elle sert pareillement d'entrée à la dérivation lexicale ... De même, un coup d'oeil dans les grands dictionnaires montre que la «racine» est une entrée purement formelle.... (Larcher 1999:103)

Whilst proponents of fully vocalised words or stems as the basis of derivation are agreed that the Semitic root is not the fundamental morpheme, they diverge on exactly what to replace it with. Thus while Heath (2003:116) envisages 'a core of underived stems, e.g. the singular of simple nouns and the imperfective of simple verbs [which]

10 With vowels inserted and thus pronounceable.

can be fed into derivational processes that produce derived stems', Benmamoun (1999, 2003b) emphasises the central role of the imperfective (p-stem) verb alone, 'enabling us to provide a unified account for aspects¹¹ of nominal and verbal morphology that have eluded previous treatments' (Benmamoun 1999:199). Ratcliffe (1997:154) also writes in support of the p-stem verb as base form in preference to the s-stem, which he views as derived despite its morphological simplicity.

3.1.1.1 Is the concept of root necessarily excluded?

Although Heath suggests that '[f]or the most part, the famous “consonantal roots” of Arabic are best consigned to oblivion', Bat-El (2003:41) remarks that 'arguments against the consonantal root are rarely made explicit'. For example, in his treatment of doubled verbs, Gafos contributes evidence to the debate without specifically rejecting a root-based analysis, claiming that 'as soon as doubled verbs are properly understood, they cease to provide crucial evidence for root-based derivation' and that they 'present an argument rather than a problem for a stem-based view of Arabic morphology' (Gafos 2002:82,84). Moreover, it is uncommon for detractors of the root to dismiss it completely. Although committed to the imperfective verb as the basis of derivation, Benmamoun (1999:199) cautions that 'it is premature to argue at this point that all productive Arabic morphology is word based rather than root based'. Similarly, in his earlier work on denominal verbs in Modern Hebrew, Ussishkin is reluctant to generalise both to other structures within that language and to other Semitic languages:

In this analysis, I argue that the consonantal root plays no role in [Modern

¹¹ Benmamoun uses 'aspects' here in the non-technical sense.

Hebrew] denominal verb formation. However, more work is necessary to determine the status of roots in the language as a whole in order to verify if such entities may be dispensed with entirely. Previous analyses have argued for the central role of the consonantal root in all Semitic grammars. The large body of literature on Arabic phonology and morphology, for example, takes the root as a necessary element of the grammar. Further research is necessary in order to explore whether my claims against the root result in superior accounts of word formation throughout Semitic languages. (Ussishkin 1999:41)

It should be noted that some years later, however, the same author is prepared to make the more sweeping claim that '[t]here is no need to refer to the consonantal root; the word is the base of affixation' and hence 'Semitic morphology resembles more familiar morphology' (Ussishkin 2005:172).

A strong conviction that a word-based analysis is correct does not necessarily preclude a role for the root within it. Ratcliffe does not 'deny the need for processes operating on roots' (1997:151) and he concludes that '[t]o the extent that the consonantal root plays a role in the morphology it is as an intermediate form extracted during a process of derivation' (1997:169). Ratcliffe, in common with other proponents of alternative approaches, focusses on specific shortcomings of the traditional model and it may therefore be helpful to examine some of these in the next section.

3.1.1.2 Specific arguments for a fully vocalised base

Ratcliffe (1997) begins by examining the vexing and frequently raised issue of broken plurals, focussing on those exhibiting long *ā* in the second syllable and analogous

diminutives containing the *ay* diphthong, such as examples (3a-c):

(3a)	كلب		كلاب		كليب
	CvCC	>>			CvCvVC
	<i>kalb</i>		<i>kilāb</i>		<i>kulayb</i>
	dog:SG		dog:PL		dog:DIM;SG
(3b)	دفتر		دفاتر		دفيتير
	CvCCvC	>>			CvCvVCvC
	<i>daftar</i>		<i>dafātir</i>		<i>dufaytir</i>
	notebook:SG		notebook:PL		notebook:DIM;SG
(3c)	سلطن		سلاطين		سليطين
	CvCCvVC	>>			CvCvVCvVC
	<i>sulTān</i>		<i>salāTīn</i>		<i>sulayTīn</i>
	sultan:SG		sultan:PL		sultan:DIM;SG

(after Ratcliffe 1997:148)

Observing that it is unsatisfactory to consider the various templates which correspond with these plurals and diminutives as separate morphemes as suggested by the root-and-pattern model, he concludes that plural and diminutive formation is not directly accessing the root, but rather modifying the fully-formed singular noun in a largely consistent manner (Ratcliffe 1997:147-148). Hence he characterises the root-and-

pattern model thus:

If we allow that some derivational rules must reference (phonologically-defined parts of) words rather than underlying consonantal roots, we are in effect admitting that the morpheme- (root-) based model of the Arabic lexicon argued for in McCarthy (1979)¹² is inadequate. (Ratcliffe 1997:149)

That a root-based model is therefore without merit is not, however, an inevitable conclusion. The work of McCarthy (1981; 1985), as further developed by McCarthy & Prince, is foundational to the modern understanding of the root-and-template model of Arabic morphology. However, applying and extending the prosodic principles introduced in McCarthy & Prince (1990a), they allow that

[t]he broken plural ... cannot be obtained with the ordinary resources of root-and-template morphology. The category root is also morphologically inappropriate as the basis of broken-plural formation, since some derivational affixes are transferred intact.... (McCarthy & Prince 1990b:219)

For them, there is no inconsistency in maintaining that the root is the morphemic basis of derivation, but that other processes operate on words or stems derived templatically from the root. Hammond (1988) also develops a model of broken plural formation within root-and-template morphology. In contrast, although admitting that it is possible that some derivational processes operate on the root whilst others take words or stems as

12 McCarthy's 1979 PhD dissertation was published as *Formal Problems in Semitic Phonology and Morphology* in 1985.

their base, Ratcliffe (1997:150) considers that 'it is clearly preferable on grounds of simplicity to assume that they all [operate on words or stems]', citing Beard (1995) in support of his position that the word, not the root, is the entry stored in the Arabic speaker's memory:¹³

Bound grammatical morphemes cannot be defined other than as modifications of major class lexical items. It follows from this undeniable fact that all major class lexical items must have fully specified phonological representations.

(Beard 1995 in Ratcliffe 1997:151)

However, reading further, it is clear that Beard (1995:40) is using the term 'bound grammatical morphemes' exclusively in the narrowest sense of affixes. Given that affixation is a concept applicable to concatenative rather than templatic morphology, it is not immediately apparent that Beard's constraint upon lexical items that they be phonologically fully specified is necessarily relevant for the templatic model of word formation which employs processes other than affixation and appears more adequate for Arabic.

A further problem for the root-based approach is that of the short vowels in underived nouns and verbs. Using examples including the nouns in (4a-c), Ratcliffe (1997:151) argues that 'if the three consonants of the stem are a separate morpheme, then [the stem] vowel too must be separate [sic] morpheme'. However in these examples, as he continues, 'the quality of the stem vowel is not predictable on semantic or grammatical grounds and may be any of the three short vowels in the language'.

¹³ Psycholinguistic evidence for the Arabic speaker's mental lexicon is discussed in section 3.1.1.3.

(4a) **قرد**
qird
 'monkey'

(4b) **رمح**
rumH
 'spear'

(4c) **كلب**
kalb
 'dog'

(after Ratcliffe 1997:151)

It is clearly true that the short vowels here cannot be considered morphemic in the sense that they carry any independent meaning when the root consonants are subtracted from the words. However, the concept of empty morphs, having form but not meaning, is not uncommon cross-linguistically. Some examples from Indo-European languages are given in (5a-c):

(5a) German compounds

Geburt + Jahr > Geburt-s-jahr
 birth-?-year
 'year of birth'

(Bauer 2003:30)

(5b) English neo-classical compounds

psych-o-logy

(5c) French adverbs

doux	>	douce	>	doucement	
/du/		/dus/		/dusmã/	
soft:MSG		soft:FSG		softly	(after Bauer 2003:111)

In the German and English examples, the elements linking the compounds add no meaning and appear merely to serve a phonological function, while in French, the feminine inflection of the adjective is consistently realised in the derived adverb, despite the category of gender being meaningless for this word class, rendering this also an empty morph in this context. Bauer's definition of an empty morph as 'a recurrent form in a language that does not appear to be related to any element of meaning' (2003:329) seems entirely applicable to the short vowels in examples (4a-c). Thus when Ratcliffe (1997:151) argues that the short vowels in the root-and-pattern model are 'phonological elements ... whose meaning or function is empty', he is justified regarding meaning, but it is entirely plausible that they do fulfil a function which is purely phonological.

One further comment is necessary on the arbitrariness or otherwise of vocalisation in underived stems. Ratcliffe also uses three examples of pattern I verbs (6a-c), in which he demonstrates that the vowel on the middle radical in the p-stem can be any of the three available in the language, the choice of which he claims is not predictable.

(6a) يضرب

yaDribu (corresponding s-stem *Daraba*)

'he hits'

(6b) يكتب

yaktubu (corresponding s-stem *kataba*)

'he writes'

(6c) يشرب

yashrabu (corresponding s-stem *shariba*)

'he drinks'

(after Ratcliffe 1997:151)

This is also the position of Gafos (2002:70), who furthermore specifies that '[n]o phonological factors condition its choice', although in the matter of phonology Heath (2003:151) differs, stating that 'a' is strongly favoured by the proximity of the pharyngeal consonants ح (*H*) and ع. However, as already discussed in section 3.1.2.2, there is evidence that there is some morphosemantic and/or morphosyntactic significance to the pattern I s-stem medial vowel. Holes (2004:101) identifies alternations in this vowel as 'broadly associated with different categories of transitivity and dynamic versus stative meaning'. Moreover, it is undeniable that the quality of the s-stem vowel to some extent determines the corresponding p-stem vowel, as in Table 2, where it may be observed that only medial 'a' in the s-stem corresponds with unpredictable vowelings in the p-stem. S-stem 'i' and 'u' are predictably 'a' and 'u' respectively in the corresponding p-stems. It is therefore perhaps simplistic to dismiss the vowelings of the underived p-stem as non-morphemic. Recall, however, that Ratcliffe does not view the s-stem as basic, but

favours the p-stem. His analysis requires that p-stem vowelism be considered arbitrary and must therefore dismiss any correlation of the vowelism of the s-stem (assumed to be derived) with transitivity or stativity.

3.1.1.3 External evidence

In recent years, much psycholinguistic evidence has been collected and analysed in order to better characterise Semitic morphology. Although Ussishkin (1999; 2000; 2005) elsewhere argues in support of word-based models, he concedes that '[p]sycholinguistic evidence regarding Semitic morphology tends to converge on a root-based model, given results that indicate a role for lexical storage of the consonantal root' (Ussishkin 2006:38). A comprehensive overview of this evidence is presented by Prunet (2006), largely comprising grammaticality judgements, priming experiments and metathesis in various contexts. I will expand here only upon the phenomenon of metathesis and will also briefly examine papers by Davis & Zawaydeh and Watson, the latter published simultaneously with Prunet's survey and thus not cited by him.

3.1.1.3.1 Aphasic metathesis

The case of an Arabic-French bilingual aphasic stroke patient 'ZT' is documented by Prunet et al. (2000), providing a unique opportunity to observe and contrast metathesis errors in Arabic with those in French, a language which has no consonantal root of the kind attributed to Semitic languages. The following examples illustrate the metathesis errors made in Arabic by ZT in a variety of oral and written tests:

- (7) عشب (target) → (output) شعب
ushb *shu* ع *b*
 'grass'
- (8) حبل (target) → (output) حلب
Hubul *Hulub*
 'ropes'
- (9) مجهود (target) → (output) مجدوه
majhūd *majdūh*
 'effort'
- (10) تفحص (target) → (output) تحفص
tafaHHuS *taHaffuS*
 'scrutiny'

(after Prunet et al. 2000:613)

In example (7), C_1 and C_2 of the root are transposed in the output, while in (8) the metathesis involves C_2 and C_3 . Significantly, consonants not belonging to the root do not suffer metathesis, as in (9) where the 'ma-' prefix is retained. Similarly, vowel melodies and templatic patterns are left unaltered: see example (10) where metathesis of the first two root consonants has occurred in the pattern V verbal noun template 'ta C_1 a C_2 C $_2$ u C_3 '.

Of ZT's 119 metathesis errors in Arabic in response to 1455 stimuli (8.18%), none involved transposition of vowels and only one involved a consonant external to the root. In contrast, far fewer metatheses were recorded for French: only 12 for 1498

stimuli (0.80%), of which only five (0.33%) are qualitatively equivalent to the Arabic consonantal metatheses, the other seven involving transposition of vowels, nasals, whole syllables or combinations of these. Thus equivalent metathesis is 25 times more common in ZT's Arabic than in his French. Lest it should be assumed that ZT's overall competence in Arabic has been affected selectively, in tests of his derivational and inflectional morphology error rates were almost identical for Arabic (82%) and French (83%). Further metathesis evidence is presented in the same paper from slips of the tongue and word games (see section 3.1.1.3.2)

Prunet et al. (2000:642-643) conclude 'that the consonant metathesis errors produced by ZT ... provide external evidence for the existence of roots as lexical units in the mental lexicon of speakers of Arabic'. They point to fundamental differences between Semitic morphology and that of other languages, suggesting that root consonants exist on a different representational tier from that of the template pattern, unlike in French where consonants 'are preanchored and interspersed with vowels' (Prunet et al. 2000:643), i.e. as an integral part of fully vocalised stems. Data from an aphasic speaker of Modern Hebrew who makes template rather than root errors is also presented (Prunet et al. 2000:626-629) in support of the existence of the template as a separate morphological tier, though the authors note that there is no evidence thus far to support the notion of vocalic melody as morphologically distinct from the template. The authors conclude as follows:

The existence of roots as lexical units implies the existence of morphemes as lexical units and therefore favors morpheme-based models of morphology, or at least models that can store morphemes on distinct tiers. (Prunet et al. 2000:643)

Discussion of the three-tier morphological model described by McCarthy & Prince (1990a) will follow in section 3.2.

3.1.1.3.2 Slip-of-the-tongue and word game metathesis

Metatheses occur not only in aphasic patients but also in involuntary slips of the tongue. Prunet et al. (2000:625) and Mahfoudi (2007:81) refer to the work of Berg & Abd-El-Jawad (1996), which compares slips of the tongue in Jordanian Arabic with those in German and English. They report significant differences in the types of metathesis errors, with slips in Arabic mirroring the aphasic errors of ZT noted in the previous section. All root consonants were potential targets for involuntary metathesis, regardless of their position with respect to the word or its syllable structure, with 80.5% of the errors occurring within words. In German and English however, errors tended to be far more common between words (93.6% and 86.3% respectively) and were most often constrained by syllable structure on a like-for-like basis, i.e. onset for onset or coda for coda. The following examples demonstrate within-word (11) and between-word (12) metatheses in English, the latter popularly recognised as a Spoonerism:

(11) *remuneration* (target) → (output) *renumeration*

(12) *the dear old queen* (target) → (output) *the queer old dean*

Note in each of these examples that it is syllable onsets which have been transposed. The Arabic example in (13a), however, shows transposition of the consonants in onset and coda positions in the first syllable and, moreover, similar slips are observed in Arabic

between root consonants across syllable boundaries (13b).

(13a)	غرفة	(target) → (output)	رغفة
	<i>ghurfa</i>		<i>rughfa</i>
	'room'		
(13b)	حلم	(target) → (output)	ملح
	<i>Hilim</i>		<i>miliH</i>
	'dream'		(after Berg & Abd-El-Jawad 1996:303)

Berg & Abd-El-Jawad find the data to be statistically significant, thus providing further evidence for the special status of the Semitic root.

Similarly, metathesis involving only the root consonants is reported in word games (ludlings) in Moroccan and Bedouin Hijazi Arabic dialects, in which the permutation process involved is believed to be unique (Bagemihl 1989:539-542). The assessment of Prunet et al. (2000:625) is that such ludlings provide additional evidence for the psychological reality of the root but they suggest that further research is necessary to confirm that the facility with which native Arabic (and indeed Semitic) speakers perform these consonantal permutations is not matched by speakers of other languages.

3.1.1.3.3 Hypocoristics

Davis & Zawaydeh (2001) note that hypocoristics (pet names) are widespread in colloquial Arabic and present data from Ammani-Jordanian speakers on one common

hypocoristic pattern, exemplified in (14a-c):

(14a)	خالد	(full name)	→	(hypocoristic)	خَلُّود
	<i>khaled</i>				<i>khallūd</i> (root <i>kh-l-d</i>)
(14b)	سليم	(full name)	→	(hypocoristic)	سَلُّوم
	<i>salīm</i>				<i>sallūm</i> (root <i>s-l-m</i>)
(14c)	هند	(full name)	→	(hypocoristic)	هَنْوْد
	<i>hind</i>				<i>hannūd</i> (root <i>h-n-d</i>)

(after Davis & Zawaydeh 2001:515)

Although the syllable structures and vowelings of the full names differ, the hypocoristics all take the pattern $C_1aC_2C_2\bar{u}C_3$, with consonants occurring in the same sequence as in the original name and the second consonant doubled. The above examples only contain root consonants and vowels. However, when hypocoristics which are based on names in derived patterns containing additional non-root consonants are examined, the same hypocoristic pattern is observed:

(15a)	محمّد	(full name)	→	(hypocoristic)	حَمَّوْد
	<i>muHammad</i>				<i>Hammūd</i> (root <i>H-m-d</i>)
(15b)	أمجد	(full name)	→	(hypocoristic)	مَجَّوْد
	<i>'amjad</i>				<i>majjūd</i> (root <i>m-j-d</i>)

(15c) ابتسام (full name) → (hypocoristic) بسّوم
(i)btisām *bassūm* (root *b-s-m*)

(after Davis & Zawaydeh 2001:515)

Thus the consonants of the root and only the root are consistently selected for inclusion in the hypocoristic template.

Although the conclusions reached by Davis & Zawaydeh differ somewhat from those of Prunet et al. (2000) in terms of the implications for underlying representations, they clearly view their work as supporting the existence of the root and presenting 'a challenge to strictly word-based approaches to morphology', stating that 'the consonantal root is the object of a morphological strategy in Arabic hypocoristic formation' (Davis & Zawaydeh 2001:518-519).

3.1.1.3.4 Diminutives in San'ani dialect

In a paper published in the same journal issue as that of Prunet, Watson (2006) presents evidence relating to the formation of diminutives in San'ani Arabic and other dialects. It is entirely appropriate that the present debate with respect to MSA is informed by studies on Arabic dialects as well as other Semitic languages, since the role of the consonantal root in morphology is clearly a pan-Semitic issue. Thus Watson's findings may justifiably be extended to Arabic more generally.

In interviews with San'ani native speaker informants, Watson elicited the meanings of verbs on the productive diminutive pattern tCayCaC, reporting that the explanations given most often employed basic trilateral nouns from the same root:

The explanatory use of a large number of different base forms, which share with the diminutive verb only the consonantal root, suggests both that the basic consonants are extractable from the tCayCaC form and that the triliteral consonantal root is recognised by speakers as an independent morphological unit. (Watson 2006:193)

However, Watson (2006:195) also identifies counterexamples in the same pattern such as the diminutive verb stem *tmaydar*, which on semantic grounds is clearly derived from *mudīr* (مدیر – 'manager') where the root is not *m-d-r*, but rather *d-w-r*. On the basis of this and other examples, she concludes that the derivation here is 'from a fully vocalised nominal stem' (Watson 2006:202). She also draws on evidence from recent but restricted examples of San'ani diminutive noun formation where she argues that '[t]he semantics indicates that the diminutive is derived in these cases from the base noun – a vocalised stem – and not from the more abstract root' (Watson 2006:197).

Watson therefore argues 'for neither an entirely root-based nor an entirely stem-based approach, rather claiming, on the basis of data from a modern dialect, that both types of word formation occur in Arabic' (Watson 2006:190). Thus, in conclusion, she writes:

Recognition of the root as an independent morphological unit at one level ... does not exclude the existence of constraints that transform one stem into another stem without recourse to the root unit.... (Watson 2006:202)

3.1.1.4 Conclusion

The consonantal root has both the weight of traditional interpretation and much recent psycholinguistic and other external evidence to commend it.

While linguistics and psycholinguistics are different disciplines, they both deal with language and we need principled reasons if we are asked to ignore the systematic convergences between psycholinguistic research and those linguistic theories that posit consonantal roots. It seems implausible to me that speakers of Semitic languages would find consonantal strings salient and pervasive enough to systematically resort to them for either word-formation or processing, or both, while assigning them no morphemic status in the construction of their mental lexicons and grammars. (Prunet 2006:62)

Nevertheless, Shimron (2003b:1) counsels that 'it may be useful to distinguish sensitivity to the root and template structures from the actual involvement of the root and the template in ongoing linguistic activity'. Thus, placing the evidence presented to date by proponents of fully vocalised stems as basic to word formation into the context of potentially contradictory evidence in favour of the root, the balanced view is probably not too distant from that expressed by Shimron (2003b:4), 'that although the root-template structure is obviously present in most Semitic words, it may or may not play a role in all kinds of Semitic word formations'.

Thus, I am inclined to rephrase the statement made by Watson (2006:202), which was quoted in section 3.1.1.3.4, to assert additionally, and perhaps more pertinently for our present purposes, that the existence of constraints that transform one stem into

another stem without recourse to the root unit does not exclude recognition of the root as an independent morphological unit.

3.1.2 Matrices, etymons and radicals

Contemporary with the emergence of word- and stem-based models in the last decade or so is the even more radical approach proposed by Bohas, in which he argues not for a basic unit larger than the Semitic root, but rather for one which is smaller and even more abstract. This brief discussion of his proposal is based upon Bohas (2006), which builds upon his 1997 and 2000 publications in French.

3.1.2.1 Bohas's hypothesis

Bohas begins by identifying striking correspondences within the lexicon which are not predicted according to the traditional root. So for example, he notes that the following verbs which only share two root consonants (*m* and *t*) have closely related meanings:

(16a) متى

matā (root *m-t-y*)

'to stretch out (a rope)'

(16b) متأ

mata'a (root *m-t-'*)

'to pull out, stretch out (a rope)'

(16c) متع

mata عا (root *m-t-ع*)

'to lengthen, stretch out'

(16d) متن

matana (root *m-t-n*)'to pull out, stretch and lengthen something' (after Bohas 2006:4)¹⁴

It is on the basis of examples such as these, which Bohas designates as a paradigm, that he posits the existence of 'the etymon, a binary composition of phonemes ... [extracted] ... by establishing the common and constant phonetic and semantic relationship between the words of the paradigm' (Bohas 2006:4). Although the identification of such biconsonantal 'etymons' within the lexicon is interesting in itself, Bohas takes his argument further. Firstly, he claims that the elements of the etymon are 'not ordered in a linear fashion' (Bohas 2006:17), i.e. that they do not consistently occupy the same two positions in what has traditionally been regarded as the triconsonantal root. Thus he identifies the following examples with similar meanings as sharing the etymon *b-j*:

(17a) بجر

bajira (root *b-j-r*)

'to have a large belly'

¹⁴ I have been unable to verify contemporary usage of these and certain other examples using Wehr (1994). Bohas appears to have obtained his data from the Arabic-French dictionary of de Biberstein Kazimirski (1960), originally a 19th Century publication. See also section 3.1.2.2.

(17b) حَبِج

Habija (root *H-b-j*)

'to have a bloated or swollen belly' (after Bohas 2006:21)

Examples (18a-b) further demonstrate that the consonants of the etymon (*b* and *k*) may not be consecutive and/or may occur in reverse sequence:

(18a) حَبِكَ

Habaka (root *H-b-k*)

'to weave (also to braid, plait, knit)'

(18b) كَرَب

karaba (root *k-r-b*)

'to twist, braid, make a rope' (after Bohas 2006:30)

However, Bohas's hypothesis is more far-reaching than this. He argues for a more basic level of lexical organisation defined as 'a combination, not ordered in a linear fashion, of matrices of phonetic features linked to a semic nucleus' (Bohas 2006:17). Thus, for example, he identifies the combination of a non-nasal, labial consonant with an unvoiced, continuant consonant as relating to 'movement of air, wind ... breathing' etc., citing the following examples, amongst others:

(19a) نفث

nafathā (etymon *f - th*)

'to blow on something'

(19b) فحّ

faHHa (etymon *f - H*)

'to hiss (snake), to wheeze while sleeping'

(19c) نبج

nabaHa (etymon *b - H*)

'to hiss (snake)'

(19d) بحّ

bakhkha (etymon *b - kh*)

'to snore while sleeping'

(after Bohas 2006:18)

Inasmuch as these examples are to some extent onomatopoeic, it is not entirely surprising that they share phonetic features which involve breathy exhalation. For other examples of Bohas's 'matrices', however, there is no onomatopoeic explanation, though they are suggestive of the phenomenon of phonaesthemes (Bauer 2003:119,160; Bergen 2004; Bolinger 1968:242), a concept which is widely recognised, if considered controversial, cross-linguistically. Examples of suggested phonaesthemes in English include words beginning with 'gl-' which frequently have meanings relating to vision and light, such as *glance*, *gleam*, *glow*, *glisten*, *glimmer* and *glimpse*. Bauer (2003:160) states that the presence of phonaesthemes is suggested '[w]here a lot of words share some phonological structure and also some vague semantic structure', whilst expressing the

following note of caution:

Phonaesthemes can usually be seen as the result of post hoc analysis of existing words, rather than the motivation for creating new words, and the boundaries of the phonaestheme are typically rather fuzzy. (Bauer 2003:160)

It should be emphasised, however, that there is no inherent implication within the concept of phonaesthemes that they are anything other than arbitrary: there is no suggestion that the English phoneme combination 'gl-' stands in any direct iconic relationship to the meaning with which it frequently appears to correlate. Although they must necessarily be considered sub-morphemic units and therefore, if valid, threaten the status of the morpheme as the smallest element of meaning in language, phonaesthemes do not violate the Saussurean concept that 'the linguistic sign is arbitrary' (Saussure 1966:67).

However, Bohas, who does not attempt to draw a parallel with phonaesthemes, is not content with suggesting an arbitrary relationship between his 'matrices' and their meaning. Instead he describes them as 'mimophonic ... [by which] we mean that there exists an analogy between the phonetic substance of the matrix and its semic nucleus', and elaborates concerning one specific consonantal combination 'that the mimophony of this matrix is due to the shape that the tongue makes during the articulation' (Bohas 2006:19). Thus Bohas, fully recognising that his claims are contrary to Saussure's arbitrariness of the sign, is asserting a literal link between the articulatory shape adopted and the meaning of the words containing the corresponding 'matrix' of phonetic features.

More concerned with lexical organisation than morphology, Bohas is not

claiming that either the matrix or the etymon is morphemic. He introduces a third level of lexical organisation, the 'radical', accounting for the extension of the biconsonantal etymon to a largely triconsonantal morphology, defining the radical as:

the etymon developed by the spreading of the last consonant or incrementation of a sonorant, and including at least one vowel, and expanding the semic nucleus.... The radical is the domain in which various morphological and phonological processes are carried out. (Bohas 2006:17)

3.1.2.2 Assessment of the matrix/etymon model

Leaving aside the ideological difficulties presented by Bohas's literal interpretation of the phonetic shape of his matrices, there are a number of theoretical and empirical problems for the concept of the biconsonantal matrix or etymon. Not the least of these is that selection of the third consonant is not adequately dealt with in Bohas's scheme, nor is there a satisfactory explanation for why Arabic morphology appears to be so dependent on a triconsonantal system if a biconsonantal etymon is basic but not in itself morphemic. Six related objections are discussed in more detail by Prunet (2006:55-56), who allows that the etymon may have diachronic value yet argues against the synchronic value attributed by Bohas. Also, much as is argued concerning phonaesthemes, the domain of Bohas's mimophones seems limited to certain special cases and they are therefore not readily applicable across the language system as a whole, with many words sharing features but no discernible semantic link. Mahfoudi (2007:96) raises the issues of there consequently being no clear way of identifying the etymon within a word and that of the obscurity of its origins. Furthermore, it has already been observed in footnote

14 on page 79 that many of the examples used by Bohas are archaic, citing meanings which have not been verified synchronically. This casts further doubt on whether the phenomena they are said to exemplify are justifiable synchronically throughout the entire lexicon.

In support of the need for an alternative to the Semitic root as basic, Bohas (2006:7-16) produces experimental evidence that native speakers are largely unable to consciously extract roots from a range of Arabic words, although the methodology described intentionally draws heavily upon words in which the root contains one or both of the weak (glide) consonants و ('w') and ي ('y') or other features which obscure the identity of the root. Whilst the performance of native speakers in these tests may nevertheless be disappointing for supporters of root-based models, Bohas offers no comparable experimental data to suggest that participants would have identified etymons or phonetic matrices more readily. Evidence in favour of the reality of the etymon in the mental lexicon is supplied by Boudelaa & Marslen-Wilson (2001), who conducted masked and auditory-visual cross-modal priming experiments which demonstrate faster reaction times when consonant pairs recognised as etymons were present. However, as Prunet notes:

the argument in favour of etymons would benefit from showing that the priming effects obtained when testing pairs of consonants in Arabic (identified as etymons) are absent when comparable pairs of consonants are tested in non-Semitic languages (since these supposedly have no etymons). (Prunet 2006:55)

Both Prunet (2006:55) and Mahfoudi (2007:91-92) observe that the distinction between etymon and matrix is somewhat blurred by Boudelaa & Marslen-Wilson, and Mahfoudi documents his own priming experiments, designed to test separately these two levels of lexical organisation as defined by Bohas, also examining the issue of whether the order of consonants in the etymon is relevant. Mahfoudi summarises the results of his study as follows:

While there is psycholinguistic evidence for the etymon in its ordered version that corroborates a previous study by Boudelaa and Marslen-Wilson (2001), the non-ordered version of the etymon and its more abstract form (the phonetic matrix) could not be supported by psycholinguistic data. (Mahfoudi 2007:96)

3.1.2.3 Conclusion

Therefore, although the observations leading to Bohas's concept of the etymon are intriguing and will doubtless spawn further research, we must conclude for the present, along with Mahfoudi (2007:96), that '[t]he root remains a stronger notion than the etymon to account for the organization of the Arabic mental lexicon'. Moreover, in terms of morphological processes of derivation as distinct from lexical organisation, there is little reason if any to reject the root in favour of the etymon.

3.2 Prosodic templatic morphology

As has already been discussed, there is a long tradition in Arabic of a Semitic root-and-pattern morphology based on discontinuous morphemes. The most fully developed expression of this nonconcatenative morphology is presented in the work of McCarthy

(1981; 1985) and subsequently that of McCarthy & Prince (1990a; 1990b), which 'provides a comprehensive analysis of Arabic templatic morphology within prosodic theory' (McCarthy & Prince 1990a:49). Their model is also described by Watson (2002) and those points having particular relevance to the present research are summarised here.

3.2.1 Three morphemic tiers

As demonstrated in the following example of the pattern II s-stem passive of the root **كتب** (*k-t-b*), morphemes are arranged on three tiers:

(20)	vowel melody	$\begin{array}{cc} u & i \\ & \\ C & v & C & C & v & C \end{array}$	s-stem (perfect), passive
	CV skeleton		causative (pattern II)
	root	$\begin{array}{ccc} & \backslash / & \\ k & t & b \end{array}$	'write'

(after McCarthy & Prince 1990a:5)

Thus each morphemic tier contributes both form and meaning to the resulting derived stem. The vowel melody *u – i* defines the passive perfect (s-stem), contrasting with both the active perfect (*a – a*) and the passive imperfect or p-stem (*u – a*). The CV skeleton is that of derived pattern II, which has been somewhat simplistically designated by McCarthy & Prince as causative (see Chapter 4 for further discussion of pattern II meaning). The root supplies three consonants *k-t-b* which broadly have the meaning 'write'. Hence, combining the three tiers, we have the (uninflected) stem *kuttib* 'was caused to write'. Note that it is the templatic tier, represented here as a CV skeleton, which supplies the characteristic morphological shapes of the derived verbal patterns. It

is this tier which McCarthy & Prince have further described and indeed constrained on the basis of prosodic theory.

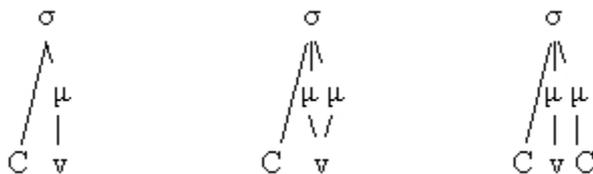
3.2.2 Prosodic analysis

The Prosodic Morphology Hypothesis applies units of prosody to templatic morphology. The phonological word (W) consists of one or more units designated as a foot (F), which in turn consists minimally of a stressed syllable and optionally also one or more unstressed syllables; each syllable (σ) contains one or more moras (μ), the units of syllable weight (Selkirk 1980 in Watson 2002:129; McCarthy & Prince 1990a:3).

3.2.2.1 Syllable types in Arabic

Consider the following three syllable types found in Arabic: Cv, Cvv (i.e. consonant followed by long vowel) and CvC. The first is a light syllable, considered monomoraic, whilst the other two are heavy or bimoraic. Note that the syllable-initial consonant is not considered to contribute a mora to syllable-weight:

(21) light (Cv) heavy (Cvv) heavy (CvC)



(after McCarthy & Prince 1990a:6)

In fact, these are the only syllable types found medially in Arabic, i.e. when neither

stem-initial nor stem-final. There are, however, special cases where syllables are either initial or final.

The first is where the stem appears to begin with two consonants, as in the derived verbal stems of patterns VII and upwards. When these patterns were introduced in Chapter 2, we represented the s-stem templates as beginning with an epenthetic vowel (*i*). This is the syllabic analysis for the paradigm pattern VIII s-stem (*i*)*fta* *ʕal* in different contexts:

(22a) σ σ σ
 /|\ /| /|\
 ' *i f t a ʕ a l*

(22b) σ σ σ σ
 /| /|\ /| /|\
q a d i f t a ʕ a l

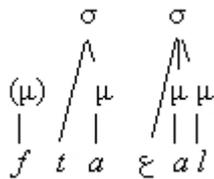
(22c) σ σ σ
 /|\ /| /|\
w a f t a ʕ a l

(after McCarthy & Prince 1990a:11-12)

When the s-stem verb occurs utterance initially (postpausally) as in (22a), the first consonant of the stem (*f*) is analysed as closing a syllable formed with an epenthetic vowel and an initial glottal stop (*hamza*) which is supplied since all Arabic syllables must have an initial consonant. This *hamza* which is external to the pattern itself is known to Arab grammarians as *همزة الوصل* (*hamzatu l-waSl*) and is distinguished from a *hamza* integral to the root or pattern in fully marked orthography. In (22b), which shows the verb in postconsonantal position, the final consonant of the preceding word

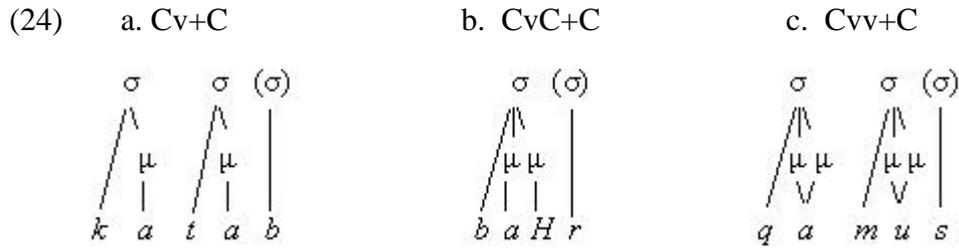
qad (قد – a past/perfective marker) forms the onset of a syllable completed by the epenthetic vowel and the first stem consonant. The final example (22c), which shows the stem postvocally following the word *wa* (و - 'and') demonstrates that here no additional consonant or vowel is supplied, the first stem consonant instead closing the final syllable of the preceding word. Thus in each case, McCarthy & Prince (1990a:12) identify the initial stem consonant 'as an extrametrical mora, one that is not linked to any syllable' and consequently represent it in parentheses:

(23)



(after McCarthy & Prince 1990a:12)

Syllables in stem-final position must also be treated separately, as all Arabic stems must end in a consonant. Note that this is not true of words, which often end in vowels. The sequences which are available stem-finally are the three medial syllable types followed by a further consonant: Cv+C, CvC+C and CvV+C, exemplified here in *katab* (كتب - 'wrote'), *baHr* (بحر - 'sea') and *qāmūs* (قاموس - 'dictionary'):

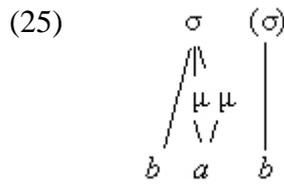


(after McCarthy & Prince 1990a:14)

The final consonant 's' is plausibly analyzed as extrametrical but not as moraic, since it becomes an onset before vowel-initial suffixes or words' (McCarthy & Prince 1990a:14) for example *qāmūs* (24c) becomes *qāmūsun* with the nominative indefinite inflection.

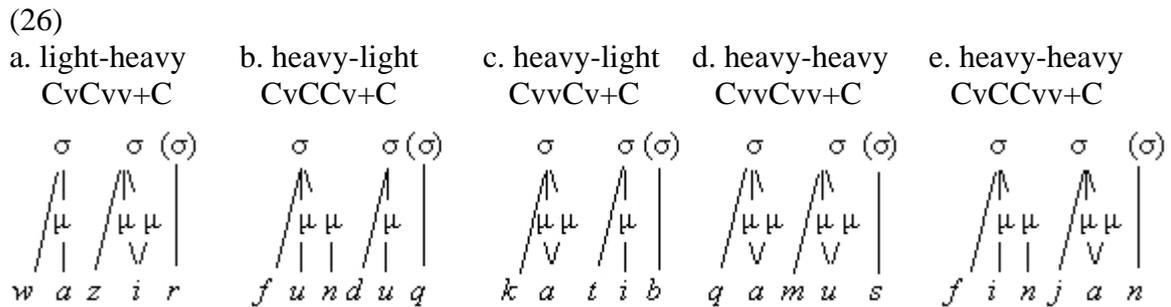
3.2.2.2 Minimal stems

McCarthy & Prince develop an argument for a minimality constraint in Arabic, also addressing the issue of words which appear to be counterexamples. They conclude that the minimal stem in Arabic is a single quantitative trochaic foot, which by definition has two moras: these moras (units of syllable weight) may occur either in the same heavy syllable or in two light syllables (McCarthy & Prince 1990a:17-23). Example (24b) *baHr* shows a minimal stem with a bimoraic (heavy) syllable on the pattern CvC, while (24a) *katab* is an example of a minimal stem having two monomoraic (light) Cv syllables. The third possible minimal stem, with a bimoraic Cvv syllable, is exemplified in *bāb* (باب - 'door'):



3.2.2.3 Further noun stems

Examining basic nouns (those having no affixation and not derived from augmented verbal patterns), in addition to nouns with minimal bimoraic stems the following patterns containing three or four moras are encountered:



(after McCarthy & Prince 1990a:24)

The trimoraic stems may either consist of a light syllable followed by a heavy syllable, as in (26a) *wazīr* (وزير - 'minister'), or of a heavy syllable followed by a light syllable, exemplified by (26b) *funduq* (فندق - 'hotel') with first syllable CvC, and (26c) *kātib* (كاتب - 'writer') with first syllable Cvv. In the examples with four moras, two patterns are observed, each having two heavy syllables: (26d) shows the trilateral *qāmūs* (قاموس - 'dictionary'), which has two Cv syllables, while in (26e) *finjān* (فنجان - 'cup') has

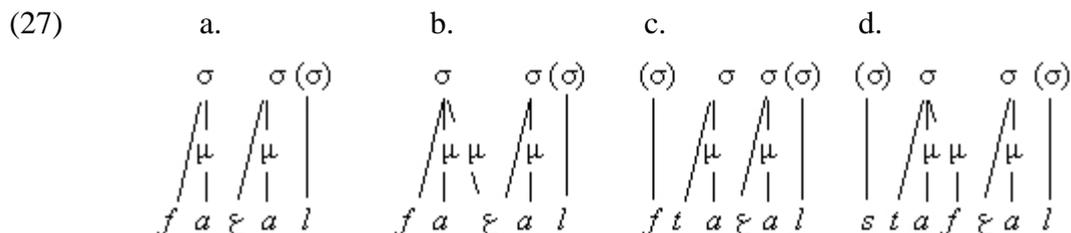
CvC followed by Cvv. McCarthy & Prince (1990a:25-33) develop this analysis, introducing the Maximal Stem Constraint, which predicts that the patterns thus far described are the only possible productive patterns for underived nouns, and addressing the issues of diptotic broken plurals and rare nouns with more than four consonants which are counterexamples.

One matter raised which is of particular interest is that of the asymmetry in the lexicon between nouns formed on the triconsonantal heavy-light and light-heavy stems, i.e. (26c) and (26a) respectively. The data presented demonstrate that light-heavy stems are both more diverse in vocalic melody and more common than heavy-light stems, with 'all *CaaCiC* nouns, constituting 97% of the *CvvCvC* class [owing] their existence to a single morphological process, the formation of the Form I active participle [*fā ʕil*]' (McCarthy & Prince 1990a:28). Prosodic theory provides the explanation that the light-heavy combination is a recognisable prosodic unit, the iambic foot, just as each of the bimoraic stem combinations constitutes a single prosodic unit designated the trochaic foot and the heavy-heavy combinations comprise two trochaic feet. In contrast, the *CvvCv+C* pattern is not fully analysable in terms of prosodic feet, as it consists of a trochaic foot plus a further syllable not constituting a foot.¹⁵ It is therefore concluded that this pattern and hence nouns formed as the *fā ʕil* active participle are derived, not underived as heretofore assumed. The significance of this for the treatment of verbal pattern III in subsequent chapters lies in the fact that this derived verbal stem has precisely the same heavy-light syllable combination as the *fā ʕil* active participle.

¹⁵ The related matter of heavy-light quadrilaterals (26b) is explained by McCarthy & Prince (1990b:31-32).

3.2.2.4 Verbal stems

Leaving aside patterns V, VI and QII, which have an obvious prefix, four prosodic skeletons are proposed to account for all other verbal patterns:



(McCarthy & Prince 1990a:35)

The four skeletons are characterised prosodically as either two light syllables (27a) and (27c) or a heavy-light syllable sequence (27b) and (27d) followed by the obligatory stem-final extrametrical consonant, with (27c) and (27d) additionally prefixed by an extrasyllabic mora. The stems shown in example (27) are patterns I, II, VIII and X respectively, though Table 24 indicates the prosodic skeleton applicable to each stem excluding the *ta-* prefixed patterns. Note that all verb stems in this scheme are disyllabic and that the second syllable is always light (monomoraic). McCarthy & Prince (1990a:35-37) analyse the second syllable as a morphemic suffix indicating the finite verb, contrasting it with a heavy second syllable, which they designate a non-finite verb suffix morpheme, observed in the majority of the corresponding verbal noun patterns. A consequence of the foregoing analysis is the conclusion that 'none of the verb templates is basic ... [r]ather, all are derived' (McCarthy & Prince 1990a:35).

Pattern number	Verbal stem	Prosodic skeleton
I	<i>fa ɛal, fa ɛil, fa ɛul</i>	a
II	<i>fa ɛ ɛal</i>	b
III	<i>fā ɛal</i>	b
IV	<i>'afɛal</i>	b
V	<i>tafa ɛ ɛal</i>	(excluded)
VI	<i>tafā ɛal</i>	(excluded)
VII	<i>nfa ɛal</i>	c
VIII	<i>fta ɛal</i>	c
IX	<i>fɛalal</i>	c
X	<i>stafɛal</i>	d
XI	<i>fɛālal</i>	d
XII	<i>fɛaw ɛal</i>	d
XIII	<i>fɛawwal</i>	d
XIV	<i>fɛanlal</i>	d
XV	<i>fɛanlay</i>	d
QI	<i>fa ɛlal</i>	b
QII	<i>tafa ɛlal</i>	(excluded)
QIII	<i>fɛanlal</i>	d
QIV	<i>fɛallal</i>	d

Table 24: Prosodic types by verbal stem

Morphemic status is also argued for the leading extrasyllabic mora analysed as (σ) in patterns VII-XV, QIII and QIV. Although allowing that 'a more precise characterization of the semantics of the different [verbal patterns] could better pin down the meaning of (σ)', McCarthy & Prince (1990a:39) consider that 'it is sufficient for [their] purposes to recognize that the different [verbal patterns] with initial (σ) have enough in common to warrant setting it up as a prefix', proffering a tentative identification of a detransitivising morpheme.

The final distinctive feature is the weight of the first syllable of the verbal stem. McCarthy & Prince (1990a:39) describe their analysis here as 'somewhat subtle and conjectural', suggesting that the patterns with a light first syllable bear close relationship to pattern I. They stop short of drawing parallels between the numerous patterns sharing a heavy first syllable, preferring to analyse this as 'a kind of default base, appearing with all other [verbal patterns], a set of derivational patterns that appear to have nothing in common' (McCarthy & Prince 1990a:39). Whether this is a potential weakness in their argument for morphemic status for this prosodic feature will not be examined further here.

What may be of interest for our present study, however, is that patterns II, III, IV and QI all begin with variations of the heavy (bimoraic) first syllable. This syllable is realised differently from pattern to pattern, although II, IV and QI share a CvC syllable and III alone has Cvv. Thus, in a study which examines form-meaning relationships, there is both the potential for commonality of meaning implied by the shared prosodic form of the syllable and differentiation of meaning implied by the variant realisations as Cvv and CvC and, within the latter, further variants according to consonant assignments. This will be seen to be significant as we examine pattern III in more detail in later chapters.

3.3 Summary

Inasmuch as my research aims to identify and characterise morphemic components of the Arabic verbal patterns which are additional to the consonants supplied by the root (as understood in the root-and-pattern approach), it will be necessary to assume that the root

is not only a reality but also morphemic, i.e. that it is the component bearing the basic meaning in any word derived from it. Although it might be considered preferable to await a resolution of the issues concerning the status of the root before attempting to analyse the semantic or syntactic significance of patterns, it is unrealistic to believe that unanimity on the matter is attainable. Since my approach is essentially descriptivist, however, I will not attempt to propose derivational mechanisms. Such a pursuit is more applicable to those who adopt a generative approach, for which the correct identification of the base upon which these mechanisms operate assumes much greater importance. Thus this present chapter has served largely to examine the claims of divergent viewpoints and to introduce the prosodic templatic model which represents a contemporary extension along the lines of traditional theory. For the present at least, the question will remain open as to what implications my research may have for the validity of these different approaches.

Chapter 4

Understanding Arabic verbal semantics: Form and meaning

In Chapter 2 it was established that the distribution of lexical items throughout the verbal system of MSA is not random. Moreover, it has been demonstrated that there are good reasons to believe that certain augmented patterns, principally II & V, III & VI and IV & X are morphologically related and indeed that the second member of each pair is a derivative of the first. It has also been stated that within the framework of Saussurean structuralism it is fundamental that form and meaning are intimately linked within the linguistic sign, thus when there is a formal realisation there must be an associated meaning within a given language system. It would therefore be reasonable to expect that any description of the well-characterised verbal patterns of MSA, with their distinctive morphological forms, should be accompanied by a well-documented description of the distinctive semantics specific to each pattern. Furthermore, given that it is basic to the study of morphology that the morpheme is a meaning-bearing component of a language system, one might expect that both descriptive and didactic grammarians would be keen both to identify morphemes formally and to analyse and present the semantic burden which each individual morpheme carries and contributes to each verbal pattern. However, existing grammars are woefully lacking in this respect, as further investigation reveals.

4.1 The grammarian's dilemma

As explained in the previous chapter, the validity of the traditional analysis in which meaning is attributed to trilateral and, less frequently, quadrilateral roots will be assumed. Although some linguists have called this analysis into doubt, it is the starting point of all the grammars consulted. Since they agree that the sequence of root consonants carries meaning, whatever one's preference may be regarding morphological description, it is clear that the root sequence, 'a semantic abstraction' (Holes 2004:99), must be regarded as morphemic. In examples (28a-c) the root is *k-t-b* and the basic meaning 'write' can be seen in its derivatives:

(28a) كَتَبَ [I]

kataba

'to write'

(28b) مَكْتَبٌ

maktab

'office'

(28c) كَاتِبٌ [III]

kātaba

'to correspond (with + d.o.)'

There is broad agreement that the unaugmented verb, in which 'the root becomes a Pattern I verb through the interdigitation of short vowels between its consonants'

(Holes 2004:101) is basic and therefore carries an unaugmented meaning. It is also uncontroversial to assert that the augmented verbal patterns build upon the basic meaning of the root which they contain. The matter in question is to what extent the semantics of the verbs thus derived can be predicted. In introducing derived forms Wright (1967:I.29) is non-committal, stating merely that they 'express various modifications of the idea conveyed by [pattern I]'. Writing in the eighteenth century, Richardson (1969:64), having elaborated upon the meanings of the various triliteral verbal patterns, warns that 'these derivative conjugations are nevertheless frequently received in other senses' and allows that 'many of them [retain] the simple signification of their primitives'. Presumably in recognition of the possible pitfalls involved in generalising the semantics of derived patterns, Cowan (1958:137) advises the student 'to learn the meanings of the derived verbs ... without troubling himself unduly about the original or first form'. Similarly, the view of Wickens (1980:64) is clear:

The Derived Forms are often spoken of as though they gave Arabic a sort of mathematical exactness, that is as if the exact shade of meaning of every verb in a Derived Form could immediately be recognised once one knew the relevant formula; or as if every student of Arabic could "make up" his own Derived Forms to suit his purpose. This is at the very least a gross exaggeration.

Badawi et al. (2004:60) suggest that each augmented pattern 'implies (though not consistently) a specific semantic extension of the root meaning'. Meanwhile, by choosing to call the augmented patterns 'morphosemantic' Holes (2004:100) is making a clear statement that their morphology and semantics are intimately linked, claiming that

they 'modify the root meaning semantically in (to a large degree) predictable ways'. In her introduction to derived verbal patterns Ryding elaborates further:

These variants all have a central related lexical meaning, but each verb form has a different semantic slant on that meaning.... The interlocking of the lexical root with the various verb form templates creates actual verbs whose meanings can often be analyzed or deduced through the use of compositional semantics. That is, the lexical meaning of the consonantal root plus the grammatical meaning of the particular template combine to yield an actual word. This two-part formula sometimes yields a very clear meaning derivable from the component parts, but other times, the meaning is not as clear because of its evolution over time.

(Ryding 2005:434)

Schulz (2004:28) asserts that 'a functional-semantic description of the Forms is possible', but continues by admitting that 'many verbs do not fit into a general semantic system of the individual Forms', thus highlighting the grammarian's dilemma. On the one hand, either consciously aware of the claims of Saussurean structuralism or perhaps unconsciously because of their own intuitive understanding of language systems in general, the grammarian seeks to assert the validity of the form-meaning relationship within the verbal patterns of MSA, whilst on the other hand they feel obliged to weaken their claims by hedging their statements with phrases such as 'to a large degree' (Holes 2004:100) or 'not consistently' (Badawi et al. 2004:60). In essence, the dilemma is that when it comes to descriptive examination of the individual augmented verbal patterns (II – XV), in the absence of a clear morpheme-by-morpheme analysis of their semantics,

and desiring to present the reader or student of MSA with at least some framework within which meaning may be recognised or attributed, grammarians appear to resort to one or other of the following tactics: either explicit specification of all possible semantic uses of the verbal pattern or reductionism, in which the semantic significance of a given verbal pattern is simplified or generalised. It will be shown that there are inherent drawbacks to each approach.

4.2 Specific approaches from the grammars

For ease of comparison descriptions of the semantics of patterns II-X (excluding IX) from selected grammars spanning more than three centuries have been summarised and presented in table form (Tables 25.1 – 25.2). This is not intended to be an exhaustive survey of all Arabic grammars ever published, if that were even possible, but rather an attempt to examine different approaches as a starting point for comparison and to highlight some of the inconsistencies that emerge.¹⁶ The wording of the original sources is retained throughout, except that words enclosed in brackets [] indicate my paraphrase, gloss or attempt to harmonise terms. By way of illustration of the challenges involved in undertaking a semantic description of the derived verbs, pattern II will be used as an example throughout the discussions which follow.

4.2.1 The 'reductionist' approach

Among the modern grammars Badawi et al. (2004) represents an extreme, appearing to consistently strive to reduce the semantic categorisations of specific patterns to a

¹⁶ Buckley (2004) was not available to me at the time of compiling this survey of grammars, but also tends towards the simplified approach described in section 4.2.1.

SOURCE	PATTERN II C ₁ aC ₂ C ₃ aC ₃ تَعَدَّى	PATTERN III C ₁ āC ₂ aC ₃ تَاعَدَّى	PATTERN IV 'aC ₁ C ₂ aC ₃ اَتَعَدَّى	PATTERN V taC ₁ aC ₂ C ₃ aC ₃ تَتَعَدَّى
Richardson 1776 (1969:63)	a. From absolutes form transitives b. From transitives form [causatives]	Reciprocal action	a. From absolutes form transitives b. From transitives form [causatives]	[From II] a. Absolute b. Passive
Wright 1859 (1967: 1.31-38)	a. Intensive b. Extensive i. Temporally ii. Numerically c. Iterative / frequentative d. Causative / factitive e. Declarative / estimative f. Denominative	a. [Conative: where I performs act upon direct object.] attempt to perform that act upon the object [often with reciprocity] b. [Where I or IV has indirect object: implied reciprocity; now with direct object] c. [When I qualitative or stative: brings quality or state to another (direct object)] d. Sometimes denominative, but...effort and reciprocity... implied	a. Factitive / causative [if I intransitive, IV transitive; if I transitive, IV doubly transitive; if II and IV both causative, signification may or may not be different] b. Declarative / estimative c. Denominative d. مطبوع [-reflexive] of I...in a few cases (instead of VII or VIII)	a. Reflexive [of II]: in English...often rendered by the passive. i. Intensiveness may be traced ii. Reflexiveness often not very prominent especially [with] direct object. iii. [II and V sometimes interchangeable] b. Effective
Newman (1895: 99-100)	a. Frequentative / imperfect b. Intensive c. Causative to [I]	[Mutuality with direct object]	Properly causative to [I]; when II and IV...both causative, the sense sometimes differs	Reflective [sic.], neuter or passive of II
Thatcher (1922: 94-95)	a. Intensive b. Causative	a. Relation of the action to a person b. [Conative:] attempt to do the action	Causative	Reflective of II
Cowan (1958: 137-144, 150)	a. [Intensive] b. [Causative] c. [Estimative] d. [Denominative]	a. Doing an action to someone [implied reciprocity] b. [Conative:] attempt to do something to someone c. Occasionally...no reciprocity	Causative; occasionally [II and IV] occur with somewhat different meanings	Reflective [of II]

Table 25.1: Meanings from grammars: patterns II to V

SOURCE	PATTERN I	PATTERN II	PATTERN III	PATTERN IV	PATTERN V
Wicikens (1980: 65-68)	a. Intransitive verb made transitive b. Transitive verb made doubly transitive (i.e. causative) c. [Intensive] d. [Extensive] e. Denominative f. Estimative	a. [Reciprocal] b. Conative	[c.f. form II] Sometimes... used... more or less identically... sometimes... a subtle distinction... sometimes one is preferred a. [Intransitive made transitive] b. [Transitive made doubly transitive (i.e. causative)] c. [Denominative]	a. Reflexive of...II b. Representing oneself as being... sometimes [with] an overtone of ridicule or contempt c. Often... difficult to define	
Holes (2004: 101-103)	a. Intensive b. Extensive c. [Causative] d. Estimative / ascriptive e. Denominative	a. Conative b. Involvement of patient... often implied	a. Causative / factitive [of root]; in some roots... overlap with [II]... in others... a difference b. Inchoative denominatives	a. Effective / reflexive; many roots...stative (I) – causative (II) – effective/reflexive (V) b. Potentiality	
Badawi et al. (2004:60)	a. Factitive / causative b. Delocutive	a. Conative b. Indirect obj. ...into direct obj.	a. Causative b. Performing in a certain manner	Often the reflexive of ...[II]	
Schulz (2004:29)	Nearly all... transitive a. [Intensive] b. Causative c. Denominative	Nearly all... transitive a. [Conative:] denoting an aim (attempted) effect on a person or thing b. Many verbs do not show this meaning	Most... are transitive a. Causative b. Denominative c. Various other meanings which are hard to summarize	Mostly intransitive a. Intransitives in relation to...I b. Some denominatives	
Ryding (2005: 491, 503, 515, 530)	a. Causative of transitive [I] b. If [I] intransitive, [II] may be transitive c. Intensive d. [Repetitive] e. Denominative	a. Associative b. Reciprocal c. [Repetitive] d. [Conative]	Causative of [I]: if [I] intransitive, [IV] transitive; if [II] transitive, [IV] may be doubly transitive. May have meanings similar to [II]	a. Reflexive of [II]... (mediopassive) b. Resultative of [III] c. Gradual progress in an activity or state.	

Table 25.1 (cont.): Meanings from grammars: patterns II to V

SOURCE	PATTERN VI taC ₁ āC ₂ aC ₃ تفاعل	PATTERN VII (īm)C ₁ aC ₂ aC ₃ ادفعل	PATTERN VIII (ī)C ₁ taC ₂ aC ₃ افتعل	PATTERN X (ī)staC ₁ C ₂ aC ₃ استفعل
Richardson 1776 (1969: 63-64)	Co-operation or mutual action, nearly c. corresponding with [III]	[F rom II] a. Absolute b. Passive	[F rom I] a. Absolute b. Passive	a. Petitioning b. Desiring
Wright 1859 (1967: I. 38-46)	a. مطوع [= reflexive of III with] necessary reciprocity b. Reciprocity may be confined to the parts of one and the same thing	a. Originally... middle or reflexive [of I]. Never... reciprocal... approaches more nearly to a passive b. [Permitting] an act to be done... or an effect to be produced c. مطوع [= passive of V]	a. Reflexive or middle voice [of I] b. Reciprocal c. Occasionally... passive... especially [where no form VII exists]	a. Converts the factitive [of IV] into the reflexive or middle b. [Estimative: to deem that something has the quality signified by I in reference to self] c. Taking, seeking, asking for, or demanding what is meant by [I] d. Denominative... unites the factitive and reflexive or middle senses
Newman (1895: 99-101)	a. Reflective [sic], neuter or passive of III b. [Preterence] or affectation Reflexive of III		a. Comparable to the Greek middle voice, in relation to [I] b. Often superseded [I]	a. Desire b. [Estimative] c. Neuter
Thatcher (1922: 95-96)	Reflexive of III	Originally Reflexive of I but generally used as a Passive	Reflexive of I	Properly reflexive of IV
Cowan (1968: 153, 159, 161, 169)	a. Reflexive of III b. [Reciprocity may be absent] c. [Preterence]	Passive or reflexive of [I]	a. Reflexive [of I]; may take a direct object b. Sometimes... no great difference in meaning [between I and VIII]	a. Reflexive [of IV] b. Asking / taking c. Using for oneself d. [Estimative]

Table 25.2: Meanings from grammars: patterns VI to VIII and X

SOURCE	PATTERN VI	PATTERN VII	PATTERN VIII	PATTERN X
Wicikens (1980: 68, 71-72)	a. Reflexive or a "mutualiser" of ...III b. Outward representation... pretence	Commonly renders a transitive Form I intransitive, quasi-reflexive or "neuter" Often doubles or interchanges with V, but cannot take an explicit object	a. Sometimes identical with...II b. [Some resemblance to] "reflexive" sense of IV and V/II]...sometimes doubling or interchanging with one or other c. Extremely difficult to analyse as to meaning	a. Asking or requesting b. Doing something for one's own advantage c. Estimative d. Shade of meaning...difficult to pin down
Holes (2004: 103-105)	a. Necessarily reciprocal [of III] b. Stative relationships holding between the component parts of an entity c. Continuous or iterative d. Simulative [pretence]	a. Passive [of I] b. Reflexive-effective [similar to V]	a. Reflexive...similar to...IV and VIII] b. Benefactive	a. Reflexive or reflexive-benefactive correlate of causative [IV] b. Estimative c. Eductive (i.e. eliciting or seeking)
Badawi et al. (2004: 61-62)	Often the reflexive of ... [III]	Middle / passive	a. Mostly...the action has some personal importance to the agent b. Meanings...impossible to define with accuracy	a. Estimative b. Requests
Schulz (2004: 29)	Transitive and intransitive Mostly a reciprocal [of III]	All intransitive a. Intransitives b. Reflexives c. In colloquial...passive [of I] عطف	Partly transitive, partly intransitive a. Various meanings b. Some...reciprocal [of I]	Primarily transitive Often... "to request s.th., to ask s.o. for s.th."
Ryding (2005: 543, 555, 565, 584)	a. Reciprocal of [III] b. Gradual, continuous movement or increase in a quality c. [Pretence]	a. Reflexive / resultative / passive/ mediopassive. b. Consequences of [I] action (ergative / unaccusative)	a. Reflexive / Mediopassive b. Wide range of [unpredictable] meanings c. Consequences of [I] action (عطف = resultative) d. Reciprocal	a. Requestative b. Estimative c. Reflexive of [IV] d. Other semantic modifications

Table 25.2 (cont.): Meanings from grammars: patterns VI to VIII and X

minimal set of possibilities. So, for example for pattern II they only discuss 'factitive or causative' and 'delocutive' usages, to the exclusion of all others, although in fairness in the preamble to the section they do recommend that their 'brief characterisations ... should be reinforced by consultation of more detailed sources' (Badawi et al. 2004:60). This reductionism is somewhat curious given that theirs is one of the weightier tomes and is subtitled *A Comprehensive Grammar*. Doubtless there are good pedagogical reasons for not overburdening the student beginning to study Arabic with too wide a range of semantic usages. However, the authors claim that 'it is not a pedagogical work in itself' and that it is aimed at (amongst others) 'the student of Arabic at a relatively advanced level' and at 'the specialist in Arabic linguistics who needs data on which to base theories' (Badawi et al. 2004:1). Perhaps the clue to the authors' reasons for their approach to verbal semantics lies in the fact that they treat the verbal patterns in their foundational opening chapter entitled 'Forms' and indeed the emphasis throughout the volume is on the structure of the language, thus stressing its formal properties both morphologically and syntactically over and above its semantic nuances.

However, even within this constraint, it is puzzling that this grammar is alone within the ten surveyed in not mentioning the intensive use of pattern II, while many also note the related extensive meaning. Likewise, Badawi et al. is alone in drawing attention to delocutive alternates such as example (29), whilst neglecting to mention that in the modern language 'Pattern II has been put to particularly heavy use in the coining of denominative verbs' (Holes 2004:101), i.e. in forming verbs from nouns.

(29) كَبَّرَ

[II]

kabbara'to say *allāhu 'akbar*'

(Badawi et al. 2004:60)

It is also perhaps noteworthy that while Badawi et al. employ a similar approach for almost all the other patterns, when addressing the semantics of pattern VIII they are forced to admit that 'the meanings ... are impossible to define with accuracy' (Badawi et al. 2004:61).

In the oldest grammar consulted, Richardson also tends towards a reductionist strategy, though this is entirely consistent with the motivations explained in his preface:

Among the many reasons which may be assigned for our limited knowledge of this language, the first, and perhaps not the least, arises apparently from the perplexing obscurity and unengaging manner of grammarians; who, without sufficiently attending to that simplicity and perspicuity which ought ever to be the necessary guides to the uninformed minds of youth, bend their chief efforts to the investigation of unuseful trifles, uninteresting definitions, and polemical subtleties; involving the whole in such obscure terms, as to demand often as much time, patience, and penetration to decypher [sic] the meaning of the teacher, as to acquire the language itself through a less complicated medium.

(Richardson 1969[1776]:vii)

4.2.2 The 'explicit specification' approach

The most striking example of this strategy is Wright, first published in 1859 and last

revised by Robertson Smith and de Goeje some forty years later, in which the author has drawn both upon the works of Caspari and other Europeans and on that of Arab grammarians, spanning the ancient and more contemporary (Wright 1967:v). It is significant that Wright is still held in high regard as a reference grammar and a casual flick through its pages soon reveals a level of detail appropriate to such a work. Indeed, in their respective prefaces, Thatcher and Cowan, whose grammars are intentionally didactic, refer their students to Wright for further grammatical study (Thatcher 1922:v; Cowan 1958:vi).

It will again be convenient to examine the treatment of pattern II semantics, noting that Wright identifies and specifies six or even seven usages. Of these, the causative or factitive usage is identified as the most common, and indeed is the one example of usage mentioned by all the grammars surveyed. There is some suggestion in his layout that Wright (1967:I.31-32) considers the declarative or estimative usage, such as example (30), and the denominative usage, as in example (31), as subsidiaries of the factitive:

(30) كَدَّب [II]

kadhhaba

'to call [s.o.] a liar' (c.f. pattern I: كَذَب *kadhaba* - 'to lie')

(31) خَيَّمَ [II]

khayyama

'to pitch a tent' (no pattern I verb from this root)

Likewise, where some grammarians reduce the other primary meaning of pattern II simply to 'intensive', Wright (1967:I.31) distinguishes three categories in which 'the signification agrees with the form': intensive ('with *great violence*'); extensive, with subdivision into temporal ('during a *long time*') and numerical ('to or by a *number* of individuals'); and iterative or frequentative ('*repeatedly*'). Note that Wright is also claiming here that there exists a measure of iconicity in the gemination of the middle radical. His examples include:

(32) ضَرَّبَ [II]

Darraba

'to beat violently' (intensive)

(33) قَتَّلَ [II]

qattala

'to massacre' (numerically extensive)

It could be argued that Wright is describing the Classical language rather than Modern Standard. Characterising Arabic in such terms implies that the former variety is fixed and historically determinable, whereas the latter is necessarily undergoing constant modification by those who use it and is thus subject to contemporary trends, with the concomitant possibility that older usages have been or are being lost, modified or replaced. However, those modern grammarians whose approach is similarly explicit continue to attest to the presence of all of Wright's categories in MSA. Thus, Holes (2004:101-102) reiterates Wright's designations, with the exception of the iterative. In

reference to current trends he places special emphasis, as already noted, on modern denominative usage whilst observing that there is a tendency for older extensive and intensive meanings to give way to purely causative meanings. He gives examples (34) and (35) respectively:

(34) مَوَّت [II]

mawwata

'to cause to die' (no longer 'die in large numbers')

(35) نَوَّم [II]

nawwama

'to put to sleep' (no longer 'sleep deeply') (Holes 2004:102)

What then of Wright's iterative or frequentative category as a subdivision of the intensive? Although this is not specified separately by most of the modern grammarians, Ryding (2005:491) does refer to 'intensive or repeated action', though without giving an example to provide evidence that there is an iterative shade of meaning distinct from the purely intensive. However, it can be seen in examples (36a-b) that intensive effect in pattern II can indeed be achieved by repeated or iterative action.

(36a) قَطَعَ [I]

qaTa عا

'to cut'

(36b) قطع

[II]

qaTTa عا

'to cut to pieces'

4.2.3 The approaches compared

It is entirely appropriate for the various grammarians to tailor their treatment of the verbal semantics of the derived patterns to their intended readership. Thus the tendencies for didactic works to oversimplify and for reference works to examine detail should not be surprising. There is certainly merit for the student in consulting a range of grammars, lest one fall into one or other of the twin traps of either believing that Arabic verbal semantics is almost entirely predictable, within a small and bounded set of meanings, or concluding that the system is more or less chaotic, with consequently little reward of semantic predictability possible from studying the formal realisations of each pattern. The student who errs in the former direction will often tend to overgeneralise the meaning of a newly encountered verb of a given pattern, whilst his counterpart who strays toward the latter extreme will fail to avail himself of the benefits of noticing the semantic commonalities which do exist between verbs employing the same pattern.

4.3 The linguist's contribution

Linguists who choose to tackle the complexities of the Arabic verbal system do so broadly from one of the following opposing perspectives: historical examination of Arabic within the context of Semitic comparative linguistics and synchronic description or modelling of the Arabic verbal system for theoretical purposes.

4.3.1 Semitic comparative linguistics

Although it is synchronic study of the verbal system of modern Arabic which is central to our purposes, the possible benefits of examining Arabic within the Semitic context, including historically, should not be neglected. In particular, it may be valuable to ask whether there is evidence to support the notion that verbal patterning in Semitic as a whole has a regular and defined semantic component.

However, preliminary examination reveals that there may be little cause for optimism that a Semitic viewpoint will provide any more clarity. This should not be entirely surprising, since many of the grammarians of Classical Arabic, most conspicuously Wright, have already referred extensively to the wider Semitic context in drawing their conclusions. The following comment on Semitic as a whole closely mirrors those found in Arabic grammars:

The Semitic verb has a set of themes or stems ... in which formal changes correspond to certain semantic variations and express different aspects of the action connoted by the root. The semantic connexions may be somewhat fluctuating and are not always readily identifiable. (Moscati 1964:122)

However, there is some prospect of semantic systematicity expressed here in Doron's study of the Hebrew templatic system, the principles of which she extends more generally to Semitic:

Though the template system is on principle the same in all the Semitic languages, the actual forms vary from language to language.... Since each and

every active-voice verb in Hebrew is derived by one of exactly three templates, it is natural to suspect that the choice of template is not arbitrary, but that it indicates some factor of the meaning of the derived verb. This indeed is the traditional view concerning the templates, as is suggested, for example, by the term *causative*. Yet modern linguists ... have noted numerous examples where the semantic contribution of the template is unpredictable ... and have concluded that these examples doom to failure any attempt at a systematic analysis. Though I agree that the semantic contribution of the templates is not transparent, I disagree that it is not systematic. (Doron 2003:17)

Meanwhile, other comparative studies of the Semitic verb concentrate on its distinctive morphology or on its tense-aspect properties. For example, Bennett (1998) provides comprehensive verbal paradigms, but no analysis of pan-Semitic semantics. Cohen introduces his work on the Semitic verbal system by declaring that '[l]a principale richesse du verbe sémitique est une grande abondance de thèmes pour chaque racine ... [qui] peuvent exprimer le rôle du sujet par rapport au procès ... ou un mode du procès'. He proceeds to elaborate on the formal realisations of these themes or patterns in Arabic. Disappointingly, however, he concludes that '[i]l est hors du sujet du présent livre d'insister sur ces thèmes verbaux.' (Cohen 1924:8-9). O'Leary (1969:210) does venture further, contrasting Semitic with Indo-European and tentatively offering his opinion that the limited development of the tense system in Semitic might somehow be related to more extensive development of themes or derived stems than in Indo-European languages, in which the tense system is more complex. This suggestion of typological interdependency is potentially of interest, particularly in regard to the relatedness of

grammatical and lexical aspect in MSA,¹⁷ but O'Leary does not develop his argument further, and it is of little use here in our search for semantic consistency in the derived verb patterns.

If the prospect of an overarching description of Semitic verbal morpho-semantic relationships is unrealistic, insight might still be gained from comparison of individual cognate patterns and their development. However, at the outset it must be recognised that semantic diversification within certain individual Semitic patterns has an extremely long history. In Danks (2007) I noted that the diversity and unpredictability of MSA pattern X semantics is to be expected, given the presence of a morphological cognate with a broad range of semantic application in Akkadian, written evidence for which dates back over four millennia: specifically, Akkadian of this period exhibits a 'Št-lexical' stem with 'a wide range of uses and meanings ... many of [which] are unpredictable' (Huehnergard 2000:435).

Nevertheless, we will take pattern II, which with its gemination of the middle radical is the most common type across the Semitic languages, as an example of what can be gleaned from cross-linguistic comparison. O'Leary (1969:210-212), designating the pattern 'intensive', begins by stating that intensive and both temporally and numerically extensive usages are 'basal'. He continues with denominatives and extends usage of the pattern to 'semi-causative', highlighting the commonality of its syntactico-semantic function across Semitic, rendering intransitives transitive and transitives doubly transitive. He fails, however, to plausibly argue a link between intensive and (semi-)causative: thus, why is *فرّح* (*farraHa*) 'to gladden' designated as intensive, and

¹⁷ See Chapter 8.

why does deriving قَتَّل (*qattala* - 'to slaughter') from قَتَلَ (*qatala* - 'to kill') not produce a verb which is doubly transitive? For Doron (2003:17-19) it is almost a matter of doctrine that Semitic patterns involving middle radical gemination are intensive, drawing a clear distinction between these and the causative alternations represented in Arabic by pattern IV أَفْعَلَ (*'af'ala*). Wright (1967:I.31), similarly recognising the historical Semitic evidence, holds that the pattern II intensive is original, whilst the causative or factitive arises from it.¹⁸ Does Doron, then, allow the possibility that what she terms the intensive template may be used causatively, even though her terminology appears to preclude it? Her statement that 'the intensive alternation is not [a valence-increasing alternation]' is subject to a caveat that this is a generalisation which requires re-examination (Doron 2003:19) and indeed she does provide Hebrew examples

where the intensive template involves a valence increase. This happens when the simple verb is unaccusative. Unlike unergative and transitive simple verbs, where the intensive template assigns the actor thematic role to one of the arguments of the simple verb, if the simple verb is unaccusative, then the actor role is assigned to an additional argument. The intensive verbs in [these examples] which correspond to simple unaccusative verbs, are therefore just as transitive as the equi-rooted causative verbs. (Doron 2003:26)

One such Hebrew example is given in (37).

¹⁸ See also Gray (1934:79).

(37)	<i>Root</i>	<i>Simple verb</i>	<i>Intensive verb</i>	<i>Causative verb</i>
		<i>(Unaccusative)</i>	<i>(Transitive)</i>	<i>(Transitive)</i>
	[t][b][ʕ]	[t]a[v]a[ʕ] ‘drown’	[t]i[b]ea[ʕ] ‘drown’	hi[t][b]ia[ʕ] ‘drown’

(Doron 2003:26)

Now, if a verb in the 'intensive alternation' is syntactically transitive to the same degree as the corresponding verb in the 'causative alternation' and if it involves the participation of the additional argument in the 'actor thematic role', in what way is it not causative? It must be recognised that the purpose of Doron's paper is to examine agency and indeed she does draw a distinction in degree of animacy between the agents of these types of verbs. However, there is a danger of confusing terminology and function here.

The practice of calling grammatical categories after their meanings is an invidious one and goes against the grain of structuralism, not to mention common sense. The reason is that ... linguistics is a search for meanings, and if we commit ourselves to a meaning for a given form by naming the form after its supposed meaning, it makes it difficult to change our mind about its meaning in the light of further research. (Beedham 2005:19)

Thus to maintain that a verb is intensive rather than causative because it happens to be homomorphic with a category we have already labelled 'intensive' and morphologically distinct from one labelled 'causative' is to prejudge the issue.

Ryder devotes an entire monograph to what he prefers to call the 'D-stem' in Semitic, though he admits that 'this study raises more questions than it will answer'

(1974:9). His first chapter neatly summarises the aforementioned assumptions in the historical approach and suggests alternative hypotheses. In particular, he cautions against a 'pseudopsychological correlation of "strengthening" between form and meaning (a confusion of linguistic forms with that which they symbolize)', later claiming that this is 'an over-romanticizing of the stem's function' (Ryder 1974:11-12;166). Clearly he does not share Doron's conviction that the pattern is fundamentally intensive, a meaning from which all others derive, and goes as far as to suggest that this traditional interpretation is 'a misconstruction of the reference which the Arab grammarians made to the D-stem, as denoting [*takthīr*] or "increase"' (Ryder 1974:166). It is also worthwhile to note that Ryder examines an alternative hypothesis applicable to form-meaning relationships within this Semitic pattern, which perhaps appeals more to the Saussurean view than the possibility of one form with two or more meanings. This hypothesis allows that what we see in MSA could represent homomorphic forms with 'two or more phonological and / or morphological origins', each of which has its own function, or more succinctly, 'the "Semitic D-stem" may be a conglomerate of forms similar only orthographically' (Ryder 1974:11).

Goetze (1942:2) also considers that 'the meaning of the so-called intensive is ill-defined' and shares Ryder's view that middle radical gemination as symbolic of intensification is a 'romantic notion'. Attacking the primacy of intensivity among the meanings of the pattern as an unjustified assumption, and referring here to the D-stem by the nomenclature used by scholars of Hebrew, Goetze asserts that:

[m]odern linguistics must reject such a prioris; it must demand that the meaning

of the pi^cel is determined by a broad enough survey of actual occurrences and by a definition of the conditions which govern them. (Goetze 1942:2)

Some insight as to why the traditional identification of intensivity with gemination may have appealed to the Arab grammarians is provided here by Leemhuis, who cautions that:

it should be remembered that they were not in the first place concerned with a description of the language and how it was used; they were prescribing the language for their contemporaries and how it should be ideally used. Moreover, they became more and more convinced that the Arabic language, as a Godgiven treasure, was a miracle of logic; the only task of the grammarian was to discover and lay bare the bases of this absolute system and either to refer the facts of the language to these bases or to reject them as improper. (Leemhuis 1977:8)

We must as a minimum surely allow that the Semitic pattern characterised formally by a geminated middle radical (Arabic pattern II) has both intensive and causative meanings associated with it, diachronically and synchronically, and that the prefixed pattern formally represented in Arabic by pattern IV is also capable of causative meaning, albeit with the possibility that there may be different semantic nuances between the causatives formally realised by these two distinct patterns. It has already been noted that MSA pattern II verbs are increasingly being used with causative meaning, a semantic domain previously more associated with pattern IV. Moreover it is recognised that 'sometimes there is a subtle distinction between II and IV' (Wickens

1980:67). Whether or not we accept a multiple origin hypothesis for pattern II, which incidentally Ryder eventually rejects, it is important to emphasise that 'intensive' and 'causative' are semantic rather than formal labels, and in keeping with Saussurean principles we should keep form and meaning distinct, whilst recognising that they are inextricably linked.

4.3.2 The synchronic linguist's perspective

The specialist linguist with a Saussurean perspective must necessarily be intrigued by such a search for a coherent and consistent link between morphological forms and meanings. We will therefore proceed to examine whether synchronic linguistic studies have made relevant contributions towards solving the puzzle.

It must be recognised that although the Arabic verb is the subject of numerous linguistic monographs and articles, those which treat the verbal system comprehensively are few. To reiterate, the linguist writes from completely different motivations from the grammarian, and as such may be justified in only exploring those components of the system which have direct bearing on the author's thesis or field of study. Thus, for example, while it might be supposed that a volume entitled *Structure and Function of the Arabic Verb* (Bahloul 2008) would devote space to the form-meaning relationships within the derived verbal patterns, this topic is outwith the scope of his work, which concentrates on inflectional verbal morphology and its relationship to the issues of tense, modality and aspect in MSA. Meanwhile, Bakalla (1979) is concerned with a generative approach to verbal morphology which concentrates on syntactic motivations.

Some do treat the derived verbal patterns, but only as a preliminary to developing

their main argument. For example, Mohammad (1983) principally seeks to pursue a generative semantic approach to the tense-aspect system and his analysis of the semantics of the derived patterns, although present, is thus superficial and incomplete. Similarly, Al-Qahtani (2005) sets out to apply Case Grammar theory to MSA, and in passing contributes a considerable volume of data on the verbal patterns and their lexical occurrence. His comment that 'counterexamples to any statement can be numerous and exceed the anticipation of researchers' draws attention to the fact that the verbal system of MSA is rich in lexical exceptions and prompts an admission that, inasmuch as he will attempt to categorise the meanings of the various patterns, 'statements here are approximate' (Al-Qahtani 2005:102-103). There are also other works, such as *The Phonology and Morphology of Arabic* (Watson 2002), which, while referencing the verbal system of MSA, are principally concerned with dialects, in Watson's case San'ani and Cairene Arabic.

Thus, it is somewhat rare to discover evidence of any significant progress towards tackling the intractable issue of the semantics of the Semitic verbal system by examination of its synchronic manifestation in MSA. Fassi Fehri's paper on Arabic anti-causatives begins encouragingly, assuring the reader that 'lexicological research has shown that ... lexical knowledge is predictable and derivable (to a large extent) from the general principles of the grammar' and he therefore sets out to tackle what he calls 'puzzling descriptive problems that call for appropriate solutions to make the lexical processes regular' (Fassi Fehri 1987:1). Pattern II causatives are among the verbs under scrutiny here, though the author reveals traditionalist influences in referring to them as intensives (Fassi Fehri 1987:7-8). In fairness, he does make progress towards his goals

inasmuch as he argues plausibly for constraints on causativisation and anti-causativisation as processes, but it is not within his remit at this point to investigate the underlying meaning of the geminated pattern II or any other.

According to Cuvalay-Haak (1997:89), '[s]peakers of MSA are able to extend a root which is familiar in one pattern to others, and they usually agree on the interpretation of the result.' She seems to imply that there is some prospect of identifying a unifying semantic component to a given pattern. However, concerning extension of the root to other patterns, El-Tikaina (1983) regards the ability of traditional, structural grammar to produce non-existent verbal forms as evidence that its very basis is flawed. Stressing the centrality of the lexicon, and using as a foundation his lexical categorisation of Arabic verbs, he essentially sets out to argue that form proceeds from meaning. Thus it is the meaning of the root which imposes constraints upon the allowable patterns, rather than the semantics of the formal pattern which combines with the root meaning to endow the derived verb with a distinctive meaning of its own. Consequently he finds it necessary to invoke two separate homomorphic derivations, both designated R2 to account for the diversity of verbs formed on pattern II (El-Tikaina 1983:35-36).

Despite Cuvalay-Haak's initial optimism, she continues:

I will not try to produce a single unified meaning for each pattern. Although some of the different uses of one pattern may be related to the same underlying semantic principles, they must all be represented separately if we are to arrive at an accurate description. The ascription of a single, all-encompassing meaning to each pattern may contribute to our understanding of historical semantics, but

does not simplify the synchronic account of the functions involved.

(Cuvalay-Haak 1997:95)

Unusually, Cuvalay-Haak (1997:97-101) classifies the various verbs of pattern II according to their derivations as 'deverbal', 'denominative' and 'delocutive', rather than on the basis of their semantics, also helpfully surveying in brief the treatments of this pattern by a number of other authors including Chouémi (1966) and Leemhuis (1977), both of whom are concerned with the Arabic of the Qur'an, rather than MSA. Interestingly, although Chouémi (1966:84;108) maintains that 'La valeur fondamentale de la II^e forme est l'intensité qui provient du redoublement de la 2^e consonne', his statistical analysis of the Qur'an reveals that 75% of the verbs therein which are formed on this pattern are not strictly intensive. With the exception of Greenberg (1991), however, Cuvalay-Haak's sources provide little fresh insight, largely repeating material we have already encountered.

The contribution from Greenberg, eminent in the field of linguistic typology and universals, properly belongs in the previous section, dealing as it does with pattern II cognates cross-linguistically in Semitic. He notes from typological study of the category of number in verbs that reduplication is 'by no means the only method, but a particularly prominent one in the expression of distributive plurality in the verb' (Greenberg 1991:584). This suggests that the notion that middle radical gemination in Semitic may iconically find expression in the semantics of the verb by means of some kind of sound symbolism may not merely be romantic or motivated by a dogmatic elevation of Arabic to the status of some ideal language, but that it fully deserves deeper analysis with regard

to the property of verbal number.

This challenge is taken up by Fassi Fehri, who, despite his earlier support for the regularity of lexical processes, begins by admitting that '[t]he correspondence between morphologically complex Arabic forms (or Semitic binyanim) and their syntactico-semantic properties, alternations, and uses has until now resisted any systematic and/or unifying treatment.' (Fassi Fehri 2003:152). However, his paper claims that the unifying property of pattern II gemination is indeed that of verbal plurality as suggested by Greenberg: thus intensivity is explained by '*multiple* or *repetitive* action, interpreted as [event plurality]' while causativity involves 'plurality of participants' in which transitivity is attributable to 'partitioned plurality (alternating with assembled plurality in the repetitive)' (Fassi Fehri 2003:162). Although it may be argued that certain pattern II denominatives and delocutives cannot readily be subsumed under this scheme, it is certainly a welcome step towards a unified semantic description of at least one of the verbal patterns of MSA. We shall return to the notion of verbal plurality in Chapter 7.

4.4 Summary

There is a widespread, if not universal, sense that the scheme of Arabic derived verbal patterns *ought* to give rise to systematically predictable semantics. At one extreme, overly simplistic claims of predictability have either been stated as accepted fact, or argued on the basis of *a priori* reasoning, the origins of which may have been influenced, whether consciously or not, by Islamic religious dogma. At the other extreme, the search for systematic form-meaning correspondence, whilst not intrinsically undesirable, has been almost stigmatised as vain romanticising, with the result that many

have simply cautioned that we must accept that a coherent explanation is permanently beyond our grasp. Given the diversity of the opinions expressed, and the evidence that this puzzle belongs as much to Semitic as to MSA, it would indeed be tempting to abandon hope of identifying any systematicity within Arabic verbal semantics, contenting oneself with explanations that the answers lie safely, if frustratingly, buried in the historical linguistics of Semitic and beyond the reach of synchronic study. However, we return to the Saussurean notion of a language as 'un système où tout se tient' (Meillet 1893:318-319 in Koerner 1999:26), and contend that Arabic, and specifically MSA, is a system in the Saussurean sense. With that in mind, it may not be possible to accurately reconstruct how the system of verbal derivations arrived at the state we observe now, morphologically and semantically, but it should be possible to analyse what its components mean synchronically in relation to each other and to the language as a whole.

Chapter 5

Evaluating the pattern III – pattern VI semantic relationship

In the preceding three chapters, we have examined the verbal patterns of MSA according to their lexical distribution, morphology and semantics. We are now in a position to select a set of verbs for closer examination.

5.1 Selection of patterns III and VI

It will be shown here how the verbal patterns III and VI have been selected for further study, having in mind the requirements of Beedham (2005) and considering their relationships to other patterns in the language system in recognition of the principles of Saussurean structuralism more generally:

- i. Patterns III and VI together show the highest degree of correlation of occurrence in the lexicon (section 2.2.2.3.3).
- ii. There is a clear and relatively uncontroversial mechanism of derivation of pattern VI from pattern III by *ta-* prefixation (sections 2.1.2.5.1; 2.1.2.5.3; 3.2.2.4).
- iii. Patterns III and VI stand in the same morphological relationship to one another as do patterns II and V and patterns QI and QII (section 2.1.2.5.1).
- iv. Pattern III has been shown to share a prosodic skeleton with patterns II and QI and their vowel melodies are identical; likewise pattern VI corresponds with V and QII (sections 3.2.2.4; 2.1.2.5.2).

- v. There is broad agreement that pattern III most commonly involves mutuality of action whilst pattern VI entails explicit reciprocity. However, there are numerous exceptions to this generalisation (Tables 25.1 - 25.2, Chapter 4)
- vi. Both patterns III (465 verbs) and VI (389 verbs) occur commonly enough in the lexicon for data to be statistically meaningful, whilst their numbers are not so great that detailed semantic examination of lexical exceptions is unmanageable (section 2.2.2.2).

5.2 Mutuality and reciprocity

5.2.1 Data collection

In order to assess to what degree the claims for pattern III mutuality and pattern VI reciprocity are valid, and indeed to what extent pairs in both patterns from the same root stand in direct relationship of meaning to one another as derivational morphology would imply, a survey of all verbs formed according to these patterns was conducted using Wehr (1994).

It was necessary in a preliminary survey to make many judgements and assumptions based on available data. Ideally, each verb would be observed and assessed in the context of discourse, but in practice an exhaustive search of a corpus examining each individual occurrence of hundreds of verbs is unworkable, and it must be assumed that the lexicographer has accurately represented all attested uses. In the data tables listed in Appendix I, each verbal usage has been assigned a category label according to its semantics and syntax as listed by Wehr. A full key to the category labels is also provided in Appendix II. Table 26 shows example category data for two roots (قتل –

q-t-l and نزع – *n-z-ʿ*) which form verbs in patterns III and VI.

C ₁	C ₂	C ₃	III	VI
ق	ت	ل	MUT	REC
ن	ز	ع	TRA/MUT/TRA-/MUT+/ STA/TRA±	REC/REC+

Table 26: Verb category data extract

For some roots the mutual and reciprocal meanings are clear, unambiguous and in direct correspondence, for example:

(38a) قاتل [III] [MUT]

qātala (+ d.o.)

'to fight (s.o.)'¹⁹

(38b) تقاتل [VI] [REC]

taqātala

'to fight with one another'

In examples (38a-b), only one meaning is listed for each pattern. The verb in (38a) is transitive, taking a direct object which represents an implied mutual participant in the action performed by the grammatical subject of the verb, whereas in (38b) it is intransitive and reciprocal, necessarily requiring a subject which is grammatically or functionally dual or plural. Thus sentences (39a-c) effectively differ only in the thematic

¹⁹ See also section 5.3 for discussion of the conative sense of this verb.

presentation of the roles of the participants:²⁰

(39a) قاتل الملك الفلاح [III]

qātal-a l-malik-u l-fallāH

fight;PST-3MSG DEF-king-NOM DEF-peasant

'The king fought the peasant'

(39b) قاتل الفلاح الملك [III]

qātal-a l-fallāH-u l-malik

fight;PST-3MSG DEF-peasant-NOM DEF-king

'The peasant fought the king'

(39c) تقاتل الفلاح والملك [VI]

taqātal-a l-fallāH wa-l-malik

fight_together;PST-3MSG DEF-peasant and-DEF-king

'The peasant and the king fought together'

Hence the pattern III and VI derivatives of the root *q-t-l* represent the 'ideal' types of mutual and reciprocal verbs (monotransitive and intransitive respectively), which I have designated [MUT] and [REC] in my data. However, some verbs show variations in transitivity whilst maintaining the sense of mutuality or reciprocity:

²⁰ Fassi Fehri (2003:160) views sentences similar to (39a-b) as not equivalent. See also section 7.2.2.2.

(40a) تنازع [VI] [REC/REC+]

tanāza ع *a* (optionally + d.o.)

'to contend with one another / contest each other's right to (s.th.)'

(40b) تنازع الفلاح والملك المملكة [VI]

tanāza ع-*a* *l-fallāH* *wa-l-malik-u* *l-mamlaka*

contest_right_together;PST-3MSG DEF-peasant and-DEF-king-NOM DEF-kingdom

'The peasant and the king contested each other's right to the kingdom'

The pattern VI verb in (40a-b) optionally takes a direct object, representing the goal of the participants engaged in the reciprocal action of the verb. I record such a verbal usage as [REC+], though in fact the entry for this verb in the data appears as [REC/REC+] since Wehr (1994) lists usages with and without a direct object. Similarly, one of the entries for pattern III under the same root has the verb being used ditransitively with two direct objects. This usage of the verb in (41a-b) is designated in the data as [MUT+], representing the ideal [MUT] verb with an additional direct object.

(41a) نازع [III] [MUT+]

nāza ع *a* (+ d.o.) (+ d.o.)

'to contest the right of (s.o.) to (s.th.)'

(41b) نازع الفلاح الملك المملكة [III]

nāza ع-*a* *l-fallāH-u* *l-malik-a* *l-mamlaka*

contest_right;PST-3MSG DEF-peasant-NOM DEF-king-ACC DEF-kingdom

'The peasant contested the right of the king to the kingdom'

However, alternative usages of this verb are listed by Wehr (1994) which are clearly related in meaning though not necessarily implying mutuality, illustrating why it is often not a simple matter of assigning a given verb to a single category such as 'mutual':

(41c) نازع [III] [MUT] / [TRA]

nāza عا (+ d.o.)

'to contend with (s.o.) / to combat (s.th.)'

(41d) نازع في [III] [TRA-]

nāza عا *fī* (+ i.o.)

'to contest (s.th.)'

(41e) نازع [III] [STA]

nāza عا

'to be in the throes of death'

(41f) نازع الى [III] [TRA±]

nāza عا (+ d.o.) *ilā* (+ i.o.)

'to drive (s.o.) to do (s.th.)'

In (41c), both mutual and non-mutual monotransitive meanings are shown, designated [MUT] and [TRA]. The same verb may also take an indirect object as in (41d),²¹ whilst remaining functionally transitive, designated [TRA-], or a direct object and an indirect object as in (41f), designated [TRA±]. Without either direct or indirect object in (41e),

²¹ The term 'indirect object' will be used to refer to any verbal argument in Arabic introduced by a preposition and therefore in the genitive case, contrasting with the direct object in the accusative case.

the intransitive usage is stative or [STA]. Further complicating the entries for this particular verb is a ditransitive usage with two direct objects which Wehr (1994) lists as 'to attempt to wrest (from s.o. s.th.)', which appears superficially to be both conative and involving a directional transfer of the inanimate direct object from the animate direct object to the subject, a directionality which argues against mutuality. However, I am reluctant to list the verb separately as conative (in this case it would be [CON++], since it takes two direct objects), as any distinction from the meaning elaborated in (41a-b) is probably a mere artefact of translation into English, a phenomenon which we should be careful to avoid. For further discussion of conativity, see section 5.3.

Thus, in my data I list the pattern III verb from the root *n-z-ξ* and others which display similar diversity as belonging to all the distinct semantic / syntactic categories which I can identify and justify. Note that I have been guided by the listings in Wehr (1994) in assessing when direct and indirect objects are optional or obligatory for each verb. Interpretation of the data must take account of the extent to which subjective decisions have had to be made in order to arrive at a working set of data. I have therefore tried whenever interpreting the data to err on the side of caution.

5.2.2 Data interpreted

5.2.2.1 Pattern III mutuality

Totals are presented in Table 27 for the presence or absence of mutuality of action in pattern III according to whether or not the root also forms a verb in pattern VI. In order to arrive at a binary classification of verbs as either mutual (+[MUT]) or non-mutual (-[MUT]), it has been necessary to simplify the data in two ways. Firstly, verbs such as

nāza عا (نازع) in section 5.2.1, which have entries attributed to several categories one or more of which is mutual, are assumed to be +[MUT].

	+ [pattern VI]	- [pattern VI]	TOTAL
+ [MUT]	196	165	361 (77.6%)
- [MUT]	42	62	104 (22.4%)
TOTAL	238	227	465

Table 27: Occurrence of mutual meaning [MUT] in pattern III

Secondly, all verb categories as defined in Appendix II which exhibit implied mutuality of action are included as +[MUT], whether or not the verb takes an additional direct or indirect object. Examples (42) and (43) show verbs in categories with additional arguments:

(42) شاطر [III] [MUT+]

shāTara (+ d.o.) (+ d.o.)

'to halve with (s.o.) (s.th.)'

(43) واطأ على [III] [MUT±]

wāTa'a (+ d.o.) ع *alā* (+ i.o.)

'to be in agreement with (s.o.) on (s.th.)'

Note that there are also verbs with mutual meaning where the implied participant is present as the indirect object, hence giving rise to two other categories with and without

a second indirect object ([MUT-±] and [MUT-]) within my scheme of classification, though significantly I have not found these categories represented in pattern III, which is always directly transitive with respect to the implied participant.

In addition, I have tended towards a liberal interpretation of mutuality in cases where it is not clear. Compare examples (44) and (45):

(44) راکض [III]

rākaDa (+ d.o.)

'to race (s.o.)'

(45) زايد [III]

zāyada (+ d.o.)

'to outbid / make a higher bid than (s.o.)'

It is clear in (44) that the participants represented by both the grammatical subject and the direct object of the verb must necessarily be equal partners in the verbal event 'racing': it is impossible for the subject to race unless he is racing against someone else who is also racing. There are many pattern III verbs which represent this kind of equal partnership in a mutual action, a large number of which involve competition or conflict.²² However, in (45) the relationship between the participants is different: there is a sense in which the subject is in a position of superiority with respect to the direct object. Nevertheless, the participation of the second party in the verbal event 'bidding' is necessary to be able to say that the subject of the verb has outbid him. I therefore contend that this still implies mutuality of action between the participants represented by

²² See also the verbs in Table 26.

the subject and the direct object, though with an asymmetric relationship between them. Hence unlike the symmetrically mutual verb in (39a-b), equivalence in meaning does not exist between (46a-b), though the fully reciprocal pattern VI verb in (46c) does describe the overall 'bidding' event in terms of involvement of both participants in the process, lending weight to the argument that mutuality is implicit in the pattern III verb from which it is derived.

(46a) زايد الملك الفلاح [III]

zāyad-a l-malik-u l-fallāH
 outbid;PST-3MSG DEF-king-NOM DEF-peasant
 'The king outbid the peasant'

(46b) زايد الفلاح الملك [III]

zāyad-a l-fallāH-u l-malik
 outbid;PST-3MSG DEF-peasant-NOM DEF-king
 'The peasant outbid the king'

(46c) تزايد الفلاح والملك [VI]

tazāyad-a l-fallāH wa-l-malik
 outbid_each_other;PST-3MSG DEF-peasant-NOM and-DEF-king
 'The peasant and the king outbid one another'

This type of asymmetric mutuality is evident in many pattern III verbs, including a number with meanings involving cooperation, such as (47):

(47) **عالون في** [III]

ʿāwana (+ d.o.) *fī* (+ i.o.)

'to help, assist (s.o.) in / with (s.th.)'

Even though the simplifications and assignments I have made in the data have been biased in favour of mutual interpretation, it may be seen in Table 27 that only around three-quarters of pattern III verbs represent mutuality of action. Thus there remain over one hundred pattern III verbs for which no mutual interpretation is possible. Example (48) shows a verb which is transitive but does not involve a mutual participant, while (49) and (50) are both intransitive.

(48) **واثب** [III] [TRA]

wāṭhaba (+ d.o.)

'to pounce / fall upon (s.th.)'

(49) **ناور** [III] [INT]

nāwara

'to manoeuvre'

(50) **سافر** [III] [INT]

sāfara

'to travel / go on a journey'

Closer examination of (49) reveals that the verb is not derived from a Semitic root, but

rather the result of back-formation from the noun *مناورَة* (*munāwara*), itself a borrowing from English or French *manoeuvre*, which rather fortuitously resembles a pattern III verbal noun. There are isolated examples of this kind which need not trouble us unduly as they are not true Arabic exceptions, but rather serve to show how the root-and-pattern morphology is pressed into service to assimilate borrowings. In contrast, (50) is a very common verb which is not a recent borrowing.²³ Whilst it may be denominative, having a meaning not obviously related to the pattern I verb from the same root sequence *s-f-r*, this is not a sufficient explanation for why the verb appears to synchronically violate the form-meaning relationship for pattern III. Thus (48) and (50) exemplify true lexical exceptions to pattern III mutual meaning.

5.2.2.2 Pattern VI reciprocity

Table 28 gives data for the presence or absence of reciprocity [REC] in pattern VI according to whether or not the root also forms a verb in pattern III.

	+ [pattern III]	- [pattern III]	TOTAL
+ [REC]	181	68	249 (64.0%)
- [REC]	57	83	140 (37.0%)
TOTAL	238	151	389

Table 28: Occurrence of reciprocal meaning [REC] in pattern VI

Verbs with meanings attributable to several categories have been counted as positive for reciprocity as long as at least one meaning is reciprocal and, as before, categories

²³ 206 instances found in 1001 Nights, including verb forms and active participle (arabiCorpus)

differing in transitivity have been included, exemplified by (51) to (53). Note that no ditransitive reciprocals were found.

- (51) تھامس [VI] [REC]
tahāmasa
 'to whisper together'
- (52) تناقل [VI] [REC+]
tanāqala (+ d.o.)
 'to tell each other (s.th.)'
- (53) تظافر علی [VI] [REC±]
taDHāfara *ʿalā* (+ i.o.)
 'to join forces against (s.o. / s.th.)'

Although explicit reciprocity is the dominant meaning for pattern VI, this only accounts for somewhat less than two-thirds of all verbs in this pattern, as shown by the data in Table 28. Holes (2004:103) and others²⁴ report simulative meanings for some roots in pattern VI, involving pretence as in (54):

- (54) تمارض [VI] [SIM]
tamāraDa
 'to feign illness'

²⁴ Including Buckley (2004:403), not included in Table 25.2.

	+ [pattern III]	- [pattern III]	TOTAL
+ [SIM]	8 (3.6%)	29 (19.2%)	37 (9.5%)
- [SIM]	230 (96.4%)	122 (80.8%)	352 (90.5%)
TOTAL	238	151	389

Table 29: Occurrence of simulative meaning [SIM] in pattern VI

The data for the simulative verb category [SIM] as recorded in Table 29 interestingly shows that this pattern VI meaning is five times more common for roots which do not also form a verb in pattern III. This will be examined further in the following section, together with other pattern III – pattern VI correlations. As in the case of reciprocal verbs, simulative verbs in pattern VI occur with varying transitivity, for example:

(55) تناكر [VI] [SIM+]

tanākara (+ d.o.)

'to pretend not to know (s.th.)'

(56) تعامى عن [VI] [SIM±]

ta ʿāmā ʿan (+ i.o.)

'to pretend not to see (s.th.)'

It is noteworthy that only one verb was found to be a possible candidate for both reciprocal and simulative meanings:

(57a) تراءى [VI] [REC]

tarā'ā

'to see one another'

(57b) تراءى بـ [VI] [SIM±]

tarā'ā bi (+ i.o.)

'to feign / simulate (s.th.)'

However, other verbs in pattern VI cannot be categorised as either reciprocal or simulative, for example:

(58) تآكل [VI] [PAS]

ta'ākala bi (+ i.o.)

'to be consumed / corrode / become worn'

(59) تغايد [VI] [INT]

taghāyada

'to walk with a graceful, swinging gait'

Whilst (59) is most likely denominative, with no verbs in other patterns from the root *gh-y-d*, (58), which I have categorised as intransitive with a passive meaning, is representative of a small number of verbs which Ryding (2005:543) describes as denoting gradual change and in this case is derived from a very productive root which includes a pattern III mutual verb (60):

(60) أكل

[III] [MUT]

'ākala (+d.o.)

'to eat / dine with (s.o.)'

Verbs such as these, together with those identified as simulative, have been classified as exceptions to pattern VI reciprocal meaning.

5.2.2.3 Pattern III – pattern VI correlations

The data presented in Tables 27 - 29 have been tested for statistical significance using the chi-square test described in section 2.2.2.3.2 and the results shown in Tables 30 and 31. Although there is most likely a correlation between a root giving rise to mutual meaning in pattern III and its also forming a verb in pattern VI, there is almost a three-times higher degree of correlation between reciprocal meaning in pattern VI and presence of a pattern III verb from the same root. To rephrase this, the presence of pattern III for a pattern VI verb is a relatively good predictor that it has a reciprocal meaning.

	Chi-square (χ^2)	Probability (p)	Phi coefficient (Φ)
Pattern III [MUT] according to presence of pattern VI (Table 27)	6.25	<0.025 (significant)	0.12
Pattern VI [REC] according to presence of pattern III (Table 28)	38.6	<0.0001 (very significant)	0.31

Table 30: Significance of [MUT] and [REC] co-occurrences with patterns III and

VI

	Chi-square (χ^2)	Probability (p)	Phi coefficient (Φ)
Pattern VI [SIM] according to presence of pattern III (Table 29)	27.0	<0.0001 (very significant)	-0.26

Table 31: Significance of pattern VI [SIM] co-occurrences with pattern III

Conversely, simulative meaning in pattern VI is negatively correlated with the presence of a pattern III verb for the same root (Table 31), i.e. it is significantly more likely when pattern III is absent. However, the above correlations do not in themselves prove that pairs of pattern III – pattern VI verbs tend to have corresponding mutual-reciprocal meanings. Thus Table 32 contains data for all pattern III – pattern VI pairs, categorised independently for mutuality in pattern III and reciprocity in pattern VI, demonstrating that there is a highly significant and relatively strong correlation between these two properties.

	VI = + [REC]	VI = - [REC]	TOTAL
III = + [MUT]	166 (69.7%)	30 (12.6%)	196
III = - [MUT]	15 (6.3%)	27 (11.3%)	42
TOTAL	181	57	238
	Chi-square (χ^2) = 45.6	Probability (p) <0.0001 (very significant)	Phi coefficient (Φ) = 0.44

Table 32: Occurrence and significance of [MUT] / [REC] correlations in patterns

III and VI

Note, however, that there are 72 instances (over 30%) of co-occurrent pattern III and VI

verbs where the mutual-reciprocal relationship does not hold, including 27 where neither paradigmatic meaning applies.

5.2.2.4 Correlations with pattern I

The construction of the database allows correlations with other properties to be investigated. Thus, Table 33 presents correlation data for the presence or otherwise of a pattern I verb for a given root with corresponding pattern III mutuality and pattern VI reciprocity. Although there is weak correlation in each case with the presence of pattern I verbs, the chi-square values are not high enough to establish statistical significance at the level of $p = 0.05$. However, if we examine the correlations on the basis of the medial vowel of the pattern I verb (Table 34), the results are more promising, with the most significant chi-square values indicating that pattern VI reciprocal meanings are more likely for a root with a pattern I medial vowel 'a' (*fa ɛala*) verb and less likely if the corresponding vowel is 'u' (*fa ɛula*).

(a)			(b)		
	+ [pattern I]	- [pattern I]		+ [pattern I]	- [pattern I]
III = +[MUT]	327	34	VI = + [REC]	234	15
III = -[MUT]	89	15	VI = - [REC]	125	15
Chi-square	p	Phi	Chi-square	p	Phi
2.15	>0.1	0.07	2.77	>0.05	0.08
NOT SIGNIFICANT			NOT SIGNIFICANT		

Table 33: Occurrence of pattern III [MUT] and pattern VI [REC] with pattern I verb

(a)

	+ [pattern Ia]	- [pattern Ia]
III = +[MUT]	279	82
III = -[MUT]	83	21
Chi-square	p	Phi
0.30	>0.5	-0.03
NOT SIGNIFICANT		

(b)

	+ [pattern Ia]	- [pattern Ia]
VI = + [REC]	197	52
VI = - [REC]	90	50
Chi-square	p	Phi
10.2	<0.005	0.16
VERY SIGNIFICANT		

(c)

	+ [pattern Ii]	- [pattern Ii]
III = +[MUT]	80	281
III = -[MUT]	15	89
Chi-square	p	Phi
2.97	>0.05	0.08
NOT SIGNIFICANT		

(d)

	+ [pattern Ii]	- [pattern Ii]
VI = + [REC]	53	196
VI = - [REC]	40	100
Chi-square	p	Phi
2.62	>0.1	-0.08
NOT SIGNIFICANT		

(e)

	+ [pattern Iu]	- [pattern Iu]
III = +[MUT]	41	320
III = -[MUT]	10	94
Chi-square	p	Phi
0.25	>0.6	0.02
NOT SIGNIFICANT		

(f)

	+ [pattern Iu]	- [pattern Iu]
VI = + [REC]	24	225
VI = - [REC]	30	110
Chi-square	p	Phi
10.4	<0.005	-0.16
VERY SIGNIFICANT		

Table 34: Correlations for pattern III [MUT] and pattern VI [REC] with patterns Ia, Ii, Iu

The pattern I variants, which I have designated Ia, Ii and Iu according to their s-stem medial vowel, were introduced in section 2.1.2.2, while in section 3.1.1.2 it was noted that Holes (2004:101) views them as 'broadly associated with different categories of transitivity and dynamic versus stative meaning'. Specifically, he states that Ia 'generally denotes an action, transitive or intransitive, performed by an agent', Ii 'also frequently denotes actions, transitive and intransitive, but ones in which ... the agent is *agent moyen*:²⁵ not an agent pure and simple but one that affects itself in some way by the

²⁵ In the words of Fleisch (1979:231)

performance of its action', while Iu 'is always intransitive and denotes the possession or acquisition of a quality that is permanent' (Holes 2004:101). Before proceeding further, we may also examine the correlations between the presence of pattern I verbs and the distribution of mutual/reciprocal verb pairs in patterns III and VI. However, no statistically significant correlations are found (see Table 35), even when medial vowel variants are specified.

(a)

	+ [pattern I]	- [pattern I]
+[MUT/REC]	154	12
-[MUT/REC]	64	8
Chi-square	p	Phi
0.98	>0.3	0.06
NOT SIGNIFICANT		

(b)

	+ [pattern Ia]	- [pattern Ia]
+[MUT/REC]	131	35
-[MUT/REC]	58	14
Chi-square	p	Phi
0.08	>0.7	-0.02
NOT SIGNIFICANT		

(c)

	+ [pattern Ii]	- [pattern Ii]
+[MUT/REC]	35	131
-[MUT/REC]	10	62
Chi-square	p	Phi
1.70	>0.1	0.08
NOT SIGNIFICANT		

(d)

	+ [pattern Iu]	- [pattern Iu]
+[MUT/REC]	22	144
-[MUT/REC]	8	64
Chi-square	p	Phi
0.21	>0.5	0.03
NOT SIGNIFICANT		

Table 35: Correlations for [MUT/REC] pairs in patterns III and VI with pattern I

We have already noted from Table 30 that presence of a pattern III verb for a given root is highly correlated at a significant probability level with reciprocal meaning in pattern VI. It is possible, therefore, that for roots with pattern III present, pattern VI meaning is independent of the presence and vowel variant of pattern I, whereas correlations may still be found for pattern VI verbs where pattern III is absent.

(a)

	+ [pattern I]	- [pattern I]
+ [REC]	168	13
- [REC]	50	7
Chi-square 1.46	p >0.2	Phi 0.08
NOT SIGNIFICANT		

(b)

	+ [pattern Ia]	- [pattern Ia]
+ [REC]	144	37
- [REC]	45	12
Chi-square 0.01	p >0.9	Phi 0.01
NOT SIGNIFICANT		

(c)

	+ [pattern Ii]	- [pattern Ii]
+ [REC]	36	145
- [REC]	9	48
Chi-square 0.48	p >0.4	Phi 0.04
NOT SIGNIFICANT		

(d)

	+ [pattern Iu]	- [pattern Iu]
+ [REC]	23	158
- [REC]	7	50
Chi-square 0.01	p >0.9	Phi 0.01
NOT SIGNIFICANT		

Table 36: Correlations for pattern VI [REC] with pattern I when pattern III present

(a)

	+ [pattern I]	- [pattern I]
+ [REC]	66	2
- [REC]	75	8
Chi-square 2.71	p >0.05	Phi 0.13
NOT SIGNIFICANT		

(b)

	+ [pattern Ia]	- [pattern Ia]
+ [REC]	53	15
- [REC]	45	38
Chi-square 9.24	p <0.005	Phi 0.25
VERY SIGNIFICANT		

(c)

	+ [pattern Ii]	- [pattern Ii]
+ [REC]	17	51
- [REC]	31	52
Chi-square 2.63	p >0.1	Phi -0.13
NOT SIGNIFICANT		

(d)

	+ [pattern Iu]	- [pattern Iu]
+ [REC]	1	67
- [REC]	23	60
Chi-square 19.3	p <0.0001	Phi -0.36
VERY SIGNIFICANT		

Table 37: Correlations for pattern VI [REC] with pattern I when pattern III absent

The data presented in Tables 36 and 37 confirm that there is good evidence to suggest that the medial vowelising of the pattern I verb (specifically patterns Ia and Iu) is strongly correlated with pattern VI reciprocal meaning only if pattern III is absent. It must be noted that although the data in Table 37d are highly indicative of a significant correlation, care should be taken in interpreting the absolute values here and in Table 37a, as accuracy of the chi-square test can be compromised when individual cell values are small. For this methodological reason, examination of the distribution of the relatively rare pattern VI simulative verbs has been restricted to correlations with pattern I medial vowelising in the absence of pattern III (see Table 38).

(a)

	+ [pattern Ia]	- [pattern Ia]
+ [SIM]	11	18
- [SIM]	87	35
Chi-square	p	Phi
11.5	<0.001	-0.28
VERY SIGNIFICANT		

(b)

	+ [pattern Ii]	- [pattern Ii]
+ [SIM]	17	12
- [SIM]	31	91
Chi-square	p	Phi
11.9	<0.001	0.28
VERY SIGNIFICANT		

(c)

	+ [pattern Iu]	- [pattern Iu]
+ [SIM]	10	19
- [SIM]	14	108
Chi-square	p	Phi
9.28	<0.005	0.25
VERY SIGNIFICANT		

Table 38: Correlations for pattern VI [SIM] with pattern I when pattern III absent.

It is not surprising that pattern Ia shows significant negative correlation with simulative meaning, while pattern Iu is positively correlated, since [REC] and [SIM] meanings are

not independent but rather in complementary distribution and it has already been demonstrated that the reverse correlations are found for pattern VI reciprocals (Table 37). What is perhaps more surprising is that pattern Ii, which usually correlates only weakly with other properties, shows significant co-occurrence with pattern VI simulative meaning.

Finally, for the sake of completeness, Tables 39 and 40 record data for pattern III mutual meaning correlated with pattern I according to the presence or otherwise of pattern VI. Only pattern Ii shows a significant correlation in the case that pattern VI is also present and indeed there is a corresponding weak correlation with the presence of any pattern I verb. Thus these data indicate that the presence and voweling of the pattern I verb have little or no effect on whether pattern III will assume a mutual meaning.

(a)			(b)		
	+ [pattern I]	- [pattern I]		+ [pattern Ia]	- [pattern Ia]
+ [MUT]	183	13	+ [MUT]	157	39
- [MUT]	35	7	- [MUT]	32	10
Chi-square	p	Phi	Chi-square	p	Phi
4.52	<0.05	0.14	0.32	>0.5	0.04
SIGNIFICANT			NOT SIGNIFICANT		

(c)			(d)		
	+ [pattern Ii]	- [pattern Ii]		+ [pattern Iu]	- [pattern Iu]
+ [MUT]	43	153	+ [MUT]	27	169
- [MUT]	2	40	- [MUT]	3	39
Chi-square	p	Phi	Chi-square	p	Phi
6.66	<0.01	0.17	1.38	>0.2	0.08
SIGNIFICANT			NOT SIGNIFICANT		

Table 39: Correlations for pattern III [MUT] with pattern I when pattern VI

present

(a)

	+ [pattern I]	- [pattern I]
+ [MUT]	142	21
- [MUT]	56	8
Chi-square 0.01	p >0.05	Phi -0.01
NOT SIGNIFICANT		

(b)

	+ [pattern Ia]	- [pattern Ia]
+ [MUT]	120	43
- [MUT]	53	11
Chi-square 2.14	p >0.1	Phi -0.10
NOT SIGNIFICANT		

(c)

	+ [pattern Ii]	- [pattern Ii]
+ [MUT]	38	124
- [MUT]	12	53
Chi-square 0.67	p <0.025	Phi 0.05
NOT SIGNIFICANT		

(d)

	+ [pattern Iu]	- [pattern Iu]
+ [MUT]	14	148
- [MUT]	7	58
Chi-square 0.25	p >0.6	Phi -0.03
NOT SIGNIFICANT		

Table 40: Correlations for pattern III [MUT] with pattern I when pattern VI absent

In interpreting the data presented above for correlations with pattern I, it must be recognised that my method of data collection has limitations. In addition to those reservations noted in section 5.2.1, my raw data has not been corrected for roots where pattern I meanings do not correspond obviously with derived patterns III and VI. A case might be made for considering these as deserving the status of separate homomorphous roots, though I have consistently followed the assignments made by Wehr (1994).²⁶ The raw data are also subject to the phenomenon of roots forming more than one pattern I variant, which are sometimes synonymous but frequently unrelated in meaning. For example, in (61) the root forms both pattern Ia and Iu variants with different basic meanings, though it is clearly the Ia verb which is related in meaning to the pattern VI [REC] derivative, as the correlations recorded in Table 37 predict. However, my data records this as the only example of pattern VI [REC] corresponding with pattern Iu in

²⁶ See section 2.2.1.2.2)

the absence of pattern III (see Table 37d), thus effectively reporting an anomaly in error.

- (61a) رَشَقَ بِـ [Ia]
rashhaqa (+ d.o.) *bi* (+ i.o.)
 'to pelt / hurt (s.o.) with (s.th)'
- (61b) رَشِقَ [Iu]
rashhuqa
 'to be shapely, elegant'
- (61c) تَرَشَقَ [VI] [REC]
tarāshhaqa
 'to pelt / hurt one another'

While re-examination of the data to minimise these inconsistencies would be possible, this is both time-consuming and highly dependent on subjective judgements. It is my contention that the limitations of the data will cause a tendency towards understatement of the magnitude and significance of the correlations. Thus the fact that significant correlations have nevertheless been identified suggests that they are of sufficient interest to warrant further investigation.

5.3 Pattern III conativity

It was noted in the previous chapter that some grammarians²⁷ report conative usage for pattern III verbs. For example, Holes (2004:102) considers that '[t]he basic meaning of

²⁷ Including Buckley (2004:398), not included in Table 25.1.

Pattern III is conative, that is, it denotes the making of an effort to achieve the Pattern I root meaning'. Certainly, this is a possible interpretation for the example he gives, the verb *قاتل* (*qātala*) previously seen in example (38a) above, where the pattern I verb means 'to kill' and thus pattern III which is usually translated as 'to fight (with s.o.)' may be interpreted as 'to try to kill (s.o.)'. However, the mutuality of action expressed by this verb is undeniable and thus we must allow that it is capable of both mutual and conative interpretations. Whereas there are numerous pattern III verbs which express mutuality but no conativity, such as example (60) above and others cited by Holes (2004:102), I have identified only one verb in this pattern as possibly conative but not mutual:

(62a) *واری* [III] [TRA] / [CON+]

wārā (+ d.o.)

'to hide / conceal / try to keep secret (s.th.)'

(62b) *ورّى* [II] [TRA]

warrā (+ d.o.)

'to hide / conceal / keep secret (s.th.)'

In the case of example (62a), the corresponding pattern I verb does not share the basic meaning and comparison is therefore only possible with the verb in pattern II (62b). Although I have followed Wehr (1994) and classified (62a) as either a simple transitive [TRA] or conative with respect to a direct object [CON+], since the action of hiding or concealing something is arguably an attempt to keep it secret anyway, it is unclear whether the conative distinction between pattern III and pattern II is real or not. Native

speaker evidence might help to clarify this, but since this verb is the only candidate I have identified for a non-mutual conative category my conclusion is that it is unnecessary to treat conative meanings for pattern III separately, merely to note that pattern III mutual meaning also often implies conativity.

Thus, on the basis of data which show that mutuality without conativity is encountered frequently but not conativity without mutuality, I reach the opposite conclusion from Holes and contend that the dominant meaning of pattern III is mutual.

5.4 Summary

A summary of the conclusions reached in this chapter will be helpful before proceeding to investigate patterns III and VI further.

- i. It has been established that implied mutuality is the dominant meaning for pattern III and that reciprocity is the dominant meaning for pattern VI.
- ii. However, approximately one-quarter of pattern III and one-third of pattern VI verbs do not conform to these dominant meanings.
- iii. The mutual-reciprocal relationship between the patterns has been validated statistically as a real phenomenon, but it is still inadequate to explain the meanings of over 30% of the pattern III - pattern VI verb pairs.
- iv. The medial vowelism of pattern I verbs from the corresponding root is correlated with pattern VI meaning when no pattern III verb is present. Since any systematicity in pattern I vowelism is attributable to differences in transitivity and the nature of the agent, the data suggest that it may be fruitful to investigate

these properties with respect to the derived forms. This will be the subject of the following chapter.

Chapter 6

Transitivity and valency

In Chapter 5, it was established that pattern I medial s-stem vowelism, a property linked with transitivity, shows some correlation with pattern VI semantics for verbs from the same root. It was also noted that variations in degrees of transitivity exist for both patterns III and VI, even when they carry their respective mutual and reciprocal dominant meanings. This chapter will explore issues of transitivity and the related verbal property of valency with particular reference to patterns III and VI.

6.1 Defining transitivity in Arabic

6.1.1 Transitive verbs

A transitive verb in Arabic, as in English, is most often defined as one which takes a direct object (Saad 1982:1; Badawi et al. 2004:778; Ryding 2005:64). Arabic is typologically a nominative-accusative alignment language, in which both the single argument (S) of an intransitive verb and the agent (A) of a transitive verb are in the nominative case, while the patient (P) of a transitive verb is distinguished by the accusative case.²⁸ Although the obligatory case inflections of Classical Arabic are not always pronounced in MSA and only a few of these inflections are evident in unvowelled text, example (63) shows a nominal direct object with overt accusative marking, while in (64) the verb has a suffixed direct object pronoun.

²⁸ These labels for verbal arguments follow Comrie 1989:110-111.

(63) ضرب الملك فلاحاً

Darab-a l-malik fallah-an

hit;PST-3MSG DEF-king peasant-ACC.INDF

'The king hit a peasant'

(64) ضربه الملك

Darab-a-hu l-malik

hit;PST-3MSG-OBJ.3MSG DEF-king

'The king hit him'

6.1.2 Intransitive verbs

Although the tendency for medial vowelling 'u' and to some extent 'i' to be identified somewhat with intransitivity has already been noted (section 6.2.2.4), the formal test of intransitivity in Arabic, as in English, is the lack of a direct object (Saad 1982:1; Badawi et al. 2004:774; Ryding 2005:64), as in (65):

(65) ضحك الملك

DaHik-a l-malik

laugh;PST-3MSG DEF-king

'The king laughed'

However, example (66) shows that caution must be exercised in the special case of the verbal noun used emphatically (المفعول المطلق – *al-maf'ūlu l-muTlaq*), also known as a cognate accusative, internal or absolute object, or objective complement (Wright

1967:I.53-57; Cachia 1973:14; Ryding 2005:174; Badawi et al. 2004:145-146).

(66) ضحك الملك ضحكاً

DaHik-a

l-malik

DaHik-an

laugh;PST-3MSG

DEF-king

laugh-ACC.INDF

'The king laughed heartily'

A similar, though much more restricted phenomenon is observed with a small number of English verbs such as 'dream' and 'laugh' which are properly designated intransitive but are capable of taking an object-like cognate noun phrase (NP), although

[a] cognate NP is always likely to include some modifiers (**He laughed a laugh* sounds infelicitous) and is likely to be used because there are much greater possibilities for adjectival etc. modification of a noun than there are for adverbial modification of a verb. (Dixon 2005:305)

Levin examines the meaning of the Arabic term for this phenomenon in some detail, challenging the use of the terminology employed by Wright and others and stating that '[t]he [Arab] grammarians emphasize that the [verbal noun] called [*al-maf'ūlu l-muTlaq*] is not an object' (Levin 1991:924). Thus although the verbal noun in the accusative in example (66) is formally identical to the direct object of a transitive verb, the verb must be treated as intransitive.

6.1.3 Ambitransitivity

MSA also allows ambitransitivity: where consistent with the semantics, verbs which are otherwise transitive may also be used intransitively, i.e. the direct object is optional. Examples (67a-b) show transitive and intransitive usages respectively for the same verb. Note in these examples that, as in English, the presence of an optional prepositional phrase ('about the war') does not affect the assessment of the verb as behaving transitively or intransitively.

(67a) كتب الملك كتاباً عن الحرب

katab-a l-malik kitāb-an ʿan al-Harb

write;PST-3MSG DEF-king book-ACC.INDF about DEF-war

'The king wrote a book about the war'

(67b) كتب الملك عن الحرب

katab-a l-malik ʿan al-Harb

write;PST-3MSG DEF-king about DEF-war

'The king wrote about the war'

6.1.4 Transitivity through a preposition

The Arabic term for transitive verbs, الأفعال المتعدية بأنفسها (*al-'af ʿālu l-muta ʿaddiya bi-'anfusihā*), may literally be rendered 'Verbs that pass on ... through themselves' (Cachia 1973: ٦٣). However, grammarians also recognise verbs which are semantically transitive but govern their object indirectly, thus الأفعال المتعدية بغيرها (*al-'af ʿālu l-muta ʿaddiya bi-ghayrihā*) or 'Verbs that pass on ... through something other than

themselves (viz. through a preposition)' (Cachia 1973:٦٣). Example (68a) shows this kind of indirectly transitive verb, whilst (68b) is an alternate usage of the same verb with direct transitivity: hence the object in the two examples appears in the genitive and the accusative respectively.

(68a) أعلن باستعداده

'a *lan-a* *bi-sti* ع *dād-i-hi*

announce;PST-3MSG with-readiness-GEN-POSS.3MSG

'He announced his readiness'

(68b) أعلن استعداده

'a *lan-a* *sti* ع *dād-a-hu*

announce;PST-3MSG readiness-ACC-POSS.3MSG

'He announced his readiness'

(after Badawi et al. 2004:381)

There is clearly a semantic requirement in Arabic for the verb in these examples to have an obligatory object / patient argument. Thus the verbal syntax, including the identity of the preposition preceding the indirect object in the genitive in (68a), is lexically specified. Hence this type of lexically specified prepositional phrase as indirect object should not be confused with optional prepositional phrases used adjectivally or adverbially as in (67a-b).²⁹

²⁹ However, Dickins & Watson (2009:531) regard these indirect objects as 'adverbial complements'.

6.1.5 Multi-transitive verbs

Many verbs may be doubly transitive in the sense of taking two direct objects in the accusative, for example:

(69) أعطى الملك خدامه كتابا

'a ʕTā l-malik *khaddām-a-hu* kitāb-an

give;PST.3MSG DEF-king servant-ACC-POSS.3MSG book-ACC.INDF

'The king gave his servant a book'

However, other verbs are directly transitive with respect to one object and indirectly transitive with respect to a second object in the genitive through a preposition:

(70) عاهد الملك شعب المغرب على السلام

ʕāhad-a l-malik *sha ʕb-a* l-maghrib ʕalā s-salām

promise;PST-3MSG DEF-king people-ACC DEF-Morocco on DEF-peace

'The king promised the people of Morocco peace'

Although for many such verbs the second object may be semantically and syntactically optional, the preposition governing it is lexically determined and thus a distinction may still be drawn between this type of prepositional object phrase and prepositional phrases used adverbially.

Triple direct transitivity is considered possible by Badawi et al. (2004:380), though corpus analysis yielded no actual examples. However, El-Kassas (2007:2)

discusses 'verbs of communication and speech' which take three direct objects in the accusative and refers to Wright's documentation of 'the fourth form of the أفعال القلب [verbs of the heart]' in the nineteenth century:

(71) أرى الله الناس أيوب صابراً

'arā llāh-u n-nās 'ayūb Sābir-an

make_think;PST-3MSG God-NOM DEF-people Job patient-ACC.INDF

'God has made people think Job patient' (after Wright 1967:II.51)

Note in this example that the predicative adjective صابراً (*Sābir*) takes the accusative case, indicating its role as one of three direct objects.³⁰ The recent encyclopaedia article on transitivity in Arabic by Dickins & Watson includes examples of triply transitive verbs in both Standard Arabic and Khartoum dialect (2009:530), although the article by Soltan, which follows in the same volume, denies the validity of triple transitivity not only in Arabic but cross-linguistically (2009:539), dismissing examples of 'believe-class' verbs such as ظن (*DHanna*) and its derivatives as not properly multi-transitive. My examination of entries in Wehr (1994) has yielded a small number of verbs which are capable of taking three objects, up to two of which may be direct. For example, the verb in (72) has two direct objects and one indirect object:

³⁰ For further discussion on the ambiguity of the categories of noun and adjective in Arabic see 7.3.1.

(avalent) to three (trivalent). Verbs with zero valency are found in English with an 'empty' subject (Allerton 1982:5) for which no other noun phrase may be substituted as in (73):

(73) It snowed.

The following examples, in which the elements contributing to valency are indicated in bold type, show valencies ranging between one and three:

(74a) **Jonny** slept.

{1} [monovalent]

(74b) **Deborah** hit **the ball**.

{1} {2} [divalent]

(74c) **Will** considers **housework a chore**.

{1} {2} {3} [trivalent]

In each of these examples, deletion of any one of the elements renders the sentence ungrammatical,³² thus Herbst (1999) calls these elements obligatory complements.³³ Example (75) demonstrates that a prepositional phrase may also be an obligatory complement:

32 The verb 'consider' may also be divalent, but with a different meaning. Compare: 'He considered the situation.'

33 For clarity, the terminology throughout is that of Herbst (1999), though other authors prefer different nomenclature.

- (75) **Newlyn lies at the western end of Mount's Bay** (Herbst 1999)
 {1} {2} [divalent]

In contrast, elements which can be freely inserted or deleted, typically adverbials, are considered adjuncts and do not contribute to the valency count. These elements are underlined in (76a-c)

- (76a) **Jonny** slept for hours.
 {1} [monovalent]
- (76b) **Deborah** hit **the ball** with the bat.
 {1} {2} [divalent]
- (76c) Under normal circumstances, **Will** considers **housework a chore**.
 {1} {2} {3} [trivalent]

Whilst it is clear in the above examples which elements are obligatory complements contributing towards valency and which are adjuncts and hence not contributing, an intermediate class of optional complements is possible for some verbs. These are elements which do contribute to valency but may optionally be deleted without violating grammaticality, such as the underlined elements in (77) and (78):

- (77) **Emily** was reading a book.
 {1} {2} [divalent]

(78) **Most creative people** object to the notion that the work they do comes easily.

{1}

{2}

[divalent]

(Herbst 1999)

Because the optional complements in both (77) and (78) are lexically specified as to their form for the verb in question (respectively a direct object noun phrase and a prepositional phrase with 'to'), they must be considered part of the valency structure of the verb. These complements, although deletable, are thus distinctly different from adjuncts, which are typically adverbial and may take a wide range of forms. Furthermore Herbst (1999) draws attention to what Allerton (1982:68-69) calls 'contextual deletion': for example in (78) the underlined complement of the verb 'object' is only contextually optional, i.e. rendering the usage monovalent by deleting the complement is only possible if context makes it clear what is being objected to. Note that optionality of complements provides an explanation for the phenomenon of ambitransitivity discussed in section 6.1.3.

The concept of valency is only outlined above in its simplest form. Classification of verbs according to different types of complements allows the identification of a range of possible structures for each numerical value of valency. The valency structures of English are discussed comprehensively by Allerton (1982). However, for our present purposes we are concerned with the application of the concept of valency to the Arabic verb in order to arrive at a more adequate classification than that provided by transitivity alone, especially in regard to multi-transitive verbs (6.1.5) and those which are transitive through a preposition (6.1.4).

Examples (63) to (70) in section 6.1 have already introduced monovalent, divalent and trivalent Arabic verbs. It will be noted, however, that the verbs in (71) and (72) each have four complements. Tesnière (1959:258) states that 'il semble bien qu'il n'existe dans aucune langue de formes verbales simples comportant plus de trois valences'. Although Allerton (1982:116) writes concerning tetravalent structures for simple verbs that 'it is usually assumed that there are none in English', he proceeds to argue a case for their existence. There is therefore no reason not to recognise the existence of tetravalent verbs in Arabic. As for zero valency, the weather verbs in Arabic, unlike English, are capable of taking an overt subject and while verbs such as *وجب* (*wajaba* – 'to be necessary') are commonly impersonal, they are not exclusively so and will normally have an indirect object and / or subordinate clause complement. There may thus be no properly zero-valent verbs in MSA.

Thus we will proceed to categorise the pattern III and pattern VI verbs and pattern I verbs from the same roots on a valency scale ranging from one to four and hence investigate how valency is distributed within the various patterns and whether morphological derivations are linked with valency change.

6.3 Data collection

Semantic category labels with accompanying information on direct and indirect objects were already assigned as described in section 6.2.1. Each label has been converted to an alphanumeric code consisting of the numeric valency followed by a letter indicating the combination of direct and indirect objects (if present). Table 41 presents the codes for all valency structures so far encountered or reported for MSA, ranked according to subject,

then number of direct objects and finally number of indirect objects.

<i>VALENCY</i>	<i>SUBJECT</i>	<i>D.O.</i>	<i>I.O.</i>	<i>CODE</i>
4	1	3	0	4D
4	1	2	1	4C
4	1	1	2	4B
4	1	0	3	4A
3	1	2	0	3C
3	1	1	1	3B
3	1	0	2	3A
2	1	1	0	2B
2	1	0	1	2A
1	1	0	0	1B
1	0	0	1	1A

Table 41: Valency structure codes for MSA

As with data collection in previous chapters, the assumption has been made that the lexicographic information provided by Wehr (1994) is accurate, complete and consistent. Thus all usages recorded in the dictionary which differ in any or all of the three parameters of subject, direct object and indirect object give rise to a separate code for a given verb. However, inasmuch as the dictionary entries may be assumed to be reliable and since the codes are allocated on purely formal grounds, the data recorded and analysed in this chapter is objective and not as in the previous chapter where allocations to categories were decided subjectively on the basis of semantics.

Examples of alternative valency structures may be seen in the extract from the data tables³⁴ presented in Table 42, where the root combination *بدر* (*b-d-r*) has three different structure codes: two divalent and one trivalent.

³⁴ Data tables are listed in Appendix I.

C ₁	C ₂	C ₃	III	VI
ب.ب	ح	ث	3B	1B/3A
ب.ب	د	ر	3B/2B/2A	1A
ب.ب	د	ل	3C	2B
ب.ب	د	و	2A	1B
ب.ب	ر	ز	2B	1B
ب.ب	ر	ك	2B/2A	1B
ب.ب	ر	ي	2B	1B/2A
ب.ب	ع	د	2A	1B/2A
ب.ب	غ	ض	2B	1B
ب.ب	ه	و	3B/2A	1B/2A
ب.ب	ي	ع	2B	1B
ب.ب	ي	ن	2B	1B/2A

Table 42: Data extract from valency structure codes for patterns III and VI

Valency	1	2	3	4
Pattern III	36	411	109	2
Pattern VI	333	155	15	0

Table 43: Valency distribution in patterns III and VI

Table 43 is a summary of the distribution of numerical valency across all pattern III and pattern VI verb forms. Note that the totals for each pattern in this table are greater than the actual totals for the corresponding verb forms in the dictionary, since a verb which displays two or more valency structures contributes to data in more than one column. However, we may observe that 88% of the 465 pattern III verb forms have at least one

usage with a divalent structure and 86% of the 389 pattern VI verb forms have at least one usage with a monovalent structure. The 'ideal' mutual and reciprocal categories [MUT] and [REC] introduced in section 5.2.1 correspond with these numeric valencies. However, it was also noted in that discussion that mutual and reciprocal meanings occur with varying transitivity and thus these and other semantic labels will be represented in the valency data by different values. Although it may readily be observed that there is a distinct difference in distribution of valencies between patterns III and VI, it is also clear that a given pattern does not reliably specify valency. Although only approximately 8% of pattern III verbs have monovalent usages listed, as many as 24% show valencies greater than two, while nearly 44% of pattern VI verbs have usages with valencies greater than one.

6.4 Data analysis

6.4.1 Valency and the *ta-* prefix

Watson (2002:139-142) argues that the *ta-* prefix in pattern VI is 'detransitivizing' and that patterns V – X are characterised by 'a reduction or minimization of the valence [sic] of the underlying verb'. Although Watson quotes from McCarthy & Prince (1990a:38), strictly these authors only refer to patterns VII – X in this context, having excluded patterns V, VI and QII from their analysis. Nevertheless, Watson's hypothesis may now be tested using the data obtained for pattern VI and for pattern III which is its corresponding 'underlying' verb.

	Total	Reduction	Minimisation	% reduced / minimised
Roots with patterns III and VI	238	134	10	60.5
Roots with pattern VI only	151	–	91	60.3

Table 44: Numerical valency reduction and minimisation in pattern VI

The property of valency reduction is clearly only applicable to pattern VI verbs which also have a pattern III verb from the same root, whereas a minimum valency state of 1 is theoretically possible for all pattern VI verbs. Data for valency reduction in Table 44 only represent unambiguous instances where all pattern VI usages show reduction relative to all pattern III usages. Likewise, minimisation is defined as when all usages are monovalent and is only recorded when unambiguous reduction is not present or is inapplicable. With multiple valencies possible for many verbs, however, these data are somewhat crude. Nevertheless, if valency reduction and minimisation are viewed as a whole, there is remarkable consistency across pattern VI, whether or not pattern III is present for the root.

6.4.1.1 A hierarchical approach to valency structures

At the conclusion of section 6.1, we noted that transitivity in Arabic must be treated as more than a binary opposition, i.e. transitive versus intransitive, leading to an examination of valency as a more adequate model. Although different valency structures have been introduced, there has thus far been no attempt to define degrees of transitivity within the same numerical valency. We may hypothesise, however, that a verb which is

transitive through a direct object is treated in Arabic as more transitive than one which is transitive through a preposition and indirect object. Thus Table 41 may be viewed as one possible hierarchical ordering of valency structures from high to low transitivity and hence detransitivisation involves moving from any given valency structure code to any code lower in the table: we will call this 'hierarchical valency reduction'. For consistency, valency minimisation in the data will be recorded as before: thus codes [1A] and [1B] both represent minimisation, since [1A] is restricted to impersonal subjects and is not available semantically to most verbs.³⁵ Thus Table 45 is analogous to the Table 44 data for pattern III – pattern VI pairs, but allowing for hierarchical reduction.

	Total	Reduction	Minimisation	% reduced / minimised
Roots with patterns III and VI	238	188	10	83.2

Table 45: Hierarchical valency reduction and minimisation in pattern VI

It may be seen from the above data that the hypothesis which redefines transitivity and hence detransitivisation on a hierarchical basis leads to a much higher percentage of pattern III – pattern VI verb pairs conforming to the proposal that the *ta-* prefix is a detransitivising morpheme. The hierarchy defined by Table 41 assumes a ranking based upon numerical valency, number of direct objects and number of indirect objects in that order. Clearly this is not the only order in which these parameters and hence the valency structure codes may be ranked, but it is likely to be the most successful since there are

³⁵ The pattern VI verb from the root ب-د-ر (*b-d-r*) is the only instance of code [1A] in the data.

numerous pattern III – pattern VI pairs in which a complement encoded as direct object in pattern III is encoded as indirect object in pattern VI, often with no change in meaning. For example, in (79a) the pattern III verb puts *رئيس الوزراء* ('the prime minister') in the accusative (*ra'īsa l-wuzarā'*), hence is designated [2B] for valency, whilst in (79b) the corresponding pattern VI verb is coded as [2A] as it takes the preposition *مع* (*ma ʿa*) followed by the same noun phrase in the genitive (*ra'īsi l-wuzarā'*).

(79a) *حدث الملك رئيس الوزراء* [III] [MUT] [2B]

Hādath-a l-malik ra'īs-a l-wuzarā'

talk;PST-3MSG DEF-king president-ACC DEF-minister;PL

'The king talked with the prime minister'

(79b) *تحدث الملك مع رئيس الوزراء* [VI] [MUT-] [2A]

Hādath-a l-malik ma ʿa ra'īs-i l-wuzarā'

talk;PST-3MSG DEF-king with president-GEN DEF-minister;PL

'The king talked with the prime minister'

6.4.1.2 Hierarchical exceptions

We are now left with 40 verb pairs which appear to constitute a set of lexical exceptions to the hierarchical valency reduction rule. There are various reasons why these pattern III – pattern VI pairs do not show hierarchical reduction or valency minimisation in the crude data in Table 45 and they are categorised in Table 46 according to whether I have

been able to postulate an explanation for their exceptionality.

	Potentially explicable			Non-explicable	
	Unrelated meanings	Compliant in at least one usage	Hierarchical challenges	Synonyms	Other
Number of verb pairs	5	23	4	6	2
	32			8	

Table 46: Exceptional pattern III – pattern VI pairs by explanation

6.4.1.2.1 Unrelated meanings

Five pairs, including (80a-b), have meanings which appear to be unrelated in any of their usages. In this example the verbs have a reversed hierarchical relationship, with pattern VI directly transitive and pattern III transitive through a preposition. However since they appear to be unrelated in meaning they might more properly be classified under separate dictionary entries, in which case they would not be relevant to an examination of pattern III – pattern VI pairs.

(80a) حامى عن [III] [2A]

Hāmā عan (+ i.o.)

'to defend / protect (s.o. / s.th.)'

(80b) تحامى [VI] [2B]

taHāmā (+ d.o.)

'to shun / avoid (s.o. / s.th.)'

Particularly perplexing is the verb pair in (81a-b), which I have classified as unrelated, although they have usages which are effectively antonyms in patterns III and VI.

(81a) ناول لـ [III] [3B]

nāwala (+ d.o) *li* (+ i.o.)

'to give (s.th) to (s.o.)'

(81b) تناول من [VI] [3B]

tanāwala (+ d.o.) *min* (+ i.o.)

'to receive (s.th) from (s.o.)'

6.4.1.2.2 Compliance with the hierarchy in at least one usage

A further 23 verb pairs were found to comply with hierarchical valency reduction in at least one corresponding usage. Examples (82a-b) form a mutual-reciprocal pair, where the verb in each pattern additionally takes an indirect object which is functionally identical. These verbs thus show simple numerical valency reduction, though the dictionary entry is complicated by another indirectly transitive usage of the pattern III verb with a related meaning and a different preposition (82c).

(82a) خاطر على [III] [MUT±] [3B]

khāTara (+ d.o) *عalā* (+ i.o.)

'to bet (s.o.) (s.th. [a stake])'

(82b) تخاطر على [VI] [REC±] [2A]

takhāTara ع *alā* (+ i.o.)

'to make a bet [together] against (s.th. [a stake])'

(82c) خطر بـ [III] [TRA-] [2A]

khāTara bi (+ i.o.)

'to risk / stake (s.th.)'

Examples such as this, in which the phenomenon of hierarchical reduction is certainly being observed for all pattern VI usages and their pattern III equivalents, may arguably be reclassified as complying with detransitivisation. However, for several roots a problematic usage is encountered due to the pattern III verb optionally taking either a direct or an indirect object without a change of meaning, for example in (83):

(83a) شاجر [III] [MUT] [2B]

shājara (+ d.o.)

'to quarrel with (s.o.)'

(83b) تشاجر [VI] [REC] [1B]

tashājara

'to quarrel with one another'

(83c) شاجر مع [III] [MUT-] [2A]

shājara ma ع *a* (+ i.o.)

'to quarrel with (s.o.)'

(83d) تشاجر مع

[VI] [MUT-][2A]

tashājara ma عا (+ i.o.)

'to quarrel with (s.o.)'

When the paradigm mutual [MUT] usage of pattern III (83a) is compared with either of the pattern VI usages in (83b) and (83d), the hierarchical relationship is preserved: (83b) is a paradigm reciprocal [REC] and (83d) is an indirectly transitive mutual [MUT-] standing in the same relationship to its pattern III equivalent as in (79b). The difficulty arises with the indirectly transitive mutual [MUT-] in (83c), which is rare amongst pattern III verbs. Although Badawi et al. (2004:381) present no concrete diachronic data, they allude to a change in MSA in which 'a verb which originally had no preposition may now be seen with one' and also remark that '[a] noticeable tendency is the occurrence of [*ma* عا] مع “with” ... with verbs of reciprocity, i.e. stems III, VI and VIII'. It is possible that a change which may obscure the detransitivisation effect commonly observed between patterns III and VI and has perhaps been induced or encouraged by contact with European languages, especially English, is underway with some verbs. If this is so, the modern language might be expected to adapt in one of a number of ways in order to preserve a Saussurean system, either eliminating one of the verbs altogether or restricting it to usages which conform to a hierarchical relationship within the pair. For the verbs in (83), corpus data (arabiCorpus) reveals that the pattern III verb is actually extremely uncommon, while pattern VI is used extensively both intransitively as the reciprocal and transitively with the preposition.

6.4.1.2.3 Hierarchical challenges: other potentially explicable exceptions

The remaining four verb pairs which I have designated 'potentially explicable' represent related challenges to the adequacy of the valency structure hierarchy I have proposed in Table 41. The first challenge concerns the hierarchical position of verbs with two or more indirect object complements. Since I have assumed that overall numerical valency is the most highly weighted parameter, a trivalent verb with two indirect objects [3A] is ranked higher than a divalent verb with one direct object [2B]. Thus the usages of the verbs in (84a-b) do not conform to the hierarchy, even though the participant in the mutual action represented by the direct object in (84a) is represented by the indirect object in (84b) in conformity with the hierarchical reduction exemplified in (79). It is the addition of a third complement, i.e. the matter being consulted about, which has raised the valency in (84b) and violated the hierarchy.

- | | |
|---|-------------------|
| (84a) شاور | [III] [MUT] [2B] |
| <i>shāwara</i> (+ d.o.) | |
| 'to consult with (s.o.)' | |
| (84b) تشاور مع في | [VI] [MUT-±] [3A] |
| <i>tashāwara ma ʿa (+ i.o.) fī (+ i.o.)</i> | |
| 'to consult with (s.o.) about (s.th.)' | |

It seems, however, that this situation may simply be an artefact of Wehr's lexicography and the texts on which it is based. The *arabiCorpus* does indeed contain numerous examples of the pattern VI verb with two prepositional complements (84b). Although the

less common pattern III verb, when it is used, most often appears with only the direct object as in (84a), the following example demonstrates that it may appear in the [3B] valency structure with both direct and indirect object complements:

(85) بعث رسالته... دون أن يخبر صاحبه، أو يشاوره في الأمر

ba *ath-a* *risālat-a-hu* ... *dūna* 'an *yukhbir-a*

send;PST-3MSG letter-ACC-POSS.3MSG without that inform;NPST.3MSG-SBJV

SāHib-a-hu, 'aw *yushāwir-a-hu* *fī* *l-'amr*

friend-ACC-POSS.3MSG or consult;NPST.3MSG-SBJV-OBJ.3MSG in DEF-matter

'He sent his letter ... without informing his friend or consulting him about the matter'

(arabiCorpus:309dinehayate13.txt)

In the only other pair where the same hierarchical conflict occurs, the pattern III verb *خابر* (*khābara*) is found only rarely in *arabiCorpus* and never in the sense of 'to negotiate', which is the usage which gives rise to the difficulty. Thus on the available evidence, it seems unnecessary to consider a change to the hierarchy as already presented in order to accommodate these two verb pairs.

A similar difficulty is encountered with the pair in (86a-b), in which an additional complement for the pattern VI verb complicates what would otherwise be a paradigm mutual-reciprocal relationship:

- (86a) درس [III] [MUT] [2B]
dārasa (+ d.o.)
 'to study with (s.o.)'
- (86b) تدارس [VI] [REC+] [2B]
tadārasa (+ d.o.)
 'to study (s.th.) carefully together'

Both verbs are found in the *arabiCorpus* newspaper corpus, though the pattern VI verb predominates. Within the purely formal definitions we have adopted in this chapter, we must accept that they are equal in transitivity and valency and therefore constitute an exception to the hierarchy.

A related challenge is how to incorporate verbs which are transitive through the preposition *بين* (*bayna* – 'between'). In the data, I have treated this preposition in the same manner as any other, such that it contributes one to the intransitive object count for the verb. Although other verbs, for example *داول* (*dāwala* – in the sense 'to alternate between'), may take complements introduced by this preposition, the only such verb involved in a pair which is not compliant in at least one usage and therefore has been classified as challenging the hierarchical order is shown together with its pattern VI counterpart in (87a-c) :

- (87a) باعد بين [III] [CAU-] [2A]
bāعada bayna (+ i.o.)
 'to cause a separation between / separate (s.o. / s.th.)'
- (87b) تباعد [VI] [REC] [1B]
tabāعada
 'to separate / be separated (from one another)'
- (87c) تباعد عن [VI] [MUT-] [2A]
tabāعada عن (+ i.o.)
 'to move away from (s.o. / s.th.)'

The verb in (87b-c) is typical of pattern VI usages: either indicating explicitly reciprocal separation [REC] or mutual separation with respect to an indirect object [MUT-]. However, the causative usage in (87a), which gives rise to the problematic [2A] classification, is unusual for pattern III in that the action of the agent affects only the patient represented by the indirect object and not the agent itself. Where the patient comprises a plural or dual pronoun or noun, the analysis of a [2A] valency structure appears sound:

(88) وما الذي يجمع ويباعد بينهما؟

wa-mā lladhī yajma ع-*u*

wa-yubā ع*id-u*

and-what REL;MSG bring_together;NPST.3MSG-IND and-separate;NPST.3MSG-IND

bayna-humā?

between-OBJ.3DU

'And what is it which brings them [both] together and separates them [both]?'

(arabiCorpus:GEN1997:1364)

However, when the objects or persons to be separated are represented by two different nouns or object pronouns, Arabic allows two syntactic variations: the first is used most often when both are nouns, the second being preferred when one is a pronoun and obligatory when both are pronouns.

(89) ما الذي يباعد بين العرب وأوروبا؟

mā lladhī yubā ع*id-u*

bayna l-عarab wa-'ūrūbā?

what REL;MSG separate;NPST.3MSG-IND between DEF-Arabs and-Europe

'What is it which separates the Arabs from Europe?'

(arabiCorpus:052799OPIN01)

(90) فكل يوم يمر بياعد بين آل جور وبين منصب الرئيس الامريكي

<i>fa-kull</i>	<i>yawm yamurr-u</i>	<i>yubā</i> ع	<i>id-u</i>	<i>bayna</i>
and_so-every day	PASS;NPST.3MSG-IND	separate;NPST.3MSG-IND		between
<i>'āl gūr</i>	<i>wa-bayna</i>	<i>manSib-i</i>	<i>r-ra'īs-i</i>	<i>l-'amrīkī</i>
Al Gore	and-between	office-GEN	DEF-president-GEN	DEF-American

'So every day which passes separates Al Gore from the office of American President.'

(arabiCorpus:102699REPO03)

Whether the preposition *بين* (*bayna*) takes two indirect object arguments with a conjunction introducing the second (89) or is repeated with each instance of it taking a single indirect object argument (90), it is clear that both object arguments are fully necessary to the sense of the verb in any conceivable context in which there is no dual or plural object as in (88) or indeed when the action of the verb takes place between such an object and any other. There is therefore adequate justification for treating both objects as obligatory complements, raising the valency of the verb to three. With two indirect object complements, the valency structure code then becomes [3A] and hierarchical reduction relative to pattern VI usages is established.

6.4.1.2.4 Synonyms

Six verb pairs have been classified as synonymous in their corresponding usages. The pattern III verb in examples (91a-b) has alternative usages: it may be either directly or indirectly transitive with meanings which are distinct yet related. However, there is no hierarchical reduction in pattern VI (91c-d) since in each instance it is both synonymous

with and syntactically identical to the corresponding usage of its pattern III counterpart (91a-b).

(91a) جاوز [III] [2B]

jāwaza (+ d.o.)

'to pass / go beyond (s.th.)'

(91b) جاوز عن [III] [2A]

jāwaza عن (+ i.o.)

'to pass over / disregard (s.th.)'

(91c) تجاوز [VI] [2B]

tajāwaza (+ d.o.)

'to pass / go beyond (s.th.)'

(91d) تجاوز عن [VI] [2A]

tajāwaza عن (+ i.o.)

'to pass over / disregard (s.th.)'

This phenomenon is contrary to the Saussurean understanding of form and meaning, since it appears to render the *ta-* prefix morph meaningless. Thus these verb pairs remain inexplicable in terms of the valency structure hierarchy or any other formal model.

6.4.1.2.5 Other exceptions

The two remaining verb pairs show meanings which are related but not quite synonymous: the problematic usages are shown in (92a-b) and (93a-b).

- (92a) ناکر [III] [2B]
nākara (+ d.o.)
 'to disapprove of / reject (s.o.)'
- (92b) تناکر [VI] [2B]
tanākara (+ d.o.)
 'to be ignorant / feign ignorance of (s.th.) / to snub, pretend not to know (s.o.)'
- (93a) غافل [III] [2B]
ghāfala (+ d.o.)
 'to take advantage of (s.o.'s) negligence'
- (93b) تغافل [VI] [2B]
taghāfala (+ d.o.)
 'to neglect (s.o. / s.th.)'

Both roots have negative connotations ('not know' and 'not heed' respectively) and arguably the derived patterns are all capable of a simulative interpretation, i.e. to affect a behaviour. However, together with the synonymous pairs in the previous section, these remain exceptions to the valency structure hierarchy.

6.4.1.2.6 List of exceptions

Having examined the data and investigated in more depth the 40 pattern III – pattern VI pairs which appear exceptional, the nine verb pairs listed in Table 47 are those which I have been unable to reconcile in any manner with the valency structure hierarchy.

Root		Classification
جنب	<i>j-n-b</i>	synonymous ³⁶
جوز	<i>j-w-z</i>	synonymous
دخل	<i>d-kh-l</i>	synonymous
درس	<i>d-r-s</i>	additional argument
روح	<i>r-w-H</i>	synonymous
سرع	<i>s-r-ع</i>	synonymous
غفل	<i>gh-f-l</i>	near-synonyms
غلو	<i>gh-l-w</i>	synonymous
نكر	<i>n-k-r</i>	near-synonyms

Table 47: Pattern III – pattern VI exceptions to hierarchical valency reduction or minimisation

6.4.1.3 Summary

The *ta-* prefix constitutes the only morphological difference between patterns III and VI. In the previous chapter, we examined the claim that it derives a reciprocal pattern VI verb from a mutual pattern III verb. Data presented in section 5.2.2.3 revealed that this interpretation is only possible for 69.7% of the 238 verb pairs, i.e. there are 72 exceptions.

In this chapter it was suggested that *ta-* is a morphosyntactic device involved in detransitivisation. However, when numerical valency reduction and minimisation were taken together, only 60.5% of the verb pairs were found to comply. When the hierarchy of valency structures in Table 41 was substituted for simple numerical valency, the percentage of compliant pairs rose to 83.2%, leaving 40 exceptions. Closer examination

³⁶ For this and other examples, patterns III and VI are synonymous for usages where the root meaning is shared.

of these exceptions, and applying a degree of liberality of interpretation where at least one corresponding usage complies, reduced the number of pairs which are clear exceptions to only nine.

Thus characterising the *ta-* prefix as a detransitivising morpheme has a success rate of up to 96.2% in pattern III – pattern VI verb pairs, provided that detransitivisation is defined as a reduction in the valency structure hierarchy involving either reduction or minimisation of the number of complements or replacement of one or more direct object complements with the same number of indirect object complements.

6.4.2 Valency and relationships with pattern I

Having established the usefulness of the valency structure hierarchy of Table 41 for characterising detransitivisation in the pattern III – pattern VI relationship, we may use it as a tool to investigate whether quantifiable differences in transitivity also exist between each of these two patterns and pattern I.

It is a basic tenet of the root-and-pattern approach to Arabic morphology discussed in Chapter 3 that verb patterns such as III are not derived from fully vocalised stems such as the pattern I verb stem but formed from tiered morphemes of which the root provides the base meaning (section 3.2.1). However, since it is also normally held that the pattern I verb represents the base meaning, it is appropriate to use pattern I for comparison.

6.4.2.1 Pattern I and pattern III valency

The investigation of the pattern III – pattern VI valency relationship began in 6.4.1 with

the hypothesis that the prefix which derives VI from III is detransitivising. It will be helpful to approach the pattern I – pattern III relationship in the same way. Thus we begin by asking what difference in valency, if any, we might expect.

We have already noted that for some grammarians pattern III, rare across the breadth of Semitic languages, is a specialised variant of pattern II (see 2.1.2.5.3) in which 'duplication of the medial has taken place but has then failed, the loss of the consonant producing compensatory lengthening in the preceding vowel' (O'Leary 1969:217). MacDonald (1963:102) comments that on this basis 'we shall expect the meaning of [pattern III] to be closely associated with that of [pattern II]'.³⁷ According to the prosodic templatic analysis of McCarthy & Prince (1990) as noted in 3.2.2.4, patterns II and III are indeed prosodically identical, both beginning with a heavy (bimoraic) syllable. The same prosodic template applies to pattern IV, which like II is CvC while III is Cvv. Patterns II and IV are often held to involve causativisation of the base meaning and 'the status of causativisation as a valency-increasing operation is beyond doubt' (Fassi-Fehri 1987:23; also Hallman 2005:6). This is illustrated by the following examples, in which an extra direct object complement is added in the augmented patterns thus increasing the valency:

- (94a) كَتَبَ [I] [TRA] [2B]
kataba (+ d.o)
 'to write (s.th)'

³⁷ Whilst noting some functional similarities between patterns II and III and concurring with the theory that they are phonologically conditioned variants, Zaborski (1997:257-260) establishes that the vowel-lengthening variant can be traced back to Proto-Hamitosemitic.

(94b) كَتَّبَ [II] [CAU+] [3C]

kattaba (+ d.o) (+ d.o.)

'to make (s.o) write (s.th.)'

(94c) أَكْتَبَ [IV] [CAU+] [3C]

aktaba (+ d.o) (+ d.o.)

'to make (s.o) write (s.th.) / dictate to (s.o.) (s.th.)'

If shared prosody between patterns II, III and IV is a valid predictor of meaning and / or pattern III is a variant of pattern II, we would expect that pattern III would also be valency-increasing or transitivising with respect to pattern I.

Valency increase is implied by Wright's (1967:I.33) statement that 'when [pattern I] denotes a quality or state, [pattern III] indicates *that one person makes use of that quality towards another and affects him thereby, or brings him into that state*'. Furthermore, just as *ta-* prefixation may be associated with rendering a direct object complement indirect, as in (79), it is suggested that in like manner pattern III may convert an indirect object complement of the pattern I verb into a direct object (Mullins 2005:17; Wright 1967:I.33), which is also a process of transitivity as defined by the hierarchical valency structure in this chapter. Thus as a starting point we shall assume the hypothesis that pattern III is valency-increasing with respect to pattern I.

	Valency increase patterns I – III	Valency increase pattern Ia – III	Valency increase pattern Ii – III	Valency increase pattern Iu – III
No. with pattern VI absent	55 (27.8%)	45 (26.0%)	30 (60.0%)	19 (90.5%)
No. with pattern VI present	56 (25.7%)	47 (24.6%)	24 (55.8%)	24 (77.4%)
TOTAL	111 (26.7%)	92 (25.3%)	54 (58.1%)	43 (82.7%)

Table 48: Roots showing hierarchical valency increase from pattern I to pattern III

Data recorded in Table 48 represent instances of unambiguous valency increase according to the established valency structure hierarchy. Thus for a root to be included in the data in the first column, all recorded pattern III usages must rank higher than all pattern I usages in the hierarchy. In the subsequent columns, the requirement has been limited to pattern I forms with the specified medial vowel. It may be observed that data for roots having a pattern III verb occurring with and without a corresponding pattern VI verb show no significant difference. It is also clear that these data on the whole do not support the hypothesis that the pattern III derivation is valency-increasing relative to the base form. However, data for valency increase relative to pattern Iu look more promising and a more thorough examination is warranted.

Regarding the valency of pattern Iu, recall that Holes (2004:101) states that it 'is always intransitive and denotes the possession or acquisition of a quality that is permanent'. It is unclear from the context whether Holes intends 'intransitive' to be understood to mean not taking a direct object, thus allowing that verbs which are transitive through a preposition (see 6.1.4) are in this sense intransitive. Of the 52 pattern Iu verbs in my present data set (those occurring alongside pattern III) 16 were found to

have a usage classified as [2A], i.e. they may be monotransitive through a preposition, for example:

(95) ضَرُعُ إِلَى [Iu] [2A]

Daru عا 'ilā (+ i.o.)

'to implore / be submissive before (s.o.)'

However, of these 16, three pattern Iu forms were found in Wehr (1994) which appear to allow a direct object, including two which adopt a valency of three with an additional indirect object [3B].

(96) كان في حاجة إلي أن يأنس في نفسه الحزم والشجاعة

kān-a fī Hāja 'ilay-ya 'an ya'nus-a fī

be;PST-3MSG in need to-OBJ.1SG that sense;NPST.3MSG-SBJV in

nafs-i-hi l-Hazm wa-sh-shajā عا

self-GEN-OBJ.3MSG DEF-determination and-DEF-courage

'He needed me in order to sense determination and courage in himself'

(arabiCorpus:042499WRIT02)

An example of one of these [3B] verbs from the corpus is shown in (96), though it is the nature of modern written Arabic that it is impossible to be sure of the vowelling of most pattern I verbs where alternatives exist. According to Wehr, this transliteration with p-stem vowelling corresponding to s-stem medial 'u' is valid but the alternate reading as

ya'nasa is also possible with p-stem vowelism corresponding to s-stem medial 'i'. Similar ambiguities exist for the other examples, though contemporary data from native speakers might be sought to corroborate Wehr's analysis.

More demonstrably problematic for any hypothesis of pattern Iu – pattern III transitivity is that the number reported as complying in the crude data in Table 48 contains a large number of 'false positives'. Many of these result from what are probably best analysed as homomorphic root combinations which give rise to verbs in patterns Iu and III with apparently unrelated meanings. In (97a-c) the pattern III verb is clearly related semantically to pattern Ia but not to Iu:

(97a) سَمُرٌ [Iu] [1B]

samura

'to be brown / turn brown'

(97b) سَمَرَ [Ia] [1B]

samara

'to chat (in the evening)'

(97c) سَامَرَ [III] [2B]

sāmara (+ d.o.)

'to chat (in the evening) with (s.o.)'

I estimate from an examination of the lexical entries that around 30% of the pattern Iu verbs apparently undergoing transitivity are semantically unrelated to their pattern III counterparts. Thus it is likely that we are not observing a transitivity process

deriving pattern III from the base form, rather simply that Iu tends to intransitivity whilst III is most often transitive, i.e. that the data prove no causal relationship.

Further evidence against pattern III derivation being considered transitivity comes from examples such as (98a-b), in which the pattern I valency structure ranks level with that for the corresponding pattern III usage,³⁸ and (99a-b), in which it ranks higher:

(98a)	مَنَعَ <i>mana</i> عا (+ d.o.) (+ d.o.) 'to deny (s.o.) (s.th.)'	[Ia] [3C]
(98b)	مانَعَ <i>māna</i> عا (+ d.o.) (+ d.o.) 'to deny (s.o.) (s.th.)'	[III] [3C]
(99a)	مَنَحَ <i>manaHa</i> (+ d.o.) (+ d.o.) 'to bestow (s.th) on (s.o.)'	[Ia] [3C]
(99b)	مانَحَ <i>mānaHa</i> (+ d.o.) 'to bestow favours on (s.o.)'	[III] [2B]

Thus there is little evidence in favour of characterising pattern III derivation as a process of transitivity relative to the base meaning and indeed some evidence to the contrary.

³⁸ The lower valency structure [3B] with one direct and one indirect object is given as an alternative for (98a) with the same meaning but not for (98b).

It is difficult to devise a chi-square test for statistical significance regarding valency increase since the nature of the test requires that the variables are not dependent. However it is possible to test whether pattern I transitivity is relevant to transitivity in pattern III. Thus in Table 49 I have tested for any correlation between pattern I intransitives and pattern III transitives³⁹ for corresponding roots, any alternates leading to ambiguity being treated as negatives. The chi-square value is not quite high enough to establish significance at the $p = 0.05$ level, but note that any correlation which may exist is negative, suggesting that if anything pattern III transitivity is weakly associated with corresponding pattern I transitivity. This also explains why no significant correlations were found between pattern I medial vowelism and either pattern III mutuality or the pattern III – pattern VI mutual – reciprocal relationship in section 5.2.2.4, since pattern I transitivity is largely irrelevant to pattern III transitivity, which is an indispensable prerequisite for mutual meaning and for forming a reciprocal in pattern VI.

	pattern III +[trans]	pattern III -[trans]	TOTAL
pattern I +[intrans]	84	34	118
pattern I -[intrans]	135	63	198
TOTAL	219	97	316
	Chi-square (χ^2) = 2.78	Probability (p) >0.05 (not significant)	Phi coefficient (Φ) = -0.08

Table 49: Correlation between pattern I intransitivity and pattern III transitivity

Although I am cautious about drawing firm conclusions on the basis of the data I

³⁹ The criterion used is the presence or absence of one or more direct objects, thus valency structures [1B], [2A], [3A] and [4A] have been treated as intransitive and all others as transitive, to allow that transitivity may involve replacement of an indirect object with a direct object.

have assembled, which as previously discussed are subject to a number of limitations, it is evident that transitivity as an explanation for pattern III meaning is not worth pursuing further at this point, given the results of the preliminary investigation detailed here and given that the exceptions are in the majority.

6.4.2.2 Pattern I and pattern VI valency

In the previous chapter (section 5.2.2.4), correlations were established between pattern I medial vowel lengthening, often associated with transitivity, and pattern VI semantics when pattern III is absent. We may use the valency structure data obtained in this chapter to investigate this further.

There is little to be gained from direct comparison of valency between patterns I and VI, since we have already established that intransitive usages predominate in each of these patterns. However, what may be of interest is whether it is intransitivity or transitivity in all pattern I variants, rather than specifically the medial vowel lengthening, which has a bearing on the semantic and syntactic outcome for pattern VI. In all the tables below, the criteria for transitivity and intransitivity are as in footnote 39 on page 191, with ambiguous instances again treated as negatives.

The data in Tables 50 - 52 give rise to some observations. Intransitivity in pattern VI correlates very significantly with intransitivity in pattern I and is independent of whether the root also gives rise to pattern III. This phenomenon is probably attributable to the semantics of the base meaning. However, pattern I transitivity is not significantly correlated with transitivity in pattern VI. Simply put, intransitive base forms frequently result in pattern VI intransitives, but there is no preference for derivation of pattern VI

(a)			(b)		
	VI +[intrans]	VI -[intrans]		VI +[trans]	VI -[trans]
I +[intrans]	123	4	I +[trans]	7	89
I -[intrans]	195	37	I -[trans]	8	255
Chi-square 13.3	p <0.0005	Phi 0.19	Chi-square 3.17	p >0.05	Phi 0.09
VERY SIGNIFICANT			NOT SIGNIFICANT		

Table 50: Correlations of intransitivity and transitivity in patterns I and VI

(a) Pattern III present			(b) Pattern III absent		
	VI +[intrans]	VI -[intrans]		VI +[intrans]	VI -[intrans]
I +[intrans]	62	2	I +[intrans]	61	2
I -[intrans]	130	24	I -[intrans]	65	13
Chi-square 6.68	p <0.01	Phi 0.18	Chi-square 6.67	p >0.05	Phi 0.22
SIGNIFICANT			SIGNIFICANT		

Table 51: Intransitivity in patterns I and VI according to presence or absence of pattern III

(a)			(b)		
	VI +[SIM]	VI -[SIM]		VI +[SIM]	VI -[SIM]
I +[intrans]	20	43	I +[trans]	3	29
I -[intrans]	8	70	I -[trans]	25	84
Chi-square 10.1	p <0.005	Phi 0.27	Chi-square 2.86	p >0.05	Phi -0.14
VERY SIGNIFICANT			NOT SIGNIFICANT		

(c)			(d)		
	VI +[REC]	VI -[REC]		VI +[REC]	VI -[REC]
I +[intrans]	16	47	I +[trans]	23	9
I -[intrans]	50	28	I -[trans]	43	66
Chi-square 21.0	p <0.0001	Phi -0.39	Chi-square 10.4	p <0.005	Phi 0.27
VERY SIGNIFICANT			VERY SIGNIFICANT		

Table 52: Pattern I intransitives and transitives with pattern VI semantics: pattern III absent

transitives. What is more interesting is that the data confirm that semantic correlations for pattern VI in the absence of pattern III are due to transitivity and intransitivity in pattern I.

The most striking tendency is for pattern VI reciprocals with no corresponding pattern III verb to occur much more readily with pattern I transitives. A partial explanation, which would require further research, is that when pattern I is capable of being interpreted as mutual [MUT], which is necessarily transitive, pattern VI may be derived directly without the need for a pattern III intermediate. Inasmuch as pattern III would thus involve redundant morphology, i.e. form with no meaning, its absence has a certain Saussurean elegance. Examples (100) and (101) suggest this possibility:

(100a) صَفَعَ [Ia] [MUT] [2B]

Safa عا (+ d.o.)

'to slap (s.o.)'

(100b) تصافَع [VI] [REC] [1B]

taSāfa عا

'to slap one another'

(101a) رَفَسَ [Ia] [MUT] [2B]

rafasa (+ d.o.)

'to kick (s.o.)'

(101b) ترافَسَ [VI] [REC] [1B]

tarāfasa (+ d.o.)

'to kick one another'

6.5 Summary

Application of a valency structure hierarchy to the traditional understanding of transitivity has enabled characterisation of the function of the *ta-* prefix in pattern VI as detransitivising with few true exceptions. However, the evidence is that the pattern III template is not transitivising relative to the base form.

Thus far, reference has not been made to the influential paper on transitivity by Hopper & Thompson (1980), though in some respects my approach to transitivity as a hierarchy rather than a binary opposition is inspired by their work. Although I have limited my data collection here to that which is formal and may thus be objectively measured, i.e. the subject and object complements specified in the lexicon, I am conscious that transitivity cross-linguistically is demonstrably more complex than this. In particular, I am drawn to their view that transitivity 'involves a number of components, only one of which is the presence of an object of the verb' (Hopper & Thompson 1980:251). Three of the properties which Hopper & Thompson relate to transitivity appear particularly pertinent to an examination of patterns III and VI: the concepts of affectedness and individuation are relevant to the discussion of verbal plurality in Chapter 7, while aspect will be the subject of Chapters 8 to 10.

Chapter 7

The pattern III template: From form to meaning

In the previous chapter, the *ta-* prefix morpheme was shown to be essentially detransitivising in deriving pattern VI from pattern III. However, thus far we have been largely unsuccessful in establishing a unified description for the meaning of pattern III itself. Since pattern VI is uncontroversially derived from pattern III by simple concatenative morphology, i.e. the addition of a prefix, we note that the remaining morphological form of pattern III is shared by its derived counterpart, at least in the s-stem. Thus there is a formal basis for assuming that the remaining morphemic content of the derived pattern is identical with that of its source stem, pattern III, and we will therefore concentrate in this chapter on the characteristics of that pattern, though conscious that any findings are applicable to its *ta-* derivation also.

Returning to the prosodic template approach of McCarthy & Prince (1990a) introduced in Chapter 3, the component parts of a pattern III verb form may be analysed as in example (102) كاتب (*kātaba* – 'to correspond with'):

(102) vowel melody	$\begin{array}{cc} a & a \\ \wedge & \end{array}$	s-stem (perfect), active
CV skeleton	$\begin{array}{ccc} C & v & v & C & v & C \end{array}$	pattern III
root	$\begin{array}{ccc} & & \\ k & t & b \end{array}$	'write'

Recall also that the prosodic analysis of patterns III and II represented in (103) leads to

identification of the first syllable in both as heavy or bimoraic: the prosodic 'quantity' of each pattern is the same.

(103) CvvCv [III] CvCCv [II]

However, although they are quantitatively identical they are qualitatively different (namely in vowel lengthening as opposed to consonant gemination), despite exhibiting the same vowel melodies in both s- and p-stem forms (see 2.1.2.5.2).

The motivation for attempting to characterise the form-meaning relationship as realised in Arabic verbal pattern III was originally to evaluate the application of Beedham's (2005) method of lexical exceptions to MSA. The research which has been documented in previous chapters has established a formal morphological foundation on which such an investigation might be expected to yield a positive outcome and has also examined pattern III in the context of the verbal system as a whole. However, as we observed in Chapter 1, Beedham (2005:153) describes his method 'in terms of the Hegelian triad of thesis, antithesis, and synthesis' and thus far we have concentrated on thesis and antithesis, i.e. on establishing what the basic meaning associated with the formal realisation of pattern III *is not*. Thus, in search of a synthesis capable of describing pattern III, I am led to apply Beedham's methodology afresh and ask what it is which is most characteristic of pattern III formally.

7.1 Formal characterisation of pattern III

When the verbal patterns were introduced in Chapter 2, both s- and p-stem conjugations

were elaborated. These stems, together with other pattern III verbal derivatives are presented in Tables 53 and 54 according to whether or not they exhibit the $C_1\bar{a}C_2$ sequence. Four alternative verbal noun forms are included in these tables, which I have numbered in accordance with Wright (1967:I.116-117), who notes that type 1 with the $C_1\bar{a}C_2$ sequence is most common and claims that type 3 is original, with 2 and 4 derived from it by phonological change. This exhaustive listing of pattern III verbal and nominal forms thus leads to the following observations:

- i. all pattern III word forms contain at least one Cvv syllable;⁴⁰
- ii. in all but two less common verbal noun forms (which may be phonologically derived) there exists a Cvv syllable with onset at the first root consonant C_1 ;
- iii. in the majority of forms the Cvv syllable gives rise to a $C_1\bar{a}C_2$ sequence;
- iv. the only form which contains neither $C_1\bar{a}C_2$ nor $C_2\bar{a}C_3$ is the s-stem passive verb.

Description	Paradigm form	CV template
s-stem (active) verb	فَاعِل	$C_1\bar{a}C_2aC_3$
p-stem (active) verb	يُفَاعِل	$yuC_1\bar{a}C_2iC_3$
active participle	مُفَاعِل	$muC_1\bar{a}C_2iC_3$
p-stem (passive) verb	يُفَاعَل	$yuC_1\bar{a}C_2aC_3$
passive participle	مُفَاعَل	$muC_1\bar{a}C_2aC_3$
verbal noun (1)	مُفَاعِلَةٌ	$muC_1\bar{a}C_2aC_3a$

Table 53: Pattern III verbal stems and derivatives with $C_1\bar{a}C_2$ sequence

⁴⁰ See section 3.2.2.1 for discussion of the extrametricality of the final consonant.

Description	Paradigm form	CV template
s-stem (passive) verb	فُوعِل	C ₁ ūC ₂ iC ₃
verbal noun (2)	فِعَال	C ₁ iC ₂ āC ₃
verbal noun (3)	فِيعَال	C ₁ īC ₂ āC ₃
verbal noun (4)	فِعَّال	C ₁ iC ₂ C ₂ āC ₃

Table 54: Pattern III verbal stems and derivatives without C₁āC₂ sequence

It may therefore be argued that the most characteristic feature of pattern III morphology is vowel lengthening⁴¹ and we will thus direct our attention to examining where vowel lengthening is employed elsewhere in the language system of MSA and with what meaning. In the following section, the link between vowel lengthening and verbal plurality will be investigated, whilst section 7.3 will explore other instances of vowel lengthening, introducing the possibility that it may be associated with aspectual properties.

7.2 Vowel lengthening and plurality

The morphology of MSA employs two distinct means of forming nominal (and adjectival) plurals. Some nouns take regular masculine or feminine inflectional suffixes according to conventional concatenative morphology, as in (104) and (105):

(104) مسلم	مسلمون
<i>muslim</i>	<i>muslim-ūn</i>
Muslim	Muslim-MPL.NOM

⁴¹ This property is the basis of the *L* classification of pattern III in Table 7 (section 2.1.2.5.3).

(105)	سياسة	سياسات
	<i>siyāsa</i>	<i>siyās-āt</i>
	policy	policy-FPL

However a more common strategy is the formation of broken plurals, so called because morphemic material is inserted between the root consonants according to a number of different patterns, many of which involve vowel lengthening or insertion of long vowels. Some productive broken plural patterns are illustrated in (106) to (108):

(106)	مكتب	مكاتب	
	<i>maktab</i>	<i>makātib</i>	
	office	office;PL	
(107)	درس	دروس	
	<i>dars</i>	<i>durūs</i>	
	lesson	lesson;PL	
(108)	كلب	كلاب	
	<i>kalb</i>	<i>kilāb</i>	
	dog	dog;PL	(after Benmamoun 2003a:57)

McCarthy & Prince (1990b) provide an account of broken plural formation within the scheme of prosodic morphology and detailed discussion of the mechanisms involved in forming these plurals will not be undertaken here. What is pertinent is the preponderance

of long vowels in the broken plural patterns, as observed by Benmamoun (2003a:56), who maintains 'that vowel length encodes plurality ... within the nominal system where the bulk of the so-called broken plurals differ from the corresponding singular form by having a long vowel'. Benmamoun (1999) argues for the central role of the p-stem in word formation⁴² and, taking this as the basis for derivation of pattern III, he concludes that a unified analysis is possible in which 'the phenomenon of broken plurals is present in both the nominal and verbal systems' (Benmamoun 2003a:61). Before examining Benmamoun's analysis in more detail it will be helpful to investigate the notion of plurality as it applies to verbal systems.

7.2.1 An introduction to verbal plurality

We are accustomed to number being a category applicable to nominal expressions: plurality is thus a means of indicating reference to multiple persons or objects. It is common cross-linguistically to encounter verbal inflections which represent the corresponding nominal number on the verb according to its grammatical subject or less commonly its object. This kind of plural inflection is not what we are concerned with here, but rather a semantic plurality which is integral to the lexical entry and may be encoded in derivational morphology.

Noting that verbal plurality is particularly common in Amerindian languages, Greenberg (1991) begins his seminal examination of the phenomenon in Semitic by referring to the work of Swadesh on Chitimacha (Louisiana), in which he identifies verbal plurality as potentially being manifested as 'temporal repetition', 'spatial dispersion', 'action by many' or 'action on many' (Swadesh 1946 in Greenberg 1991:577).

⁴² See also section 3.1.1.

Greenberg proposes that Arabic pattern II and its Semitic cognates display many characteristics associated with verbal plurality in other languages and the argument with respect to Arabic specifically is further developed by Fassi Fehri (2003).⁴³

In cross-linguistic studies, verbal plurality is typologically marked like nominal plurality and 'often shown by partial or complete reduplication or an affix, both contrasted with the zero of the singular' (Greenberg 1991:577). Consistent with this observation, gemination of the medial root consonant in Arabic pattern II constitutes a partial reduplication with respect to the base pattern I and frequency data presented in Chapter 2 are also consistent with pattern II being marked relative to pattern I. The following examples illustrate plurality of meaning in pattern II, recalling the semantic categories for that pattern according to Wright (1967:I.31) referred to in section 4.2.2:

(109a) قطع [I]

qaTa عا (+ d.o.)

'to cut (s.th.)'

(109b) قطع [II] [temporal repetition]

qaTTa عا (+ d.o.)

'to cut into pieces (s.th.)'

(110a) قتل [I]

qatala (+ d.o.)

'to kill (s.o.)'

43 See also section 4.3.2.

(110b) قَتَّل [II] [action on many]

qattala (+ plural d.o.)

'to massacre (many persons)'

It is self-evident that the verbs in both (109b) and (110b) involve repeated actions: *cutting* and *killing* respectively. Wehr's entry for the latter specifies a plural object, emphasising that the action must necessarily be performed upon multiple persons, i.e. its plurality is lexically specified. The following examples from Fassi Fehri illustrate that some verbs may be used either for repeated action on multiple objects (interpreted distributively) or on the same object (interpreted intensively):

(111a) جَرَّحَ الجنود [II] [distributive: action on many]

jarraH-a

l-junūd

wound_intensively;PST-3MSG

DEF-SOLDIER;PL

'He wounded many [of the] soldiers'

(111b) جَرَّحَ الرجل [II] [intensive: temporal repetition]

jarraH-a

r-rajul

wound_intensively;PST-3MSG

DEF-man

'He inflicted many wounds on the man'

(after Fassi Fehri 2003:155)

Furthermore, it is suggested that pattern II when intransitive is also capable of interpretation as 'action by many' and that the pattern therefore demonstrates 'natural

ergativity', an alignment analogous to ergative-absolutive case-marking languages in which the grammatical subject of an intransitive and the patient of a transitive share the property of plurality (Greenberg 1991:577-578; Fassi Fehri 2003:155). However evidence for 'action by many' in MSA is doubtful: Fassi Fehri (2003:179) considers it insufficiently documented, though he refers to Greenberg's archaic example from Wright (112b), which is not attested by Wehr (1994) with this meaning.

(112a) بركّ الجمل [I]

barak-a *l-jamal*
 kneel;PST-3MSG DEF-camel
 'The camel knelt down'

(112b) بركّ النعم [II]

barrak-a *n-na ʿam*
 kneel;PST-3MSG DEF-camel_drove

'The [whole drove of] camels knelt down' (after Wright 1967:I.31)⁴⁴

A wide-ranging definition of verbal plurality is favoured by Cusic, who suggests that:

[it] should be broadly construed to include the multiplicity of actions, events, occurrences, occasions and so on; but in addition whatever indicates extension or increase, whether in time or space, of actions or states of affairs.

(Cusic 1981:64)

⁴⁴ Wright also cites موكّت with an intransitive plural meaning which is not attested by Wehr.

Dixon (2000:34) recognises both reduplication and 'consonant repetition' as morphological realisations of causativity, citing Gulf Arabic as an example of the latter process according to Holes (1990:185). Fassi Fehri (2003:158) poses this question: 'If reduplication is a mark of verbal plurality, how can it be the source of both the "intensive" ... and the "causative"...?' However, the argument may be advanced that rendering a verb causative represents an increase in the complexity of the situation, specifically adding a participant - the causer - to an action or state of which the 'causee' is subject, hence increasing the valency of the verb by one (Dixon 2000:30). Therefore causativity is consistent with a broad definition of verbal plurality. Fassi Fehri (2003:158) thus concludes that pattern II 'is a plural form ... [which] can be read ambiguously', arguing for a collective / distributive distinction between intensitivity and causativity. However, recall that pattern IV is often considered the canonical causative form and that it shares a CvC bimoraic first syllable with pattern II according to prosodic morphology. Specifically, Fassi Fehri (2003:159) draws attention to pattern IV glottal prefixation, which is exemplified in (113) and compares it with broken plurals which also exhibit glottal prefixation such as (114), arguing that the glottal prefix is 'the essential morphological segment for marking plurality'.

(113) أكتب

[IV]

'*aktaba* (+ d.o.) (+ d.o.)

'to make (s.o.) write (s.th.)'

(114) كرش	أكراش
<i>kirsh</i>	<i>'akrāsh</i>
'stomach'	'stomachs'

Thus Fassi Fehri relates this parallel morphological feature of the glottal prefix to plurality in nouns and pattern IV verbs in much the same way as Benmamoun analyses vowel lengthening in pattern III as indicative of plurality as observed above.

7.2.2 Mutuality and reciprocity as verbal plurality

If we allow that there are reasonable arguments in favour of recognising the phenomenon of verbal plurality in MSA pattern II and a possibility that it is also applicable to pattern IV, we must still examine critically Benmamoun's (2003a:53) claim 'that what has been labelled a reciprocal verb such as [*kātab*] in Arabic is in fact a plural form of the verb *katab* (plurality of events, each involving at least one agent)'. Note that Benmamoun uses the term 'reciprocal' here of a verb for which I prefer the designation 'mutual', since I reserve 'reciprocal' for the explicit reciprocity most frequently found in pattern VI, which Benmamoun describes as reflexive and inchoative.

Two questions must be addressed: is Benmamoun's analysis of vowel lengthening as a formal characteristic which is common to pattern III verbs and broken nominal plurals valid, and is verbal plurality a viable interpretation of shared or mutual action?

7.2.2.1 Formal comparison of vowel lengthening in pattern III and broken nominal plurals

In drawing a comparison between the vowel lengthening found in the pattern III template and that in broken nominal plurals, two striking differences emerge.

As already exemplified in (107) and (108), it is only the length and not the identity of the vowel which appears to be common to broken nominal plurals. Although we have thus far supposed that it is vowel length which is characteristic of pattern III also, it is evident from the forms listed in Tables 53 and 54 that it is specifically the long \bar{a} which is basic to the pattern.⁴⁵ It was already noted that the only form which does not contain \bar{a} is the s-stem passive. Cross-linguistically we expect the passive to be marked relative to the active and therefore it is justifiable to consider the vowing of the active as the default. Furthermore, I will present evidence in Chapter 11 that use of the passive vowel melody which gives rise to \bar{u} in the s-stem is largely incompatible with pattern III (and pattern VI). Thus it is entirely possible that the identity of the vowel subject to lengthening, i.e. \bar{a} rather than \bar{u} , is important for the formal realisation of pattern III, casting doubt upon the parallel being drawn.

The other discrepancy is that of the position of the long vowel relative to the root consonants. Again, in Tables 53 and 54 it is shown that the characteristic position for the long vowel in pattern III is between the first and second consonants, while examples (107) and (108) demonstrate that in broken plurals of minimal stem nouns the long vowel occurs in the other available intra-root position between C_2 and C_3 . Significantly, Benmamoun (2003a:57) finds that '[a]n extension of [McCarthy's] analysis of the plural to the reciprocal would yield the wrong results', i.e. the verbal stem **katāb* instead of

⁴⁵ This is the position of Buckley (2004:397).

kātab. However, by substituting the pattern I p-stem as the input for this analysis of pattern III derivation, Benmamoun achieves the desired output (115), which he compares with the broken nominal plural derivation in (116):

(115)	يكتب (input form)	→	يكتّاب (output form)
	<i>yaktubu</i>		<i>yukātibu</i>
	p-stem [I] 'he writes'		p-stem [III] 'he corresponds'
(116)	مكتب (input form)	→	مكتّاب (output form)
	<i>maktab</i>		<i>makātib</i>
	office		offices (after Benmamoun 2003a:59)

Benmamoun (2003a:59) thus claims that 'taking the imperfective [p-stem] template as input to the derivation of the reciprocal allows for a unified analysis of the verbal and nominal "broken" plural formation'. Although his examples appear superficially convincing, I believe there are causes for concern. I do not find it entirely satisfactory that the analysis depends upon an input form which is already inflected for person and gender (3rd person masculine)⁴⁶ and hence derives a similarly inflected output. The implication is that other persons in the pattern III p-stem paradigm are derived separately from corresponding inflected inputs, thus 1st person singular أكتب (*'ukātib*) from أكتب (*'aktub*) etc., since there is no *a priori* reason to prefer 3MSG as input form over any other minimally morphologically complex form in the paradigm. Moreover, in order to then obtain the s-stem paradigm one must presumably delete the inflectional prefix before

46 The category of number in the third person of the p-stem only being represented in the suffix.

inflecting for person and number. The other issue with the example in (116) is that the noun is already derived: it is a noun of place prefixed with *ma-*, as is the example مسجد (*masjid* – 'mosque') which Benmamoun (2003a:55) uses to demonstrate the prosodic derivational mechanism. He highlights the observation that 'in both cases, the output of the derivation is a word with a second syllable whose onset is the first radical of the root and whose vowel is long' (Benmamoun 2003a:58). However his own examples demonstrate that this outcome is only obtained when the input form is already prefixed, whereas the simple underived noun stems in (107) and (108) produce plural forms with the syllable containing the long vowel having the middle radical of the root as onset. What is consistent, even for quadriliteral nouns as in (117), is that nominal inputs yield plural forms with a long vowel in the second syllable.

(117)	قندیل (input form)	→	قنادیل (output form)	
	<i>qindīl</i>		<i>qanādīl</i>	
	'lamp'		'lamps'	(after Benmamoun 2003a:54)

In fact (117) is directly analogous to both (115) and (116) in that all three examples have four consonants, whether the first is supplied by the root or by prefixation.

Before drawing conclusions we should further note that Benmamoun is not suggesting that the iambic plural pattern which he has based his analysis upon is the only pattern on which broken plurals are formed. In section 7.2.1 we met the glottal prefix broken plural pattern which Fassi Fehri (2003) uses to argue for plurality in verbal pattern IV, exemplified in (114) with both glottal prefix and second syllable long vowel.

There are many other patterns which have neither vowel lengthening nor the glottal prefix, such as (118) in which the long vowel of the singular is absent in the plural:

(118) كتاب	كتب
<i>kitāb</i>	<i>kutub</i>
'book'	books'

Ultimately the mechanisms of derivation proposed by both McCarthy & Prince and Benmamoun are only theoretical and are not in themselves formal evidence. Hence from a purely descriptivist formal perspective, we can state only that an unspecified long vowel in second syllable position is a frequent characteristic of nominal broken plurals and that long vowel *ā* with onset C_1 is a basic characteristic of all pattern III active verbal paradigm forms. Thus it is my contention that it is too great a leap to draw a parallel, for example, between the long vowels in دروس (*durūs* – 'lessons') and دارس (*dārasa* – 'to study with (s.o.)') and on this basis to argue that they are both formal realisations of plurality.

7.2.2.2 Is plurality a valid interpretation of mutual action?

Benmamoun's argument for verbal plurality is focussed on the formal and derivational parallels he observes between pattern III verbs and nominal broken plurals: as such, his treatment of semantics is brief, though somewhat curiously, given his use of the designation 'reciprocal' for pattern III, he maintains that:

support for the characterization of the reciprocals as plural verbs comes from the fact that the verbs in question do not always have the meaning of reciprocity (where for example one is both an agent and patient) but may also have the meaning of sharing in the same activity. (Benmamoun 2003a:56)

Thus the only semantic grounds which he provides for an interpretation of plurality is that pattern III is transitive, 'whereas reciprocal formation cross-linguistically usually yields intransitive forms' (Benmamoun 2003a:56). However, I maintain that pattern VI is the true reciprocal and is usually intransitive (or at least, less transitive than the corresponding pattern III verb), while still possessing the long vowel which Benmamoun would characterise as a marker of plurality. It is clear from evidence presented in previous chapters that pattern VI usages are distinct from the base meanings of corresponding pattern I verbs which have neither the long vowel nor the *ta-* prefix. It has also been demonstrated that pattern III is not predominantly transitivising relative to pattern I,⁴⁷ thus we cannot suppose that pattern VI is simply a form transitivised by vowel lengthening and simultaneously detransitivised by *ta-* prefixation. Moreover, I would suggest that it is the often intransitive pattern VI true reciprocal, whose subject must be either grammatically or logically dual or plural, which most closely meets one of the criteria for verbal plurality, i.e. action by many.

However, the semantic case for pattern III mutuality as an expression of verbal plurality is made more convincingly by Fassi Fehri (2003:160), who begins by arguing that in the following examples 'the subject is more active than the object, and the two sentences are not equivalent':

⁴⁷ See section 6.4.2.1

(119a) سابق زيد عمراً [III]

sābaq-a zayd ع amr-an

race;PST-3MSG Zayd Amr-ACC

'Zayd raced Amr'

(119b) سابق عمر زيداً [III]

sābaq-a ع amr zayd-an

race;PST-3MSG Amr Zayd-ACC

'Amr raced Zayd'

(after Fassi Fehri 2003:160)

Whilst I do not accept that the subject here is more active than the object in the literal sense of the action being performed, I have previously suggested that the difference in similar examples is thematic⁴⁸ and furthermore the choice of grammatical roles may be indicative of which participant is the initiator of the action. This is perhaps what Fassi Fehri means by 'not equivalent', and I have already noted that there are many verbs in pattern III which I have described as asymmetrically mutual,⁴⁹ where the non-equivalence of subject and object is more pronounced. Thus it may be necessary to recognise asymmetry as inherent in pattern III, though consisting of a continuum ranging from equal partners in the action differentiated only thematically through emphasis on initiator to differentiation of active and passive participants. Fassi Fehri concludes that pattern III vowel lengthening:

48 See section 5.2.1

49 See section 5.2.2.1

expresses plurality of participants. But participants are not treated as 'equal'. [Plurality] is partitioned, hence the transitivity. In the reciprocal [pattern VI], the participants are assembled, hence the intransitivity, even though the [event] is plural. (Fassi Fehri 2003:162)

Thus vowel lengthening represents semantic plurality in both patterns III and VI; partitioning of participants in a transitive construction allows asymmetric differentiation in pattern III; and detransitivising by *ta-* prefixation removes the asymmetry and assembles the participants in one grammatical subject. Hence there appears to be a good semantic case for accepting verbal plurality as a property of both pattern III mutual verbs and pattern VI reciprocal verbs.

7.2.3 Summary - plurality

The evidence discussed in the previous two sections leads us to conclude that verbal plurality is a viable semantic explanation of pattern III mutuality and pattern VI reciprocity, though the formal equivalence of vowel lengthening in these patterns with that in certain nominal broken plurals is doubtful.

However, a major difficulty for establishing the form – meaning relationship in these verbal patterns remains. It appears that Benmamoun (2003a) is misguidedly using 'reciprocal', which should be reserved as a semantic label, for all formal realisations identified as pattern III, a practice which as previously discussed⁵⁰ can lead to prejudging the meaning of a given morphological form. In fact, it has already been demonstrated in Chapter 5 that sharing in an activity, or mutuality of action, is the dominant meaning for

⁵⁰ See sections 2.1.2.5.3 and 4.3.1

pattern III, but that over one-quarter of all verbs in this pattern do not express this dominant meaning. This is an issue which Benmamoun does not address. Thus even if his case for pattern III plurality is valid, his analysis of the whole set of 465 verbs which share this common template is flawed: he has simply chosen to ignore the substantial subset of the verbs in this pattern which are not capable of mutual and hence plural interpretation.

This continued inability to account for the lexical exceptions to mutuality in pattern III leads me to investigate whether the characteristic long \bar{a} of pattern III (and hence pattern VI), if not equivalent to vowel lengthening in nominal broken plurals, is nevertheless found elsewhere in the morphological system of MSA.

7.3 The long \bar{a} in Arabic morphology

Rather than proceeding from meaning to form, as Benmamoun (2003a) appears to do for plurality, I consider it preferable to start with form, since this evidence is objective. Thus Tables 55 and 56, largely based on Wright (1967) and Schulz (2004), bring together an exhaustive list of forms (broadly arranged in order of morphological complexity) which exhibit long \bar{a} in $C_1\bar{a}C_2$ and $C_2\bar{a}C_3$ sequences respectively, repeating some of the data for pattern III verbal forms and derivatives from Tables 53 and 54 for ease of comparison.

We may readily make the following observations on the basis of the data in these tables:

- i. whilst long \bar{a} is present in a number of broken nominal plurals, it is by no means restricted to these forms;
- ii. all verbal patterns from I to XII (except XI) have at least one verbal noun form with long \bar{a} ;

iii. both $C_1\bar{a}C_2$ and $C_2\bar{a}C_3$ sequences are commonly encountered, though only the former is found in verbal patterns.

Description	Paradigm form	CV template
active participle [I]	فاعِل	$C_1\bar{a}C_2iC_3$
noun of instrument	فاعِلَة	$C_1\bar{a}C_2iC_3a$
noun of instrument	فاعول	$C_1\bar{a}C_2\bar{u}C_3$
s-stem (active) verb [III]	فاعَل	$C_1\bar{a}C_2aC_3$
p-stem (active) verb [III]	يُفاعِل	$yuC_1\bar{a}C_2iC_3$
p-stem (passive) verb [III]	يُفاعَل	$yuC_1\bar{a}C_2aC_3$
active participle [III]	مُفاعِل	$muC_1\bar{a}C_2iC_3$
passive participle [III]	مُفاعَل	$muC_1\bar{a}C_2aC_3$
verbal noun [III]	مُفاعِلَة	$muC_1\bar{a}C_2aC_3a$
broken plural of verbal noun [IV]	أفاعيل	$'aC_1\bar{a}C_2\bar{i}C_3$
verbal noun [II]; broken plural	تفاعيل	$taC_1\bar{a}C_2\bar{i}C_3$
s-stem (active) verb [VI]	تفاعَل	$taC_1\bar{a}C_2aC_3$
verbal noun [VI]	تفاعَل	$taC_1\bar{a}C_2aC_3$
verbal noun [VI]	تفاعِل	$taC_1\bar{a}C_2iC_3$
verbal noun [VI]	تفاعُل	$taC_1\bar{a}C_2uC_3$
p-stem (active) verb [VI]	يَتفاعَل	$yataC_1\bar{a}C_2aC_3$
p-stem (passive) verb [VI]	يُتفاعَل	$yutaC_1\bar{a}C_2aC_3$
active participle [VI]	مُتفاعِل	$mutaC_1\bar{a}C_2iC_3$
passive participle [VI]	مُتفاعَل	$mutaC_1\bar{a}C_2aC_3$

Table 55: All forms with $C_1\bar{a}C_2$ sequence

Description	Paradigm form	CV template
verbal noun [I]; broken plural ⁵¹	فَعَال	C ₁ aC ₂ āC ₃
verbal noun [I]; broken plural	فَعَالَة	C ₁ aC ₂ āC ₃ a
broken plural	فَعَالِي	C ₁ aC ₂ āC ₃ ā
verbal noun [I]; verbal noun [III];	فِعَال	C ₁ iC ₂ āC ₃
verbal noun [I]; broken plural; noun of occupation	فِعَالَة	C ₁ iC ₂ āC ₃ a
verbal noun [I] ³⁵	فُعَال	C ₁ uC ₂ āC ₃
verbal noun [I]; noun of fragmentation	فُعَالَة	C ₁ uC ₂ āC ₃ a
broken plural	فُعَالِي	C ₁ uC ₂ āC ₃ ā
verbal noun [I]	فُعَالِيَة	C ₁ aC ₂ āC ₃ iyā
verbal noun [III]	فِيَعَال	C ₁ īC ₂ āC ₃
verbal noun [III]	فِيَعَال	C ₁ iC ₂ C ₂ āC ₃
noun of occupation / intensity	فَعَّال	C ₁ aC ₂ C ₂ āC ₃
noun of instrument	فَعَّالَة	C ₁ aC ₂ C ₂ āC ₃ a
verbal noun [II]; verbal noun [III]; verbal noun [VIII]	فِيَعَّال	C ₁ iC ₂ C ₂ āC ₃
broken plural	فِيَعَّال	C ₁ uC ₂ C ₂ āC ₃
broken plural	أَفْعَال	'aC ₁ C ₂ āC ₃
verbal noun [IV]	إِفْعَال	'iC ₁ C ₂ āC ₃
noun of instrument etc.	مِفْعَال	miC ₁ C ₂ āC ₃
active participle [XI]	مُفْعَال	muC ₁ C ₂ āC ₃ C ₃
verbal noun [II]	تَفْعَال	taC ₁ C ₂ āC ₃
verbal noun [II]	تِفْعَال	tiC ₁ C ₂ āC ₃
verbal noun [V]	تِفْعَال	tiC ₁ iC ₂ C ₂ āC ₃
verbal noun [VII]	اِنْفِعَال	(i)nC ₁ iC ₂ āC ₃
verbal noun [VIII]	اِفْتِعَال	(i)C ₁ tiC ₂ āC ₃
verbal noun [X]	اِسْتِفْعَال	(i)stiC ₁ C ₂ āC ₃
verbal noun [XII]	اِفْعِيَعَال	(i)C ₁ C ₂ īC ₂ āC ₃

Table 56: All forms with C₂āC₃ sequence⁵²

51 Wright (1967:I.133) also recognises 'adjectives ... assimilated to the participles' with these forms.

52 There are additionally three quadrilateral broken plural forms with this sequence not recorded here.

Some further clarification of both the terminology and usage of the main grammatical categories presented in Tables 55 and 56 is required.

7.3.1 Nominal templates with long *ā*

7.3.1.1 Participles

Following Holes (2004), for example, I have used the terms 'active participle' and 'passive participle' since the concept of participle is familiar from English grammar. However, once again we risk prejudging our analysis of elements of the language by naming them according to our perception of their meaning rather than their form.

Wright (1967) frequently, though not entirely consistently, uses Latin terminology, thus *nomen agentis* and *nomen patientis* or agent and patient nouns respectively. If we instead turn for insight to the terminology of Arab grammarians, they are presented as اسم الفاعل (*ismu l-fā'il* - 'noun of doing') and اسم المفعول (*ismu l-maf'ūl* - 'noun of done'). In Arabic these terms are essentially the formal designations we seek, since the noun in construct in each of them is simply the corresponding pattern I participle of the paradigm verb فعل (*fa'ala* - 'to do'), though translation necessarily involves sacrificing the formal link, although my rendition into English of the second term, if ungrammatical, is both appropriate and revealing. Since our main focus is the verbal system, there has thus far been no need to discuss the relationship between the categories of noun and adjective in Arabic, but it will suffice to note that the distinction between nouns and adjectives is fuzzy, an understanding of which makes sense of this explanation by Wright, which might at first appear self-contradictory:

The nouns which Arab grammarians call ... *nomina agentis* [agent nouns], and ... *nomina patientis* [patient nouns], are *verbal adjectives*, i.e. adjectives derived from verbs, and nearly correspond in nature and signification to what we call *participles*'. (Wright 1967:I.131)

This should not be too surprising: we are familiar with the ambiguity which exists concerning the English gerund, which may often be used nominally (120a) or adjectivally (120b), as well as verbally for the continuous aspect. However English also permits this ambiguity of category for the second participle⁵³ for some verbs (121a-b), though others like 'to do' are lexically excluded from nominal usage, which is what makes my translation of the Arabic term as 'noun of done' ungrammatical, although it renders faithfully the concept of the original.

- | | |
|--|-------------|
| (120a) Smoking is not permitted. | (noun) |
| (120b) The smoking barbecue was extinguished. | (adjective) |
| (121a) The deceased were buried on the battlefield . | (noun) |
| (121b) The deceased dictator was buried today. | (adjective) |

We shall return in Chapter 11 to consider whether there is any evidence for comparable lexical exclusion of some Arabic verbs from usage in the passive participle form.

Regarding the active participle, when used adjectivally it broadly means 'performing the action designated by the verb' and nominally it designates the 'performer of the action designated by the verb', i.e. the agent, whether animate or inanimate.

⁵³ See footnote 1 on page 8.

Schulz (2004:70) notes that adjectival and nominal usages are often lexicalised as in examples (122) and (123), with some verbal nouns used in either category (124).

(122) بارد [APT:I]

bārid

'cold'

(123) طابع [APT:I]

Tābi ع

'stamp [for making an imprint]'

(124) عامل [APT:I]

āmil ع

'active' / 'worker'

(after Schulz 2004:70)

The following examples of the *wāw al-Hāl* (واو الحال – “and” of circumstance) construction (Cachia 1973:٣٤) employing a p-stem verb and an active participle respectively demonstrate their interchangeability:

(125a) وهو ينظر إليّ

wa-huwa yanDHur-u 'ilay-ya

and-he look;NPST.3MSG-IND to-OBJ.1SG

'while [he was] looking at me'

(125b) وهو جالس مع ياسير

wa-huwa jālis ma ʿa yasīr

and-he sit;_{APT} with Yasir

'while [he was] sitting with Yasir'

(after Al-Tarouti 1991:131-133)

Indeed, Al-Tarouti (1991:134-135) states that '[t]he above examples illustrate the compatibility of the [p-stem] verb and the active participle to the extent that they can be substituted with each other'. Al-Saqi writes extensively on the nature of the active participle, describing it in the title of his work as 'between nominality and verbality', and concurs that it is interchangeable with its p-stem verb (Al-Saqi 1970:41). Thus, note that the active participle represents ongoing, incomplete action in the same manner as the p-stem verb, which is usually designated imperfect or imperfective.

Recall also at this point (see section 3.2.2.3) that the prosodic analysis of McCarthy & Prince (1990a:28-29) reveals that the nominal CvvCvC prosodic template, on which the pattern I active participle stem is based and which accounts for 97% of nouns in this class, has 'no role ... as a primitive, underived template'. Indeed they conclude that it is derived by lengthening the initial vowel of the verbal pattern in the same manner as the pattern III verbal stem. According to this analysis, it would be entirely consistent to expect a commonality of meaning between the active participle and the pattern III verb.

The passive participle is also used adjectivally in the sense of 'state resulting from performance of the action designated by the verb' or nominally to mean 'entity which has had the action designated by the verb performed on it', i.e. the patient, as in

examples (126) and (127) respectively.

- | | | |
|-------|-------------------|------------------------------------|
| (126) | مفتوح | [PPT:I] |
| | <i>maftūH</i> | |
| | 'open' | (i.e. 'having been opened') |
| (127) | موظف | [PPT:II] |
| | <i>muwaDHDHaf</i> | |
| | 'employee' | (i.e. 'one who has been employed') |

It is important to be aware that the Arabic passive participle is not directly equivalent to the English second participle. Beedham's (2005:33-46) analysis of the passive as aspect in English draws the distinction between actional and statal passives, which both make use of what he characterises as the '*be + V-ed*' construction involving the second participle. The passive sentence using this construction in (128a) is ambiguous as to actional or statal interpretation, as (128b-c) demonstrate:

(128a) The door was closed.

(128b) The door was closed by the janitor at 6.00. [actional]

(128c) The door was closed when I walked past it at 6.00 [statal]

(after Beedham 2005:34)

However, MSA does make a distinction between actional and statal passive, reserving the passive participle for statal use, consistent with its adjectival quality, as in (129):

(129) كان الباب مغلقاً

kān-a l-bāb mughlaq-an

be;PST-3MSG DEF-door close;PPT-ACC.INDF

'The door was closed'

[statal]

Emphasis on state is demonstrated by the following corpus example (130) of the same verbal participle in context, in which the implication is that the doors (to peace) were closed throughout the former Prime Minister's term of office:

(130) بهدف أن يفتح أمامه أبوابا كانت مغلقة في عهد رئيس الوزراء السابق بنيامين نيتانياهو

bi-hadaf 'an yaftaH-a 'amāma-hu 'abwāb kān-at

with-goal that open;NPST.3MSG-SBJV before-OBJ.3MSG door;PL be;PST-3FSG

mughlaq-a fī ʿahd ra'īs-i l-wuzarā'-i s-sābiq

close;PPT-F in time president-GEN DEF-minister;PL-GEN DEF-former

binyāmīn nītānyāhū

Benjamin Netanyahu

'... with the goal of opening doors before him which were closed in the time of former Prime Minister, Benjamin Netanyahu' (arabiCorpus:121499FILE01)

In contrast, the Arabic actional passive is more naturally rendered using one or other of the constructions shown in (131) and (132), employing vowel melody change or a pattern VII inchoative or 'middle' verb respectively.

(131) أُغْلِقَ الباب

'ughliq-a l-bāb

close;PST.PASS-3MSG DEF-door

'The door was closed'

[actional]

(132) انغلق الباب

inghalaq-a l-bāb

be_closed;PST-3MSG DEF-door

'The door was closed'

[actional]

(or 'The door closed')⁵⁴

The absence in Arabic of the equivalent of the agentive *by*-phrase usually associated with the English passive⁵⁵ does not compromise actional interpretation, and moreover:

[t]he agentive *by*-phrase [in English] is optional. In fact, it is rare. According to Quirk et al. (1985:164-165) approximately four out of five English passive sentences have no expressed agent, usually because the agent is irrelevant or unknown, as in *My house was burgled last night.* (Beedham 2005:35)

Thus the Arabic passive participle emphasises result not process, i.e. the state which results rather than the action which produced that state. In (133), the same construction as (125a-b), the passive participle describes the result of the action of the corresponding

54 Any doubt as to the equivalence of the passive and the inchoative is removed by the understanding that external agency of some kind is necessarily implied, since a door is incapable of closing itself.

55 Holes (2004:319-320) reports that constructions representing overt expression of the agent of a passive verb are now becoming commonplace in journalistic Arabic, however, due to transfer from European languages. He also notes a further construction employing a grammatically active verb with passive meaning, which is irrelevant to the present discussion.

verb upon what would be the patient of the verb ('her eyes') as opposed to the ongoing performance of the verb:

(133) وعينيها مفتوحة

wa-ayn-ay-hā *maftūH-a*

and-eye-DU-POSS.3FSG open;PPT-F

'[while] her eyes [were] open[ed] / with her eyes open'

(after Al-Tarouti 1991:135)

For our present purposes, it may be helpful to think of the active and passive participles as 'doing' and 'done' forms and to note that the paradigmatic 'doing' form (that of pattern I) and both the 'doing' and 'done' forms of patterns III and VI all contain the $C_1\bar{a}C_2$ sequence.

7.3.1.2 Verbal nouns

Known in Arabic as the مصدر (*maSdar* - 'source'), the verbal noun is the closest counterpart of the English infinitive and indeed it is described as an infinitive by Schulz (2004:58). Although 'systematically related to specific verb [patterns] ... from triliteral or quadriliteral roots' (Ryding 2005:75), the verbal noun exists in numerous templates, especially in the lower numbered patterns. Among these templates, as already observed, all triliteral verb patterns from I to XII (excluding XI) have at least one verbal noun template with long \bar{a} , usually in a $C_2\bar{a}C_3$ sequence, although II, III and VI all have verbal nouns with $C_1\bar{a}C_2$. Ryding (2005:75) suggests that the verbal noun is best understood as

'[naming] the action denoted by its corresponding verb'. Thus it also frequently fulfils a role similar to the nominal use of the English gerund and there is considerable overlap in usage with the active participle. Wright both draws a distinction and acknowledges the similarities:

The [verbal nouns] are by their very nature substantives, but have come to be used also as adjectives; the [active and passive participles] are by their very nature adjectives, but have come to be used also as substantives.

(Wright 1967:I.109)

Although the verbal noun may be lexicalised as in examples (134a-b), it is frequently employed to express the action of the verb, especially when the agent is not relevant or non-specific and thus 'like passivization, allows "unattributable" claims to be made' (Holes 2004:320). Thus the finite subjunctive verb *يُصَلِّح* (yuSliHa) in (135a), which necessarily possesses a subject, may be replaced by its (non-finite) verbal noun *إِصْلَاح* ('iSlāH [VN:IV]), allowing the agent of reform to remain unattributed as in (135b).

(134a) كذب

kidhb

'lie'

(134b) سؤال

su'āl

'question'

(135a) طلب زعيم المعارضة أن يصلح رئيس الوزراء الاقتصاد

Talab-a *za* *ʕīm-u* *l-mu* *ʕāraDa* *'an* *yuSlīH-a*
demand;PST-3MSG leader-NOM DEF-opposition that reform;NPST.3MSG-SBJV
ra'īs-u *l-wuzarā'-i* *l-iqtīSād*
president-NOM DEF-minister;PL-GEN DEF-economy

'The leader of the opposition demanded that the prime minister reform the economy'

(135b) طلب زعيم المعارضة إصلاح الاقتصاد

Talab-a *za* *ʕīm-u* *l-mu* *ʕāraDa* *'iSlāH-a* *l-iqtīSād*
demand;PST-3MSG leader-NOM DEF-opposition reform[VN:IV]-ACC DEF-economy

'The leader of the opposition demanded reform of the economy [demanded that the economy be reformed]'

When used verbally in this way the verbal noun retains the lexical parameters specified for its corresponding verb, in particular the valency of the verb and any prepositions introducing indirect objects. The following examples (136a-c) show that the first specified argument, if either subject or direct object, goes into construct with the verbal noun and the remaining verbal arguments are represented as direct or indirect objects as specified by the verb's lexical parameters.

the five templates containing long \bar{a} are shown in (137a-e) alongside the corresponding verbs, the first three having a $C_2\bar{a}C_3$ sequence and the other two having $C_1\bar{a}C_2$:

(137a) مفتاح	فتح
<i>miftāH</i>	<i>fataHa</i>
'key'	'to open'
(137b) حجاب	حجب
<i>Hijāb</i>	<i>Hajaba</i>
'veil / covering'	'to veil / cover'
(137c) غسّالة	غسل
<i>ghassāla</i>	<i>ghasala</i>
'washing machine'	'to wash'
(137d) قاطرة	قطر
<i>qāTira</i>	<i>qaTara</i>
'locomotive'	'to tow'
(137e) حاسوب	حسب
<i>Hāsūb</i>	<i>Hasaba</i>
'computer'	'to calculate'

As the terminology implies, nouns of instrument are agent nouns, being the (inanimate) entity which performs the action of the verb. Concerning (137e), this is clearly a recent coinage and the other three examples given by Schulz (2004:78) on this template appear

not to be deverbatives. Watson (2002:131) remarks that '[a] large number of nouns on [this] template are originally loan words'.

7.3.1.4 Nouns of occupation and intensity

Related to the $C_1aC_2C_2\bar{a}C_3a$ template exemplified in (137c), which has the feminine morphological suffix, is the $C_1aC_2C_2\bar{a}C_3$ template commonly used for occupations. Both these templates include not only long \bar{a} , but also reduplication of the medial consonant, a phenomenon already observed to be associated with verbal plurality.⁵⁶ Intensity has also been established as a kind of plurality of action, and indeed the same template which serves to represent occupations may also be used to designate or describe an entity, whether animate or inanimate, which performs the verb iteratively or intensively. The following examples demonstrate both nominal and adjectival uses:

(138a) أَكَال	أَكَل
<i>'akkāl</i>	<i>'akala</i>
'glutton'	'to eat'
(138b) كَذَاب	كَذَب
<i>kadhdhāb</i>	<i>kadhaba</i>
'[habitual] liar'	'to lie'
(138c) عَلَام	عَلِم
<i>callām</i>	<i>alima</i>
'knowing thoroughly'	'to know'

⁵⁶ See section 7.2.1.

(138d) بگَاء	بكى
<i>bakkā'</i> ⁵⁷	<i>bakā</i>
'given to weeping frequently'	'to weep'

From the iterative and therefore habitual meanings of (138a-b), it is not difficult to see that the application of this template to occupations or professions is merely an extension of the concept of 'one who performs the verb iteratively or habitually', hence (139a-b):

(139a) خدَام	خدم
<i>khaddām</i>	<i>khadama</i>
'servant'	'to serve'
(139b) خبَّاز	خبز
<i>khabbāz</i>	<i>khabaza</i>
'baker'	'to bake'

Similarly, the C₁iC₂āC₃a template may also represent an occupational meaning, though an abstract noun referring to performance of a trade or profession as opposed to an agent noun referring to the performer, hence 'performing the verb habitually by way of an occupation' (140):

⁵⁷ The form of this noun is modified from the standard template to accommodate the weak final root consonant.

(140) نجارة	نجر
<i>nijāra</i>	<i>najara</i>
'carpentry'	'to hew / carve / plane [wood]'

Words formed on these templates are not always deverbal, such as those in (141) which are most likely derived from nouns; this emphasises that the templates are productive for occupations and their practitioners.

(141a) بحار	بحر
<i>baHHār</i>	<i>baHr</i>
'sailor'	'sea'
(141b) نحالة	نحلة
<i>niHāla</i>	<i>naHla</i>
'bee-keeping'	'bee'

7.3.2 Commonalities of meaning

Drawing together our analyses of the nominal forms described in the previous sections, if we maintain that the formal representation of long *ā* bears meaning, then what might that meaning be? The following observations will help to clarify some shared properties of the long *ā* forms:

- i. they are almost always associated with activity as opposed to passivity: describing or designating the agent not the patient;
- ii. they generally focus on process as opposed to result: 'doing' not 'done';

- iii. they frequently represent situations as possessing internal temporal complexity: durative as opposed to punctual; habitual or iterative as opposed to a single action.

In the light of these observations it may be helpful to reconsider the pattern III and pattern VI verbs and what distinguishes them semantically from their pattern I counterparts where these exist.

7.3.2.1 Agency and patiency

Consider the following examples:

(142a) قاتل [I]

qatala (+ d.o.)

'to kill (s.o.)'

(142b) قاتل [III]

qātala (+ d.o.)

'to fight [with] (s.o.)'

(142c) تقاتل [VI]

taqātala

'to fight each other'

In the pattern I example, the direct object is patient, i.e. it receives the action of the verb,

whereas for the corresponding pattern III verb, which we have previously designated mutual, the direct object is a participant in the action rather than passively receiving the action, i.e. not patient, whilst in pattern VI the participants are co-agents.

Compare the following examples in English, which demonstrate that *murder* and *fight* behave differently:

(143a) The terrorists murdered a man

(143b) A man was murdered by the terrorists.

(143c) I saw a murdered man.

(143d) John fought a man.

(143e) ? A man was fought by John.

(143f) * I saw a fought man.

(143g) John and the man fought [together].

(143h) * John and the man were fought.

Example (143e) is at best odd as a passive, though may be marginally acceptable with suitable compositional context, while the attributive use of the second participle in (143f) is much less acceptable than (143c). Furthermore, the reciprocal action in (143g) is not passivisable as the verb is intransitive. If the corresponding Arabic verbs in (142a-c) behave similarly with regard to the passive and are representative of their patterns, we would expect both patterns III and VI to resist passivisation by the vowel melody mechanism. Moreover, I would contend that in (143d) and (143e) both participants may be designated *fighters*, i.e. the English agent noun, whilst **fightee* to

describe the direct object on the paradigm *employer – employee* would be both contrived and redundant. Since the corresponding Arabic verbs in the above examples either have no direct object (pattern VI) or it is not patient (pattern III), we would expect them generally to have no use for a passive participle, since this is a *nomen patientis* or 'noun of done' and there is no patient to specify and no result to describe. Hence we could describe both participants in (142b-c) individually as مقاتِل (muqātil – 'fighter / fighting') but neither as *مقاتَل (*muqātal – 'fought'). Is it possible that all Arabic pattern III and pattern VI verbs behave similarly? I will present evidence in Chapter 11 in support of these related hypotheses of non-passivisability, also explaining the apparent anomaly of passive participle templates containing the C₁āC₂ sequence, which I have noted above as being associated with activity or agency.

7.3.2.2 Process and result

Regarding the English examples in the previous section, Beedham (2005:23) notes that '[t]he possibility or impossibility of the perfect [second] participle appearing in attributive position, i.e. before the noun, also indicates lexical aspect of the verb'. Analysing the English passive as 'action + state', he finds that it is the verb's telicity, i.e. whether it has an inherent endpoint, which affects passivisability (Beedham 2005:43-44). Building upon the examples above, consider the following verbs:

(144a) كتب

[I]

kataba (+ d.o.)

'to write (s.th.)'

(144b) كَاتِب [III]

kātaba (+ d.o.)

'to correspond with (s.o.)'

(144c) تَكَاتِب [VI]

takātaba

'to keep up a correspondence [with each other]'

The direct object of the pattern I verb in (144a), be it a letter, a book etc., is affected by the action of the verb such that at the termination of the action it has entered into a new state: it may be described by the passive participle مَكْتُوب (*maktūb* – 'written'), the endpoint of the action. Both the action itself leading up to the endpoint and the agent of that action may be designated كَاتِب (*kātib* – 'writing / writer'), the active participle with long *ā* focusing on the process which leads up to the endpoint. However, for the pattern III and pattern VI verbs, while there is no problem conceptualising either the process or the participants (مَكَاتِب – *mukātib* – 'corresponding / correspondent'), what can we plausibly identify as result? Whilst long-term correspondence may result in a pile of letters, it implies no resulting change of state upon either or any of the two or more participants, whether they are grammatically subject or direct object. Thus we have preliminary evidence for atelicity in patterns III and VI compared with their telic pattern I counterpart.

7.3.2.3 Temporal complexity

There is a strong sense of temporal complexity among pattern III and pattern VI verbs. Thus (145) most naturally suggests an interpretation with both participants active more-or-less continuously throughout the specified time period:

- (145) كانا يتقاتلان طوال ساعتين [VI]
kān-ā yataqātal-ā-n Tiwāla sā ʿat-ayn
 be;PST-3MD fight_together;NPST.3M-DU-IND during hour-DU.GEN
 'They were fighting [together] for two hours'

Example (146) represents repeated individual activity on the part of each participant, i.e. an iterative interpretation, each taking turns at being the writer and the recipient of the writing, and the situation described as a whole must necessarily therefore be durative. In this example the durative adverbial phrase implies sustained activity, but even if only one exchange of letters takes place the event is temporally complex, since more than one act of letter-writing must have taken place to justify correspondence.

- (146) كانا يتكاتبان طوال سنتين [VI]
kān-ā yatakātab-ā-n Tiwāla sanat-ayn
 be;PST-3MDU correspond_together;NPST.3M-DU-IND during year-DU.GEN
 'They were corresponding [together] for two years'

Clearly durativity and iterativity are aspectual properties, relating to the way in which

events pass through time. The examples presented above represent temporally complex situations, i.e. situations which may be viewed from within and perceived as having an internal texture, thus they are both durative and dynamic, involving change. Although Al-Tarouti (1991:139) observes that 'reciprocal events are internally complex and thus viewed as imperfective', I will proceed to demonstrate in the following chapter that terms such as imperfective are best reserved for grammatical aspect, while the aspectual properties in these examples belong to the category of lexical aspect.

7.3.3 Summary – hypothesis of long \bar{a} as an aspectual marker

On the basis of the evidence presented above, I am led to hypothesise that the formal expression of long \bar{a} in the $C_1\bar{a}C_2$ sequence in both verbs and nouns has a consistent aspectual significance and that this may also extend to the other inter-radical position $C_2\bar{a}C_3$. However, the complexities surrounding the characterisation of verbal aspect are such that different scholars have proposed various models which recognise some or all of a raft of properties, among them telicity, durativity, dynamicity and iterativity, as aspectual or not. Thus the chapter which follows will assess an aspectual model for its applicability to Arabic before addressing the question of which specific aspectual property is associated with long \bar{a} verbal and nominal templates.

Chapter 8

An aspectual model for Modern Standard Arabic

8.1 Defining aspect

Recognition of the category of verbal aspect has its origins in the study of Slavic linguistics. Consequently, the particular realisation of aspect in Slavic, i.e. the morphological opposition of perfective and imperfective verbs, has been held by some to be the defining standard for the category of aspect cross-linguistically, such that any potentially aspectual expression in a given language which does not equate to the Slavic criteria is not aspect. This is the position adopted by Zandvoort (1962), though others have sought to redefine and extend the category of aspect in recognition of the cross-linguistic complexity of representing the relationship of the verb to the time line of the event it describes in a manner which is not simply a matter of tense. Much of the debate centres around whether 'aspect as grammaticalisation of the relevant semantic distinctions' must be held as distinct from *Aktionsart*, a German term applied to 'lexicalisation of the distinctions', whether or not 'lexicalisation is by means of derivational morphology' (Comrie 1976:6-7). In fact Comrie's approach dispenses with the term *Aktionsart* and, although Bache recognises the significance of Comrie's contribution, he concludes that both Comrie (1976) and Lyons (1977) 'fail to come to grips with one crucial problem: the distinction between aspect and *Aktionsart*' and proceeds to 'attempt to show that a strict distinction between aspect and *Aktionsart* must be insisted on' (Bache 1982:59).

It is not my intention here to enter more than absolutely necessary into the

theoretical debate concerning the scope of the category of aspect. I am convinced of two things: firstly, that the category of tense is insufficient as the only temporal descriptor grammatically realised in the verb in Arabic, therefore the language must possess an aspectual system. Secondly, that the aspect of the verb realised in the inflectional morphology of MSA (see section 8.2) must interact with verbal temporal semantics, realised in derivational morphology and hence lexically specified. Thus our present requirement is a workable model of aspect for MSA which may be used diagnostically to determine the precise aspectual property or properties the existence of which I have hypothesised for pattern III and VI verbs and the nominal forms whose templates share the $C_1\bar{a}C_2$ sequence.

In pursuit of such a model I will assume the definition that 'aspects are different ways of viewing the internal temporal constituency of a situation' (Comrie 1976:3), and thus non-deictic, contrasted with tense which is deictic and 'relates the time of the situation to some other time, usually to the moment of speaking' (Comrie 1976:1-2). The following definition may also be helpful:

[A]spect is an expression of the way in which an action/event passes through time, e.g. as a continuous/extended activity, as an event with a final result, as the beginning of an action, with emphasis on the intensity of an action, etc.

(Beedham 2005:19)

I concur with Beedham (2005:21) that '[a]spect is formally realized in three different ways in the world's languages', though his characterisation of the first as 'Auxiliary + Participle', while applicable to the Indo-European languages he has worked with, is too

narrow for our purposes. I will therefore use the term 'grammatical aspect' to encompass this and other morphosyntactic realisations, thus including inflectional (but not derivational) morphology. The realisation of aspect often described as *Aktionsart*, which is what is relevant for attributing meaning to verbal patterns III and VI and the formally similar nominal templates, we will call 'lexical aspect', which may or may not have overt formal expression in derivational morphology. Lastly, we must recognise the existence of 'compositional aspect', noting that verbs in context respond differently with respect to the temporal constituency of the situation depicted according to their compositional environment, including, but not limited to, the categories of number and definiteness in their agents and patients (Verkuyl 1993). We will also observe that compositional context leads to pragmatically determined aspect in certain situations.

8.2 The Arabic s-stem and p-stem verb forms: tense or grammatical aspect?

The two stems of the Arabic verb were introduced in Chapter 2, where we referred to them as the s- and p-stems following Holes (2004), whilst noting that they are most often referred to as the perfect and imperfect respectively, for example by Wright, whose grammar dates from the mid-nineteenth century. He refers to the verbal stems as either 'states' or 'tenses', but writes:

The temporal forms of the Arabic verb are but *two* in number, the one expressing a *finished* act, one that is done and completed in relation to other acts (the *Perfect*); the other an *unfinished* act, one that is just commencing or in progress (the *Imperfect*).
(Wright 1967:51)

From this characterisation, one might speculate that had Wright been aware of modern linguistic theory and terminology, he would instead have described the two stems not as tenses but as aspects.⁵⁸ The non-deictic and hence aspectual nature of the Arabic stems leads Wright to observe that:

[a] Semitic Perfect or Imperfect has, in and of itself, no reference to the temporal relations of the speaker ... and of other actions which are brought into juxtaposition with it. (Wright 1967:51)

Are we therefore justified in categorising the Arabic stems as aspect and dispensing with the terminology of tense altogether? Wright (1967:51) acknowledges that the nomenclature used by Arab grammarians refers to deictic time, i.e. tense, arguing that they 'have given an undue importance to the idea of time, in connection with the verbal forms'. Use of the term الماضي (*al-māDī* – 'the past') for the s-stem is near universal in Arabic linguistic metalanguage, although the term referring to the p-stem, المضارع (*al-muDāri* ع), has no explicit time connotation, rather meaning 'alike' or 'similar'. Wright observes, however, that Arab grammarians also assign the terms denoting present (الحال – *al-Hāl* or الحاضر – *al-HāDir*) and the future (المستقبل – *al-mustaqbal*) to the p-stem.

Pragmatically, we may suggest that completed events are most often located in the speaker's past, while events represented as incomplete may be located anywhere on the time line. This simplified view is broadly aligned with the usage of the s- and p-stems respectively. Thus the p-stem functions for all events not yet completed at the time

58 As does Buckley (2004:537ff.).

Thus we must be aware that:

[w]hat is classified as a tense, a mood or an aspect in any particular language may have a range of functions, some or all of which may fall outside the scope of the general definition of the grammatical category in question.... Furthermore, it is undoubtedly the case that the terms conventionally used to describe the functions of the tenses, moods and aspects in certain languages are very misleading. This point must be borne constantly in mind. (Lyons 1977:682)

There is no *a priori* reason in language why the existence of a form with perfective aspect implies a corresponding imperfective form, nor why a past tense is necessarily juxtaposed with a contrasting non-past tense or tenses. As Lyons continues:

[A]lthough tense and aspect may be found in the same language, it is not uncommon for there to be gaps and asymmetries. (Lyons 1977:688)

Comrie's (1976:78-81) position is that Arabic has combined tense-aspect oppositions, a view supported by Al-Tarouti (2001:206-207), and Mohammad (1983:122) elaborates a full tense-aspect system. Meanwhile Bahloul (2008:71), in recognition that for the Arabic perfect 'anteriority is not always deictically defined', argues for 'a taxis-aspect' system following Jakobson (1971). Holes, who is particularly concerned with continuing developments in modern Arabic and also draws upon Eisele (1999), writes:

The s-stem/p-stem distinction was historically not one of tense but of verbal aspect – although synchronically ... it is evolving in both MSA and the dialects towards a tense system. (Holes 2004:217)

Indeed Fassi Fehri (2004:236) argues that 'Arabic is more of a “tense language” than an “aspect language”’.

Thus the MSA tense-aspect debate is complex and may not be capable of satisfactory resolution. I must reiterate that my interest in it for present purposes is limited to the interaction of grammatical aspect and tense with lexical aspect. In glossing examples, I have chosen to represent the s-stem as 'PST', in recognition of its tense function as past, or at least relative past, in modern Arabic. This is not intended to exclude its perfective function, however. Similarly the p-stem is glossed as 'NPST', which is consistent with an analysis of the p-stem as the default or temporally and aspectually unmarked stem, much as argued by Benmamoun (1999).

However, since the s- and p-stems are frequently not used in isolation but in combination with each other and with the particles *قد* (*qad*) and *سوف* (*sawfa*), it is possible to construct or identify examples of language in which aspect and tense are clearly specified. The particle *سوف* (*sawfa*), also grammaticalised as prefixed *سـ* (*sa-*), combines with the p-stem, which serves all non-past functions, to represent future time. However, the uses and meanings of *قد* (*qad*), 'sometimes augmented to *laqad*' (Dahl & Talmoudi 1979), are more complex.⁶⁰ Combined with the p-stem, it expresses uncertainty regarding events not yet completed, much like the English modal auxiliary

⁶⁰ Ryding (2005:450) notes that other augmentations of *qad* are also found.

'may'. With the s-stem, however, the sense is one of certainty and completeness, thus '[i]f one wishes to emphasize that the action is complete one may prefix the particle قد *qad* or لقد (*laqad*) to the perfect' (Cowan 1958:56), although Wright (1967:I.286) allows that '[i]t also serves to mark the position of a past act or event as prior to the present time or to another past act or event, and consequently expresses merely [the English] *Perf.* or *Pluperf.*'. Although Dahl & Talmoudi (1979) argue that *qad* has a pragmatic evidential function and regard Comrie's representation of it as an explicit perfect marker as misleading, it undoubtedly has aspectual function also and I will proceed along with Badawi et al. (2004:366-367), who claim that '*qad* reinforces the perfective aspect of [the s-stem] verb form'. Thus I will treat the *qad* + s-stem construction as both explicitly past and explicitly perfective, in the sense in which perfectivity views the situation from outside as a whole, that is it 'involves lack of explicit reference to the internal temporal constituency of a situation, rather than explicitly implying the lack of such internal temporal constituency' (Comrie 1976:21). In example (149), the particle *qad* followed by an s-stem verb has thus been glossed as perfective:

(149) قد كتبت الرسالة

qad katab-tu r-risāla

PFV write;PST-1SG DEF-letter

'I have written the letter'

In similar fashion, although I regard the p-stem verb when used by itself as not specifically marked for imperfectivity, when used together with the s-stem of the copula

verb كان (*kāna*) a past situation is represented and marked as imperfective, i.e. there is 'explicit reference to the internal temporal structure of a situation, viewing a situation from within' (Comrie 1976:24). Thus this construction, much like the French *imparfait*, expresses past continuous/progressive and past habitual/iterative situations:

(150) كانت ترتدي قميصاً أزرق

kān-at tartadī qamīS-an 'azraq

be;PST-3FSG wear;NPST.3FSG-IND shirt-ACC.INDF blue;M

'She was wearing a blue shirt'

(151) كان يعمل في المطبخ

kān-a ya ʿmal-u fī l-maTbakḥ

be;PST-3MSG work;NPST.3MSG-IND in DEF-kitchen

'He used to work in the kitchen'

(after Ryding 2005:447)

Implicit and explicit realisations of grammatical aspect will be encountered when examples demonstrating the interaction with lexical aspect are examined in section 8.4.

8.3 Vendler's aspectual categories

The most influential work in the categorisation of verbs according to lexical aspect is a chapter in Vendler (1967:97-121),⁶¹ which establishes four 'time schemata' for English verbs on the basis of how they respond to the progressive and whether the events they describe are bounded. In stating that 'the use of a verb may ... suggest the particular way

⁶¹ First published in a substantially similar article as Vendler (1957).

in which that verb presupposes and involves the notion of time' (Vendler 1967:97), he is, without pre-empting a later terminology,⁶² presenting the existence and relevance of aspect as integral to a verb's entry in the lexicon and implying that all verbs in the language may be attributed to a small and finite set of aspectual categories. Olsen (1997:11) claims that 'all languages have lexical aspect' and I will hold as *a priori* that it is therefore possible to construct a model along the lines of Vendler's schemata which is applicable to MSA.

Verkuyl (1993) examines Vendler's scheme in some detail, referring to other philosophical works by Ryle (1949) and Kenny (1963), who also draw on Aristotle, and to later adaptations of Vendler by Mourelatos (1978), Dowty (1979), Hoeksema (1984)⁶³ and others. As a linguist rather than a philosopher, Verkuyl (1993:33-34) argues that Vendler 'did not distinguish well between criteria based on (some sort of) agentivity and criteria based on purely temporal properties of situations'. Nevertheless, Vendler's categories have been and continue to be foundational to this field, with subsequent work variously extending, reducing or modifying Vendler's scheme and either redefining or renaming the parameters upon which distinctions are made. The following English examples illustrate Vendler's categories:

- | | |
|---|------------------|
| (152) Tom loves football. | (STATE) |
| (153) Bruce is running. | (ACTIVITY) |
| (154) Harry constructed a model aircraft. | (ACCOMPLISHMENT) |
| (155) Emily recognised James. | (ACHIEVEMENT) |

62 Vendler (1967:97) refers to 'finer aspects' of time reference, but is not using 'aspect' in the technical sense.

63 Published as Hoeksema (1985).

Verkuyl (1993:65) identifies Vendler's underlying parameters as 'process' and 'definiteness', representing them as equipollent features [\pm definite] and [\pm process], i.e. they are either present or absent (Table 57).

	[- process]	[+ process]
[- definite]	STATE	ACTIVITY
[+ definite]	ACHIEVEMENT	ACCOMPLISHMENT

Table 57: Verkuyl's analysis of Vendler's categories

However, there are limitations to Vendler's scheme, among them the failure to take account of compositionality. Thus the verb in (153), which is ambitransitive, can be rendered an ACCOMPLISHMENT⁶⁴ by the addition of a direct object (156):

(156) Bruce is running the Edinburgh marathon. (ACCOMPLISHMENT)

The difference between (153) and (156) is one of telicity: the latter has a built-in endpoint, whereas the former does not. We might therefore allow that the English verb 'to run' has two lexical entries, one an intransitive ACTIVITY and the other a transitive ACCOMPLISHMENT. However, example (157) demonstrates that it is not the verb's transitivity which determines telicity:

(157) Bruce is running marathons regularly. (ACTIVITY)

⁶⁴ From this point, terms denoting Vendler's categories will be rendered in capitals to indicate this usage.

With an indefinite, unspecific direct object, the situation is once again atelic, thus an ACTIVITY. If this is unclear, it will be helpful to imagine each situation interrupted by some event. Thus we can imagine the following scenarios:

(158a) Bruce was running marathons regularly when injury forced him to retire from the sport.

(158b) Bruce ran marathons regularly.

(159a) Bruce was running the Edinburgh marathon when he retired injured half-way.

(159b) Bruce ran the Edinburgh marathon.

Clearly, if (158a) is true then (158b) is also true: (158a) entails (158b). However the equivalent entailment does not apply to (159a-b), as the expected completion or telic endpoint was never reached due to the situation terminating early. Thus, compositional aspect interacts with lexical aspect for this and other verbs, apparently cutting across categorisations on Vendler's scheme.

Is an analysis therefore possible which accounts for compositional aspect and yet recognises inherent aspect in a verb's lexical specification? This was one of the issues confronting me in my search for a suitable aspectual model for MSA, along with the challenge presented by a plethora of proposed aspectual properties, their oppositions and interactions.

imperfective	perfective
continuous	habitual
progressive	non-progressive
dynamic	stative
durative	punctual (momentaneous)
telic	atelic
semelfactive	iterative (repetitive)
resultative	non-resultative

Table 58: Some aspectual oppositions (Comrie 1976, Bache 1982)

In Table 58 is given a selection of the most used terminology, presented as opposing pairs. However, many monographs and papers have been devoted to the subject of aspect, thus other scholars mention further properties or rename them according to some nuance. Thus, for example, punctual may be renamed as momentaneous or iterative as repetitive. Furthermore, many of these aspectual properties interact or are sub-divisions of another category. Complicating the issue further is that instead of simple oppositions, related aspect features may be represented, for example, as stative against non-stative and dynamic against non-dynamic, instead of merely in opposition to one another.

Thus a suitable model with which to examine derivationally realised lexical aspect in MSA must explain how lexical aspect features interact with grammatical aspects and tenses, possess a logical structure capable of comprehension, application and if necessary extension, and have no major inconsistencies. With this in mind I have examined in some detail the scheme proposed by Olsen (1997)⁶⁵, which builds upon Vendler, and have found it to meet these criteria.

⁶⁵ Also employed by Mughazy (2005) in his examination of lexical aspect in Egyptian Arabic.

8.4 Olsen's scheme

8.4.1 Overview

In her introduction Olsen writes:

Given the variety of lexical, grammatical, semantic, and pragmatic elements contributing to the interpretation of aspect, it is not surprising that analyses ... differ widely. The variation between these studies masks the relations among lexical and grammatical aspect phenomena. Furthermore, few (if any) theories provide an explanatory account of the relation between aspect and tense and the tendency for each, in the absence of the other, to acquire default temporal interpretations resembling those generally assigned to the other. (Olsen 1997:3)

Thus Olsen's work addresses these issues, adopting a scheme in which 'the lexical aspect classes are not primitives, but are generally assumed to represent clusters of values for lexical aspect features' (Olsen 1997:11). Moreover, she presents these features together with those relating to grammatical aspect and tense as privative: instead of equipollent features, such as [+dynamic] in opposition with [-dynamic], Olsen's marked features contrast with absence of marking for that feature. Thus, for example, a verb is either marked [+dynamic] or is unmarked for dynamicity, which we may represent as [Ødynamic]. This distinction between being marked as [-dynamic] and being designated as unmarked [Ødynamic] allows a verb to be interpreted as dynamic even if not marked [+dynamic]. Thus the concept of privative features permits a verb to function flexibly in those properties for which it is not marked, so allowing for the compositional aspect we have already encountered and enabling pragmatic interpretations in context. Thus Table

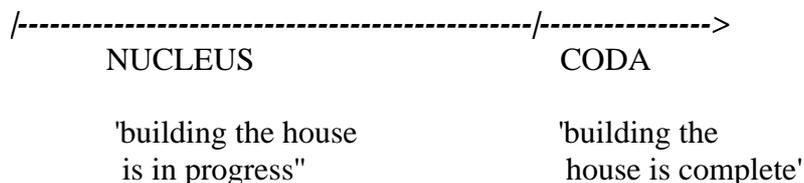
59 indicates the seven privative features recognised by Olsen, though it should be noted that not all languages employ all these marked features and they may place restrictions on which ones occur together.

LEXICAL ASPECT		
[+durative]	[+dynamic]	[+telic]
GRAMMATICAL ASPECT		
[+perfective]	[+imperfective]	
TENSE		
[+past]	[+future]	

Table 59: Olsen's privative features

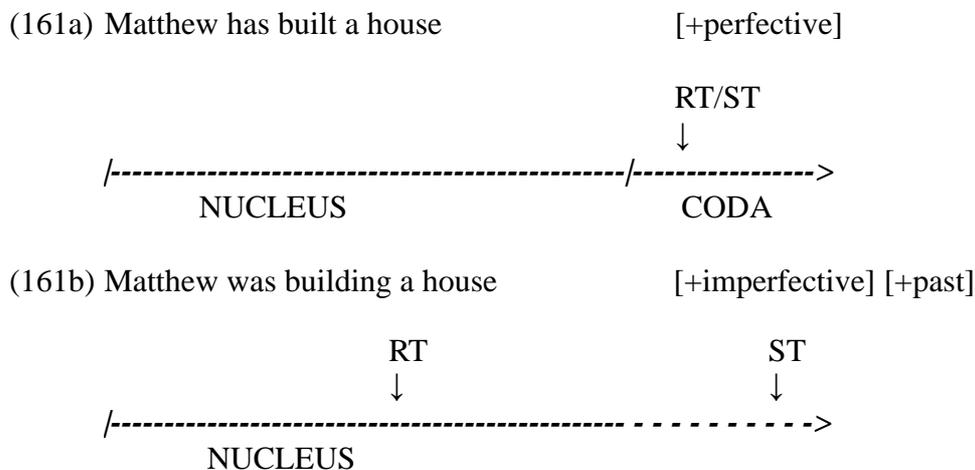
Olsen also describes situations as having temporal structure and she uses the concepts of 'nucleus' and 'coda' borrowed from phonological analysis of syllable structure. Thus the situation described by a verb may have two distinct phases, such as in example (160):

(160) Matthew built a house



The horizontal line in the event diagram is a time line representing the situation, running from past to future, left to right. If we 'drop in' at any point during the nucleus phase, we can say that building the house is in progress. However, there comes a distinct point in time at which completion occurs, and for any time after that if we drop in in the same

way it is no longer true to say that building the house is in progress, but it is true to say that building the house is complete. Regarding grammatical aspect, Olsen's scheme maintains that if a verb is marked as [+perfective] it makes reference to the coda phase, whereas if it is marked [+imperfective] it makes reference to the nucleus phase and if unmarked for both features it may refer to either. There are two constructions in English which mark [+perfective] and [+imperfective]: the perfect aspect, perhaps most concisely defined as a past event with present relevance (Comrie 1976:52),⁶⁶ and the progressive aspect. Note that both constructions are realised in English by an auxiliary verb plus a participle: *have* + *V-ed* for the perfect and *be* + *V-ing* for the progressive. We may compare the interactions of grammatical aspect with the time line in (161a-b):



In the first time line (161a), the [+perfective] marked verb points at the coda. ST represents the speech time, i.e. the time at which the utterance is made. For the English present perfect, this coincides with RT, the reference time. At this time the coda situation

⁶⁶ Strictly this is the present perfect, although the auxiliary in the perfect construction may also have past or future marking, so 'relative present relevance' would be a more accurate description.

holds, that is it is true to say 'building the house is complete' and the nucleus situation 'building the house is in process' no longer holds: it is over, though by implication it must have preceded the coda phase. Thus (162) is not a valid utterance, unless we are using the dissonance for some sort of pragmatic effect like irony.

(162) *Matthew has built a house and he is still in the process of building it.

The second time line (161b) employs the past progressive, marked [+imperfective] and [+past]. Note that RT (reference time) now precedes ST (speech time), as the situation is located by tense in the past. However, RT now points at the nucleus phase and it is impossible to judge from the sentence whether or not the coda phase (in which building is complete) has been entered by ST or not. Thus we could continue the sentence in any of the following ways:

(163a) Matthew was building a house when we met last year but he hasn't finished building it yet.

(163b) Matthew was building a house when we met last year and he finished building it today.

(163c) Matthew was building a house when we met last year but I don't know whether he has finished building it yet.

(163d) Matthew was building a house when we met last year but he will never finish building it.

It is as if the coda, although normally expected for a verb of this lexical category, is

completely invisible to the imperfective verb, since it hasn't happened yet. In fact, the verb 'to build' is one of Vendler's ACCOMPLISHMENTS: it has a definite or bounded endpoint. Hence in Olsen's description it manifests a meaningful coda phase, which she associates with a marked [+telic] feature. ACCOMPLISHMENTS in Olsen's scheme are also marked with the features [+dynamic] and [+durative], that is 'building' involves a changing situation which happens over a period of time. Olsen views these as nucleus features: they affect only that phase of event time and how it proceeds.

Table 60 shows how Olsen characterises Vendler's categories in terms of the three privative features relevant to lexical aspect. She maintains that a verb must be minimally [+dynamic] or [+durative], i.e. it must have a nucleus marked with one or both of these features, but that the [+telic] feature and therefore the coda are optional. This leaves two other allowable combinations, and Olsen extends Vendler's classes to include SEMELFACTIVES,⁶⁷ which are single actions presented as punctual, hence [+dynamic] but not [+durative] and with no built-in resulting endpoint, for example 'sneeze' or 'hit'. She also explores what some have called 'stage-level states' which would be marked [+durative] and [+telic], but she remains doubtful whether they exist in English (Olsen 1997:48-49).⁶⁸

67 Heard (1827:142) introduces the term 'semelfactive' as expressing 'the sudden and single occurrence of an action', although it is used by Comrie (1976:42) to contrast specifically with 'iterative'. Comrie also considers 'semelfactive' as a telic aspectual category with an endpoint. I will henceforth adopt Olsen's use of the term throughout.

68 See section 8.4.2.6 for arguments against recognising the validity of the category of STAGE-LEVEL STATE.

CATEGORY	NUCLEUS	CODA
STATE	[+durative]	
ACTIVITY	[+durative] [+dynamic]	
ACHIEVEMENT	[+dynamic]	[+telic]
ACCOMPLISHMENT	[+durative] [+dynamic]	[+telic]
SEMELFACTIVE	[+dynamic]	
<i>STAGE-LEVEL STATE?</i>	<i>[+durative]</i>	<i>[+telic]</i>

Table 60: Olsen's extended characterisation of Vendler's categories

Having understood the basic principles of Olsen's scheme, which she develops with particular reference to English and Koine Greek, we may now investigate its applicability to MSA.

8.4.2 Application to MSA

I will proceed to examine each of the categories from Table 60 and their interactions with perfective and imperfective grammatical aspects in order to demonstrate the validity of Olsen's analysis to MSA. I will adhere to Olsen's terminology as far as possible, though while conscious of her reasons for doing so, I have not found it necessary to distinguish deictic centre (C) from speech time (ST) in the event time diagrams here. Many examples of actual language have been obtained from *arabiCorpus* or the World Wide Web, while others were tested on three native Arabic speaker informants by questionnaire.⁶⁹ A guide to the abbreviations and conventions used in the examples and event diagrams is found on page ix.

⁶⁹ Full questionnaire data and methodology are contained in Appendix III.

8.4.2.1 States

A STATE verb is marked as follows:

Nucleus: [+durative]

Coda: [Øtelic], i.e. unmarked.

We will take as an example the following pattern III verb:

(164) جاور [III]

jāwara

'to adjoin' (+ d.o.)

All native speaker informants found this verb to be compatible with the imperfective past construction:

(165a) [+imperfective] [+past]

كان بيتنا يجاور المكتبة {YYY}

kān-a bayt-u-nā yujāwir-u l-maktaba

be;PST-3MSG house-NOM-POSS.1PL adjoin;NPST.3MSG-IND DEF-library

'Our house adjoined / used to adjoin the library' / * 'Our house was adjoining the

library'

(Questionnaire:1)

Recall that a verb marked as [+imperfective] references the nucleus phase, thus in the event diagram (165b), the reference time RT intersects with the nucleus marked as

(166) جاوز

jāwaza

'to exceed, surpass' (+ d.o.)

This verb is capable of being interpreted dynamically in (167), whilst in (168) the situation is clearly static (non-dynamic), thus it is consistent with Olsen's designation of [+durative] [Ødynamic] for verbs of STATE, i.e. absence of the privative feature [+dynamic] allows both dynamic and non-dynamic readings.

(167) [+imperfective] [+past]

كان عدد سكان القاهرة يجاوز الآن 21 مليون شخص

kān-a *ʿadad* *sukkān-i* *l-qāhira* *yujāwiz-u*

be;PST-3MSG number inhabitant;PL-GEN DEF-Cairo surpass;NPST.3MSG-IND

l-'ān *21 milyūn* *shakhS*

DEF-time 21 million person

'The population of Cairo was now exceeding / growing beyond 21 million people'

(arabiCorpus:GEN1997:17420)

(168) [+imperfective] [+past]

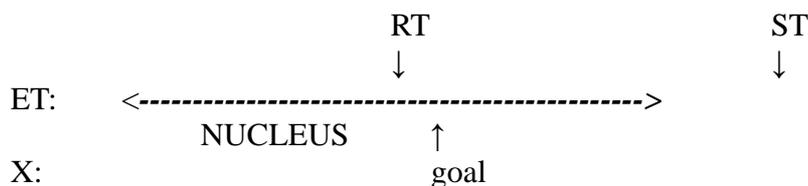
ما كان يجاوز السبعة والثلاثين من العمر

mā *kān-a* *yujāwiz-u* *s-saba* عا *wa-th-thalāth-īn*
 NEG be;PST-3MSG surpass;NPST.3MSG-IND DEF-seven and-DEF-thirty-ACC
min *al-عumr*
 from DEF-age

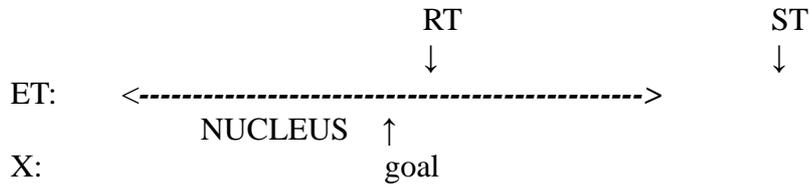
'He was not more than thirty-seven years of age' (arabiCorpus:GEN1997:33758)

Note also that (167) also demonstrates that the verb is [Øtelic] as it does not reach an endpoint in coda. Rather, the sentence includes a goal which is external to the verb itself, namely the figure of '21 million', and growth can continue indefinitely past this external goal, which is achieved at an unspecified point during event time nucleus and is thus located in a range which includes the reference time 'now', but is not ordered with respect to RT. Thus any of the three following event diagrams is possible for (167), although it is pragmatically likely that RT and goal are close in time, though not coincident.

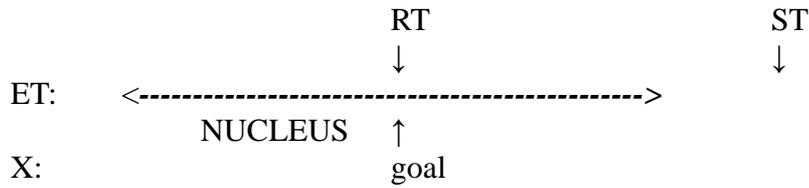
(169a) goal about to be reached at RT



(169b) goal has just been reached at RT



(169c) goal coincidental with RT



8.4.2.2 Activities

An ACTIVITY verb is marked as follows:

Nucleus: [+durative] [+dynamic]

Coda: [Øtelic], i.e. unmarked.

A great many verbs in pattern III are in this category, for example:

(170) قاتل

qātala

'to fight (with)' (+ d.o.)

The s-stem verb in (171a) is unmarked for grammatical aspect as already noted, allowing flexibility of interpretation. However, the verb's nucleus features [+durative] and [+dynamic] require that the situation described held over a period of time (continuous) and was progressive, i.e. (171a) entails that (171b) is also a valid statement:

within the time-frame of a specific month:

(172a) [+imperfective] [+past]

كانوا يقاتلون اليهود منذ نونبر 1947

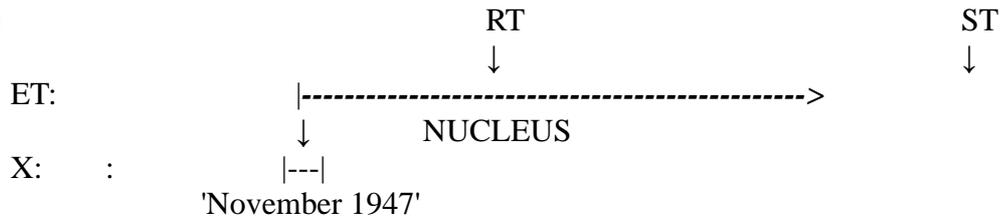
kān-ū *yuqātil-ū-n* *al-yahūd* *mundhu nuwanbir 1947*

be;PST-3MPL fight;NPST.3M-PL-IND DEF-Jews since November 1947

'They were fighting / had been fighting the Jews since November 1947'

(arabiCorpus:514isslamic3503.txt)

(172b)



Note also that the Arabic s-stem [+past] is not incompatible with durative adverbials, all informants agreeing on the grammaticality of (173a), in which the beginning and end of the situation are temporally defined relative to one another, as illustrated in the event diagram in (173b):

(173a) [+past]

قاتل أحمد صديقه طوال عشرين دقيقة

{YYY}

qātal-a *'aHmad Sadīq-a-hu*

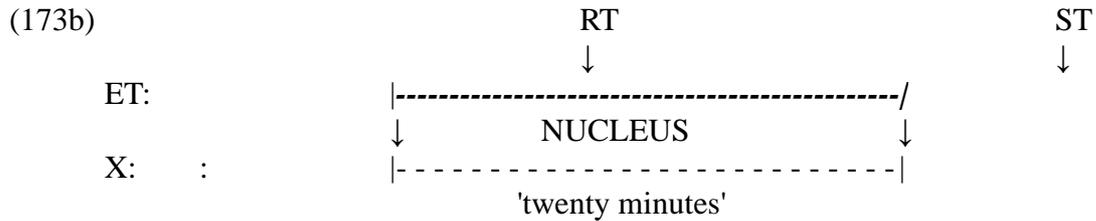
Tiwāla *ʿashrīn* *daqīqa*

fight;PST-3MSG Ahmad friend-ACC-POSS.3MSG

during twenty-ACC minute

'Ahmad fought his friend for twenty minutes'

(Questionnaire:6)



However, although the end of the situation may be externally bounded by such an adverbial, it should be noted that the verb itself has no built-in endpoint, i.e. the situation might have continued longer. In (174a) the verb is explicitly marked as [+perfective] by the particle *قد* (*qad*), though I take the view that the s-stem in this perfective role is no longer explicitly marked as [+past], since a present perfect interpretation is possible:

(174a) [+perfective] [Øpast]

قد قاتلوا تاريخياً من أجل عدم الربط بين التأييد لإسرائيل وبين الهجرة لإسرائيل

qad qātal-ū tārīkhīy-an min_ʿajl ʿadam-i r-rabT

PFV fight;PST-3MPL historical-ACC.INDF because_of lack-GEN DEF-connection

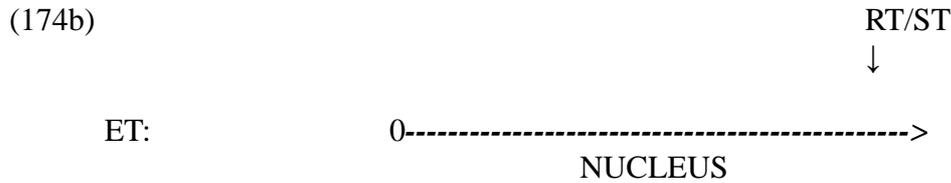
bayna t-taʿyīd li-ʿisrāʿīl wa-bayna l-hijra li-ʿisrāʿīl

between DEF-support for-Israel and-between DEF-emigration to-Israel

'Historically they have fought on account of the lack of connection between

support for Israel and emigration to Israel' (arabiCorpus:archive22843)

The situation is represented in event diagram (174b) as ongoing at the present time where RT and ST coincide:



While it is certain that the [+durative] [+dynamic] nucleus features held for all points in past time since the implied commencement of the situation, hence (174a) entails (174c), the truth of (174d) is also a possibility. The verb is unspecified for telicity [Øtelic], so there is no coda phase, no natural intersection with the perfective and hence no inherent endpoint. An arbitrary endpoint is possible, i.e. they may have finished fighting before RT is reached (174c), but not implicit, as they may still be fighting (174d):

(174c) ... كانوا يقاتلون من أجل عدم الربط ...

kān-ū yuqātil-ū-n min_ajl ʕadam-i r-rabT

be;PST-3MPL fight;NPST.3M-PL-IND because_of lack-GEN DEF-connection

'They were fighting because of the lack of connection ...'

(174d) ... ما زالوا يقاتلون من أجل عدم الربط ...

mā zāl-ū yuqātil-ū-n min_'ajl ʕadam-i r-rabT

NEG cease;PST-3MPL fight;NPST.3M-PL-IND because_of lack-GEN DEF-connection

'They are still fighting because of the lack of connection ...'

8.4.2.3 Accomplishments

An ACCOMPLISHMENT verb is marked as follows:

Nucleus: [+durative] [+dynamic] Coda: [+telic]

The following verb will serve as an illustration:

(175) بنى

banā

'to build' (+ d.o.)

An ACCOMPLISHMENT verb, like an ACTIVITY, has both [+durative] and [+dynamic] features in the nucleus, thus (176a) implies that (176b) is also valid for the nucleus phase, cf. (171a-b):

(176a) [+past]

بنى لنفسه بيتا

banā

li-nafs-i-hi

bayt-an

build;PST;3MSG

for-self-GEN-POSS.3MSG

house-ACC.INDF

'He built himself a house'

(arabiCorpus:GEN1996:11400)

(176b) [+imperfective] [+past]

كان يبني بيتا

kān-a *yabnī* *bayt-an*

be;PST-3MSG build;NPST.3MSG house-ACC.INDF

'He was building a house'

Unlike ACTIVITY verbs, ACCOMPLISHMENT verbs have the [+telic] coda feature also, such that there is a built-in endpoint. Recalling the definition of perfectivity as an outside view of the situation as a whole, the perfective interpretation of (176a) is that it entails (176c), i.e. in (176a) the endpoint is a completed house.

(176c) بيته مبني

bayt-u-hu *mabnī*

house-NOM-POSS.3MSG build;PPT

'His house is built'

Whether or not the endpoint is reached is irrelevant for the validity of the [+telic] feature, although the perfective reading is often supplied as a matter of pragmatics, the assumption being that an imperfective verb would have been employed had the process still been ongoing, hence the optionality of the perfectivising particle *قد* (*qad*). However, since the s-stem verb itself is not marked for grammatical aspect, either the nucleus or the coda phase can be the locus of the intersection of RT with ET, thus (176d) represents

that it draws attention to the nucleus phase of an ACCOMPLISHMENT which is marked for these features, effectively locating RT in the nucleus as in (178), which must therefore correspond to the imperfective event diagram (176d).

(178) بنى بيته ببطء

<i>banā</i>	<i>bayt-a-hu</i>	<i>bi-buT'</i>
build;PST;3MSG	house-ACC-POSS.3MSG	with-slowness

'He built his house slowly'

In contrast, an adverbial phrase may compositionally supply perfectivity, emphasising completion, i.e. the [+telic] result, and locating RT in the coda as in (179a), which presents an ordered timeline (179b) consisting of building process (nucleus) followed in order by completion (coda), earthquake and utterance (ST):

(179a) بنى بيته قبل الزلزال

<i>banā</i>	<i>bayt-a-hu</i>	<i>qabla</i>	<i>z-zilzāl</i>
build;PST;3MSG	house-ACC-POSS.3MSG	before	DEF-earthquake

'He built his house before the earthquake'

(179b)

		RT	ST
		↓	↓
ET:	0----->		
	NUCLEUS	CODA	
X:			↑
			'the earthquake'

Of course, specific [+perfective] verbal marking may also be employed to place the focus not upon the process of building but on the result (180a):

(180a) [+perfective]

قد بنى فيها البريطانيون إبان الاستعمار منازل لمديري الشركات الكبيرة

qad banā fī-hā l-barīTānīy-ūn 'ibāna l-'isti ʿmār

PFV build;PST;3MSG in-OBJ.3FSG DEF-British-PL.NOM during DEF-colonial_rule

manāzil li-mudīr-ī sh-sharik-āt-i l-kabīr-a

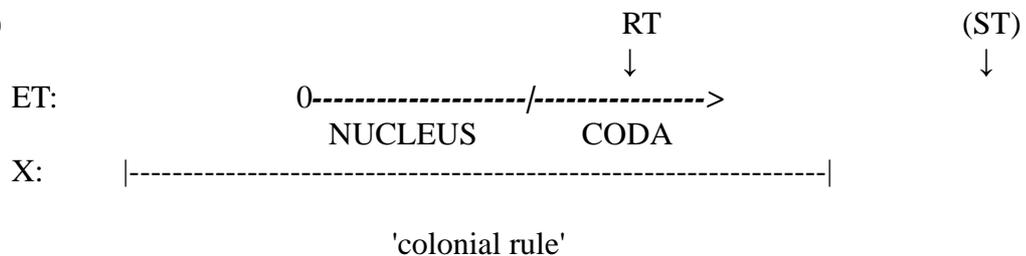
home;PL for-director-PL.GEN DEF-company-PL-GEN DEF-big-F

'During the colonial rule, the British had built homes there for the directors of

big companies'

(arabiCorpus:NEW1996:32749)

(180b)



Thus in (180a-b) the emphasis is on the outcome that homes were completed at some point prior to ST, since [+perfective] marking ensures that RT intersects with ET at the coda. The temporally extensive adverbial 'during the colonial rule', in combination with [+perfective] grammatical aspect and [+telic] lexical aspect, places the entire event within an extended and externally defined period of time X, ensuring the interpretation that the situation commenced and ran to completion during that period, i.e. that nucleus

and coda are both located within it. Thus at some otherwise undefined time RT during the external situation ('colonial rule'), the nucleus (the process of building) has been completed and the coda holds and we can confidently assert both (180c) and (180d):

(180c) [+imperfective] [+past]

كان البريطانيون يبنون منازل إبان الاستعمار

kān-a l-barīTānīy-ūn yabniy-ū-n manāzil 'ibāna

be;PST-3MSG DEF-British-PL.NOM build;NPST.3M-PL-IND home;PL during

l-'isti ʕmār

DEF-colonial_rule

'The British were building homes during the colonial rule'

(180d) انتهى البريطانيون من بناء منازل إبان الاستعمار

intahā l-barīTānīy-ūn min binā' manāzil 'ibāna

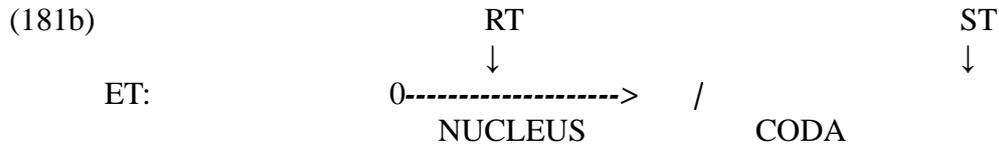
finish;PST.3MSG DEF-British-PL.NOM from building[VN:I] home;PL during

l-'isti ʕmār

DEF-colonial_rule

'The British finished building homes during the colonial rule'

In my translation of (180a), the choice of the past perfect illustrates that pragmatic interpretation of the Arabic perfective construction with *قد* (*qad*) is required in order to place RT with respect to ST, due to the lack of marking for tense [Øpast]. I could instead have translated with the English present perfect (ST coincident with RT), though in this



The imperfective intersects with ET during the nucleus, marked as [+durative] [+dynamic], representing the situation as a process, comparable with ACTIVITY verbs which have no coda. Effectively the imperfective viewpoint has no access to the [+telic] coda, which is posterior (future) relative to RT, beyond the implication that this is the logical endpoint if the process is not interrupted before completion. Thus the situation is presented as incomplete at RT: it is still in process, and may or may not reach its logical endpoint in coda – there is simply no way of telling in the absence of evidence external to the utterance, whether linguistic or extra-linguistic. In view of the indefinite plural direct object, pragmatic interpretation allows for three possible outcomes subsequent to RT in (181a): (a) none of the homes were completed; (b) all of the homes were completed; (c) only some of the homes were completed. If (a) is the actual outcome, the statement in (181c) is false.

(181c) [+perfective]

قد بنى [مجلس الإعمار] منازل ومسكن

qad banā [majlis-u l-'i ʕmār] *manāzil*

PFV build;PST;3MSG council-NOM DEF-development[VN:IV] home;PL

'[The development council] has built homes'

Hence, we can deduce that for an ACCOMPLISHMENT the imperfective (181a) does not entail the perfective (181c). This lack of entailment is characteristic of telicity.

8.4.2.4 Achievements

An ACHIEVEMENT verb is marked as follows:

Nucleus: [+dynamic] Coda: [+telic]

The following verb in pattern VIII will be used as an example:

(182) انتصر على

[i]ntaSara (عalā)

'to win' / 'to triumph over' (+ i.o.)

Firstly, it will be helpful to demonstrate that this verb can be used in the imperfective past:

Pragmatically, we recognise that such a triumph is unlikely to have been instantaneous: there must have existed a durative situation prior to the coda, though this pre-existing situation is not necessarily that described by the event 'triumph', only a situation implied by it. This is shown more clearly by changing the adverbial phrase (184d-e):

(184d) [+past]

انتصر المجاهدون المسلمون على القوات الصينية في خلال أسبوعين

intaSar-a *l-mujāhid-ūna* *l-muslim-ūn* *عalā*

triumph;PST-3MSG DEF-warrior-MPL.NOM DEF-Muslim-MPL.NOM over

l-quww-āt-i *S-Sīnīy-a* *fī* *khilāl* *'usbūع-ayn*

DEF-force-PL-GEN DEF-Chinese-F in interval week-DU.GEN

'The Muslim warriors triumphed over the Chinese forces in[side] two weeks'

(184e)

RT

ST

↓

↓

ET:

||----->
NUCLEUS CODA

X:

|-----|
'two weeks [of fighting]'

A period of fighting lasting two weeks is now implied (the pre-existing situation, represented here as X, an event external to the ET), which culminates in the triumph of the Muslim warriors (the situation pertinent to the ET described). However, (184e) does not entail (184f):

emphasis on the resulting endpoint rather than the transition to the endpoint, in this example focusing not upon the triumph itself but upon its continuing relevance at RT. It is irrelevant in this example whether the nucleus is durative or punctual, which is to be expected since presence or absence of [+durative] is a nucleus feature with no bearing upon the coda. It was noted in (181a-c) that for a [+durative] ACCOMPLISHMENT, the imperfective does not entail the perfective, since the coda, although the natural endpoint, may never actually be reached. Likewise, (185c) does not entail (185a):

(185c) [+imperfective] [+past]

كانت الجزائر تنتصر على الإرهاب

kān-at al-jazā'ir tantaSir-u ʿalā l-'irhāb

be;PST-3FSG DEF-Algeria triumph;NPST.3FSG-IND over DEF-terrorism[VN:IV]

'Algeria was triumphing over terrorism'

In contrast with an ACCOMPLISHMENT, however, since a [Ødurative] verb is uncertain as to durativity, it is also true that for an ACHIEVEMENT the perfective (185a) does not entail the imperfective (185c). To clarify, consider an Olympic track race: the athlete who takes the gold medal may have been ahead of the field for some time before reaching the finishing line, in which case the athlete would have been said to have been winning the race approaching the line; however, if the gold medal winner comes from behind to take the race on the line in a photo-finish, the act of winning is a punctual event and it would not be true to say that the athlete had at any point been winning prior to the actual victory.

8.4.2.5 Semelfactives⁷¹

A SEMELFACTIVE verb is marked as follows:

Nucleus: [+dynamic] Coda: Ø

The following pattern I verbs are typical of SEMELFACTIVES:

(186) عطس

ʕaTasa

'to sneeze'

(187) سعل

saʕala

'to cough'

SEMELFACTIVES, being [Ødurative], are most naturally interpreted as punctual, i.e. the nucleus is presented as having no duration (188a):

(188a) [+past]

عطس الرجال دفعة واحدة عطسة

ʕaTas-a

r-rijāl

dufʕat-an

wāhid-a

ʕaTsa

sneeze;PST-3MSG

DEF-man;PL

instance-ACC.INDF

one-F

sneeze

'The men sneezed all at once'

(arabiCorpus:FisherCastle12:20)

⁷¹ This category is absent from Mughazy's (2005) account of Olsen's scheme and he apparently discounts its existence in Egyptian Arabic.



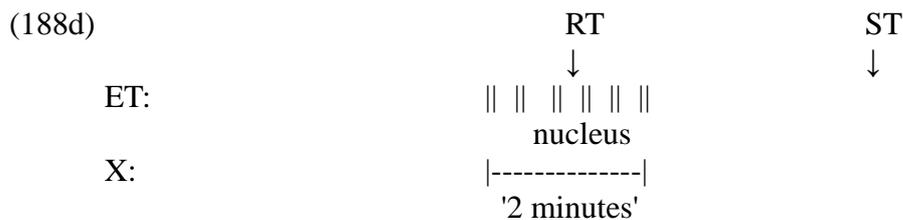
As for the ACHIEVEMENT verb in (184a-c), it is clear that a sneeze is not literally instantaneous. Nevertheless, it is of sufficiently short duration that when combined with a temporally extensive adverbial phrase, the meaning is most naturally pragmatically determined as iterative rather than durative, i.e. multiple sneezing events (188c):

(188c) [+past]

عطس الرجل في خلال دقيقتين

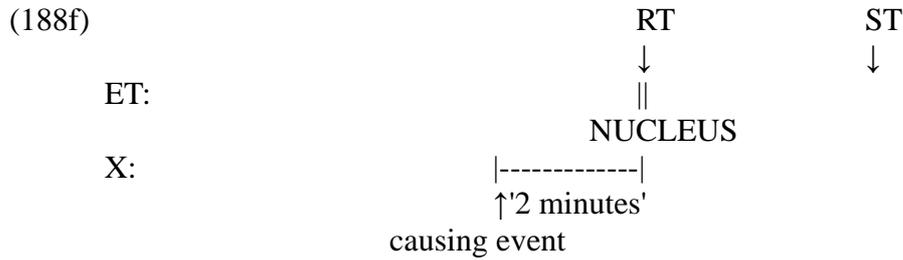
<i>aTas-a</i>	<i>r-rajul</i>	<i>fī</i>	<i>khilāl</i>	<i>daqāqat-ayn</i>
sneeze;PST-3MSG	DEF-man	in	interval	minute-DU.GEN

'The man sneezed for two minutes'



However, it may be possible to imagine an alternative reading such as (188e), given a suitable causing event in the context, suggesting an event diagram (188f) which is essentially the same as (188b).

(188e) 'The man sneezed within two minutes'



Note that the English adverbial phrases in the translations do not permit such ambiguity. In contrast, use of the imperfective past (189a) with a SEMELFACTIVE forces a non-punctual, hence iterative (or possibly habitual), interpretation of the nucleus, with which RT must intersect. Thus, the event diagram (189b) is equivalent to (188d), except that the duration of the iterative situation is not bounded by an external adverbial phrase.

(189a) [+imperfective] [+past]

ذات يوم كان يسعل بعنف

dhāt yawm kān-a

one_day

be;PST-3MSG

yas ʿul-u

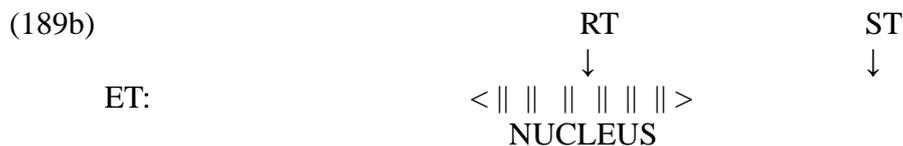
cough;NPST.3MSG-IND

bi-ʿanf

with-violence

'One day, he was coughing violently'

(arabiCorpus:061999WRIT03)



It may be significant that no examples were found in the corpus for either of these SEMELFACTIVE verbs with the perfective قد (*qad*) construction. There is no [+telic] feature for the perfective to intersect with in coda and it is therefore likely that it is

rendered superfluous. However, if we form a sentence using the construction, we can use this diagnostically.

(190) [+perfective]

قد سعل بعنف

qad sa ʕal-a bi-ʕanf

PFV cough;PST-3MSG with-violence

'He [has] coughed violently'

It is clear that the imperfective (189a) does entail the perfective (190), which is confirmation that the verb is not marked as [+telic], cf. ACTIVITIES. Conversely, to assert that (192) is true on the basis of (191) is doubtful at best. This is because SEMELFACTIVE perfectives do not entail the corresponding imperfective, due to the punctual readings permitted by their [Ødurative] status, cf. ACHIEVEMENTS.

(191) [+past]

سعل الرجل مرة

sa ʕal-a r-rajul marrat-an

cough;PST-3MSG DEF-man time-ACC.INDF

'The man coughed once'

(192) [+imperfective] [+past]

كان الرجل يسعل

kān-a *r-rajul* *yas ʕul-u*

be;PST-3MSG DEF-man cough;NPST.3MSG-IND

'The man was coughing'

8.4.2.6 Stage-level states

Olsen (1997:48-50) appears less than convinced that the category of STAGE-LEVEL STATE exists, although the combination is allowable in her scheme, which requires only that '[a] VERB must be minimally [+dynamic] or [+durative]' (Olsen 1997:51), hence the feature marking as follows:

Nucleus: [+durative]

Coda: [+telic]

Passonneau's (1988:47) analysis distinguishes 'transition events', conflating Vendler's ACHIEVEMENTS and ACCOMPLISHMENTS, in which a 'new state or process comes into being as a result of the initial process'. Processes require dynamicity and states are therefore excluded from transition events as they 'have no kinesis, they cannot culminate in new situations'. The argument that without change there can be no inherent endpoint appears thoroughly sound, therefore it is my contention that [+telic] situations must necessarily be [+dynamic] and hence states marked only as [+durative] in the nucleus phase are excluded from being marked [+telic] in the coda.

It is clear, however, that some states are more temporary than others. Compare the following English examples:

(193a) Emma has been pregnant for three months.

(193b) * Emma has always been pregnant.

(194a) Craig has been sick for three months.

(194b) Craig has always been sick.

(195a) Water supplies have sufficed for three months.

(195b) Water supplies have always sufficed.

(196a) ? Daniel has been intelligent for three months.

(196b) Daniel has always been intelligent.

According to Olsen (1997:48-49), the verbal expressions 'be pregnant', 'be sick' and 'suffice' have been variously proposed as examples of STAGE-LEVEL STATES in English, hence marked as [+telic]. However, as the following examples demonstrate, it is precisely the verb categories marked [+telic] which are incompatible with the English perfective *have + V-ed* construction together with a temporally extensive adverbial:

(197) * Andy has built himself a house for three years. (ACCOMPLISHMENT)

(198) * Hannah has won the race for twenty minutes. (ACHIEVEMENT)

(199) Alastair has lived in Scotland for three years. (STATE)

(200) Louise has cycled for twenty minutes. (ACTIVITY)

(201) Henry has coughed for twenty minutes (SEMELFACTIVE)

Since the [+telic] feature is present in (197)-(198), the intersection of RT with ET at the coda specified by the [+perfective] verb requires the interpretation that there was a point

in time prior to RT at which the nucleus phase was completed, thus a temporally extensive adverbial can only refer back to a nucleus which is not being referenced by the perfective. The problem does not exist in (199)-(201), as there is no coda feature to be referred to, hence RT intersects with ET at the nucleus, to which the durative adverbial applies, forcing an iterative interpretation in the case of (201). This is also true of (193)-(195), providing clear evidence that these are STATES like any other. Somewhat paradoxically, although uncontroversially recognised as a STATE, it is 'be intelligent' (196) for which the use of a temporally extensive adverbial is questionable. This leads me to the conclusion that whether any of the above states is more or less temporary is determined pragmatically and not by any lexical feature such as telicity.

No Arabic examples for STAGE-LEVEL STATES will be proposed,⁷² as I have encountered no data to support the existence of verbs in this category and I am in any case convinced by Passonneau's argument on the basis of dynamicity that the category itself has no place in Olsen's scheme. Olsen does, however, observe that Smith's (1991:110) data from Mandarin show 'that "certain stage-level stative predicates" may have ingressive interpretations, implicating a dynamic entrance into the state named by the verb' (Olsen 1997:50). This raises an interesting point, which Olsen does not attempt to pursue here, though she later returns to the subject of ingressives in her chapter on grammatical aspect. Her conclusion is that 'ingressive interpretation (also known as inceptive or inchoative) seems to be based on properties orthogonal to [+imperfective] and [+perfective] aspect' (Olsen 1997:108). However in Chapter 10, using examples from Arabic and English, I will argue that a separate category of verbs with ingressive or

⁷² Mughazy (2005:138) claims the existence of stage-level statives in Egyptian Arabic, also calling them 'recurrent statives' (2005:151). However, I am not convinced that the examples he gives are [+telic].

inceptive interpretation must be established, as a further extension to Vendler's system as explained and expanded by Olsen, and that Olsen's scheme is capable of further expansion to accommodate this new category.

8.5 Summary

We have briefly examined aspectual theory in general and established that MSA exhibits realisations of both morphosyntactic grammatical aspect and lexical aspect. Vendler's (1967) verbal categories have been shown to be applicable to Arabic, through the application of Olsen's (1997) scheme, which extends Vendler's categories and provides a consistent and logical framework within which to examine lexical aspect. With this theoretical model in place we may now examine in more detail the lexical aspect properties of verbs in patterns III and VI, i.e. those with the $C_1\bar{a}C_2$ template sequence.

Chapter 9

Aspectual categorisation of patterns III and VI

Having established that lexical aspect is a valid property in the verbal system of MSA and is manifested in categories of the type proposed by Vendler (1967) and explained in Olsen's (1997) model, we will need to examine whether there is any aspectual consistency within patterns III and VI to establish whether the $C_1\bar{a}C_2$ sequence is indeed an aspectual marker, either for a verbal category or for one or more privative features as defined by Olsen.

9.1 Data

A cursory examination of the verbs in patterns III and VI reveals that ACTIVITY verbs are very common, as exemplified in (202) and (203):

(202)	كان أغلبهم يشاهد التلفزيون	[III]		
	<i>kān-a</i>	<i>'aghlab-u-hum</i>	<i>yushāhid-u</i>	<i>t-tilifizyūn</i>
	be;PST-3MSG	majority-NOM-POSS.3MPL	watch;NPST.3MSG-IND	DEF-television
	'Most of them were watching television'		(arabiCorpus:031399WRIT01)	

(203) ما زال أعضاء مجلس الأمن يتحاورون [VI]

mā zāl-a 'a ʿDā' majlis-i l-'amn

NEG cease;PST-3MSG member;PL council-GEN DEF-security

yataHāwar-ū-n

discuss_together;NPST.3M-PL-IND

'The members of the security council are still carrying on a discussion'

(arabiCorpus:110999OPIN07)

However, there are significant numbers of verbs which appear more properly to be classified as STATES, such as the verb in (204), which we used as an example of a STATE in the previous chapter:

(204) جاور

jāwara (+ d.o.)

'to adjoin (s.th) / be the neighbour of (s.o.)'

Since the imperfective past in Arabic, like the French *imparfait*, cannot make the distinction between the progressive and the habitual (unlike the English constructions *was + V-ing* and *used to + V*), dynamicity cannot be tested on this basis. We may therefore justifiably argue that the ACTIVITY / STATE distinction in MSA is relatively subtle, as any formal testing of this distinction must rely upon assessing compositional compatibility of each verb with certain adverbial phrases.

9.1.1 Verbs of ACTIVITY and STATE

In gathering preliminary lexical aspect data on patterns III and VI from Hans Wehr (1994), I have elected to conflate the ACTIVITY and STATE categories on the basis of their shared privative feature marking, i.e. that they are marked [+durative] and unmarked for telicity [Øtelic]. In order to improve the quality of the data, I have split entries for root consonant combinations where it appears that homomorphic roots give rise to verbs with unrelated meanings, allowing for aspectual variation between homonymous verbs with different root meanings to be recorded. This explains why the total numbers of verbs attributed to patterns III and VI in Tables 61 and 62 are somewhat greater than the raw verb counts quoted in earlier chapters.

	+ [pattern VI]	- [pattern VI]	TOTAL
III = ACTIVITY / STATE	228 (83.2%)	192 (81.0%)	420 (82.2%)
III = OTHER	46 (16.8%)	45 (19.0%)	91 (17.8%)
TOTAL	274	237	511
	Chi-square (χ^2) = 0.42	Probability (p) >0.5 (not significant)	Phi coefficient (Φ) = 0.03

Table 61: Pattern III verbs by aspectual category and co-occurrence

	+ [pattern III]	- [pattern III]	TOTAL
VI = ACTIVITY / STATE	236 (84.6%)	137 (84.0%)	373 (84.4%)
VI = OTHER	43 (15.4%)	26 (16.0%)	69 (15.6%)
TOTAL	279	163	442
	Chi-square (χ^2) = 0.02	Probability (p) >0.8 (not significant)	Phi coefficient (Φ) = 0.01

Table 62: Pattern VI verbs by aspectual category and co-occurrence

As previously, the data here are presented according to whether or not patterns III and VI co-occur for the root, and testing for statistical significance has been applied. The figures reveal remarkable consistency across the two patterns, with the percentages of verbs of ACTIVITY/STATE clearly independent of whether or not the patterns co-occur and averaging 83.2%. That aspect is independent of co-occurrence contrasts with the findings for mutual and reciprocal meanings presented in section 5.2.2.3 and provides a clear indication that lexical aspect, at least for the patterns examined here, is a direct function of derivational morphology. It will also be noted that aspectual categorisation as ACTIVITY/STATE is a more successful description than mutuality is of pattern III (77.6%)⁷³ or reciprocity of pattern VI (64.0%),⁷⁴ all the more so because the data collected for semantic categories were treated conservatively, as discussed in section 5.2.2.1, favouring the traditional hypothesis of mutual-reciprocal meanings for these patterns. However, although the preliminary findings for categorising verbs with the $C_1\bar{a}C_2$ sequence as ACTIVITY/STATE are promising, 16.8% of the verbs in Tables 61 and 62 appear to not be readily attributable to this combined aspectual category.

One question which arises is whether the percentages of verbs obtained from a dictionary survey accurately reflect the extent to which the ACTIVITY/STATE lexical aspect is associated with patterns III and VI in contemporary language use. This is pertinent to the relationship between form and meaning from a psycholinguistic viewpoint, since regular usage will reinforce a speaker's perception of a meaning being associated with the corresponding form. Thus instead of solely relying on a lexical survey, where each verb listed has equal weight in the data no matter whether it is in

73 See section 5.2.2.1

74 See section 5.2.2.2

contemporary use, a corpus survey of all pattern III and pattern VI verbs was undertaken using the online *arabiCorpus* in order to obtain data more representative of actual MSA usage.

9.1.1.1 Corpus data counts - methodology

By searching *arabiCorpus* for pattern III and pattern VI verb forms, two different figures may be obtained: a 'type' count records the different verb forms only once each, no matter how frequently they occur in the corpus, while a 'token' count enumerates every instance of a form in the corpus. Thus a type count includes all verbs which are in common usage and gives them equal weighting, while excluding any verb which is too archaic or otherwise uncommon to be found in the corpus. A token count goes further in that the contribution of any given verb towards the totals, and hence the percentages, is proportional to how commonly it is used. For example, no instances of (205) were found in *arabiCorpus* and it therefore does not contribute to either the type count or the token count. However both (206) and (207) do occur in the corpus, though the latter is 12.5 times more common than the former, thus both contribute one type to the count while the latter contributes 12.5 times as many tokens.

(205) شابه

[III]

shābaha (+ d.o.)

(token count: 0)

'to resemble (s.o. / s.th.)'

- (206) شاكس [III]
shākasa (+d.o.) (token count: 24)
 'to quarrel with (s.o.)'
- (207) تسابق [VI]
tasābaqa (token count: 300)
 'to compete with one another'

Clarification is required of the methodology used to obtain the counts quoted in the above examples and contributing to the data presented in the following section. In order to obtain meaningful comparable data from *arabiCorpus*, I elected to interrogate the database specifically for the p-stem 3rd person masculine singular form of each verb, since it was necessary to identify a string to search for which was unique to the verb in question. Thus for example, had I searched for the pattern III verb *kātaba* ('to correspond [with s.o.]') using the string *kātb* (كاتب) , the search results would not only have returned all s-stem and p-stem instances of the verb in question, but would also have yielded all instances of the pattern VI verb *takātaba* (تکاتب – 'to correspond [together]') as well as the nouns *kātib* (کاتب – 'writing / writer'), *mukātaba* (مکاتبة – 'correspondence') and the broken plural *makātib* (مکاتب – 'libraries / offices'). However by searching for the string *ykātb* (یکاتب) only pattern III verb instances are returned, including all p-stem 3rd person masculine paradigm forms with and without suffixed object pronouns. This is not a perfect solution as there are some anomalies, such as verbs which may pragmatically only occur with feminine subjects⁷⁵ or most often with plural

75 For example *ḥablat* (حبلت – 'she became pregnant')

or dual inanimate subjects (and hence in the 3rd person feminine singular paradigm form). Also, the string search specified will under-represent pattern VI verbs with final radical ﻯ ($y\bar{a}$) where there is an orthographic change when an object pronoun is suffixed, though these are sufficiently rare as to not affect the data significantly. Furthermore it is conceivable that some verbs are over- or under-represented in the p-form compared with the s-form, though I have no data to support such an objection.

In the relatively rare cases where homonymous verbs exist with different aspectual category properties, I have attempted to apportion the token count according to the meanings apparent from the corpus context. To do so with complete accuracy would be a prohibitively time consuming task and thus where instances are numerous I have made judgements based on estimates from a smaller sample.

Finally, some notes on *arabiCorpus* itself. The data were obtained using the 'newspaper' corpus subset⁷⁶ of *arabiCorpus*, interrogated online over a period⁷⁷ during which no additions to the corpus were made. The newspaper corpus was chosen as relatively homogeneous, representative of contemporary usage and less susceptible to archaism, poeticism and colloquialism than literature. By restricting my searches to uniquely specified strings, and with the minor provisos outlined above, I believe that the data generated and presented in the following section are comparable across the entire set of pattern III and pattern VI verbs.

9.1.1.2 Results

Tables 63 and 64 present the counts and percentages for patterns III and VI respectively

⁷⁶ At the time of writing (18 June 2009) approximately 65 million words.

⁷⁷ February 2008.

by type and token. The data reveal that although the range of pattern VI verbs in contemporary usage is comparable to that of pattern III, they are encountered only one-third as often in the corpus texts. Nevertheless there is still remarkable consistency between the percentages of verbs in each pattern which are attributable to the ACTIVITY/STATE category. The figures for the type counts are very close to those obtained from the dictionary search, demonstrating that there is no preferential absence of verbs from the corpus according to the ACTIVITY/STATE lexical aspect category.

	Type	Token
ACTIVITY / STATE	291 (82.2%)	125,314 (91.0%)
OTHER	63 (17.8%)	12,425 (9.0%)
TOTAL	354	137,739

Table 63: Type and token counts for pattern III verbs by aspectual category

	Type	Token
ACTIVITY / STATE	254 (82.7%)	43,723 (92.4%)
OTHER	53 (17.3%)	3,578 (7.6%)
TOTAL	307	47,301

Table 64: Type and token counts for pattern VI verbs by aspectual category

However, the token counts reveal that much higher percentages of actual instances of pattern III and pattern VI verbs are of those in the ACTIVITY/STATE category, therefore the association of this lexical aspect meaning with the formal $C_1\bar{a}C_2$ sequence is enhanced. Thus by examining corpus data we have established that over 91% of actual pattern III and pattern VI usage conforms to [+durative] and [Øtelic] aspectual feature

marking.

9.1.2 Other categories represented

Whilst the number of exceptions to the ACTIVITY/STATE categorisation seems large at 160 and consequently the task of examining them in more detail appears daunting, many of these apparently exceptional verbs are attributable to groups whose members share a basic meaning and / or aspectual properties.

9.1.2.1 Verbs of surprise

These verbs, having a shared meaning involving sudden action with explicit or implicit surprise, represent 20 exceptions in total (Table 65), accounting for approximately 2% of all verbs in the lexicon with the $C_1\bar{a}C_2$ sequence, though representing just over 1% of corpus tokens.

	III = 'SURPRISE'	VI = 'SURPRISE'	TOTAL
dictionary count	12 (2.3%)	8 (1.6%)	20 (2.1%)
corpus type count	8 (2.3%)	7 (2.2%)	15 (2.3%)
corpus token count	1,784 (1.3%)	339 (0.7%)	2,123 (1.1%)

Table 65: Frequency of verbs of surprise by pattern

Three of the more common verbs in this category are given in (208) to (210):

- (208) فاجأ [III]
fāja'a (+ d.o.)
 'to come suddenly upon (s.o.) / to take (s.o.) by surprise'
- (209) صادف [III]
Sādafa (+ d.o.)
 'to meet (s.o.) unexpectedly'
- (210) تكالب على [VI]
takālaba *alā* (+ i.o.)
 'to fall, pounce upon / assail (s.o.)'

How then should this small but significant group of verbs be categorised aspectually?

We will take as our example the verb in (208) and test it firstly for durativity using examples assessed by native speakers. Example (211a) is uncontroversial, all three native speaker informants finding it acceptable:

- (211a) فاجأ أحمد صديقه {YYY}
fāja'-a 'aHmad Sadīq-a-hu
 surprise;PST-3MSG Ahmad friend-ACC-POSS.3MSG
 Ahmad surprised his friend

However, when a temporally extensive adverbial phrase was appended (211b), only one of the three informants judged it good Arabic, one marking it as marginally acceptable

and the other as unacceptable.

- (211b) فاجأ أحمد صديقه طوال عشرين دقيقة {Y?N}
- fāja'-a* 'aHmad *Sadīq-a-hu* *Tiwāla* *ʿashr-īn* *daqīqa*
- surprise;PST-3MSG Ahmad friend-ACC-POSS.3MSG during twenty-GEN minute
- ?Ahmad surprised his friend for twenty minutes (Questionnaire:12)

It seems likely that any possible interpretation with a temporally extensive adverbial is iterative rather than durative, as with the perfectly acceptable explicitly iterative adverbial in (211c):

- (211c) فاجأ أحمد صديقه مرات كثيرة {YYY}
- fāja'-a* 'aHmad *Sadīq-a-hu* *marr-āt* *kathir-a*
- surprise;PST-3MSG Ahmad friend-ACC-POSS.3MSG occasion-PL many-F
- Ahmad surprised his friend on many occasions (Questionnaire:8)

Further evidence is provided in (211d), where the [+past] [+imperfective] verb which might otherwise have been interpreted as habitual was judged as incompatible or only marginally compatible with the temporally extensive adverbial.

(211d) كان أحمد يفاجئ صديقه طوال عشرين دقيقة {??N}

kān-a yufāji'-u 'aHmad Sadīq-a-hu Tiwāla

be;PST-3MSG surprise;NPST.3MSG-IND Ahmad friend-ACC-POSS.3MSG during

عاشر-ين دقائقا

twenty-GEN minute

'Ahmad was surprising / used to surprise his friend for twenty minutes'

(Questionnaire:32)

Finally, compatibility with a punctual adverbial confirms the non-durative nature of this verb:

(211e) فاجأ أحمد صديقه في الساعة الثانية

fāja'-a 'aHmad Sadīq-a-hu fī s-sā عا ath-thāniy-a

surprise;PST-3MSG Ahmad friend-ACC-POSS.3MSG in DEF-hour DEF-second-F

'Ahmad surprised his friend at two o'clock'

We may therefore conclude, since this verb resists durative interpretation, that its nucleus is unmarked for durativity, i.e. [Ødurative]. Thus it must either be a SEMELFACTIVE or an ACHIEVEMENT, depending on whether or not it is marked [+telic] in coda.

The test of telicity which we applied in the previous chapter was that for a [+telic] verb the imperfective does not entail the perfective. Certainly (212a) does entail (212b), suggesting atelicity and therefore a SEMELFACTIVE categorisation, cf. section

8.4.2.5.

(212a) [+imperfective] [+past]

كان يفاجئنا هو دائما بأرائه

kān-a *yufāji'-u-nā* *huwa* *dā'im-an*

be;PST-3MSG surprise;NPST.3MSG-IND-OBJ.1PL SBJ.3MSG lasting-ACC.INDF

bi-'ārā'-i-hi

with-opinion;PL-GEN-POSS.3MSG

'He was always surprising us / always used to surprise us with his opinions'

(arabiCorpus:020799ARTS09)

(212b) [+perfective]

قد فاجأنا هو بأرائه

qad *fāja'-a-nā* *huwa* *bi-'ārā'-i-hi*

PFV surprise;PST-3MSG-OBJ.1PL SBJ.3MSG with-opinion;PL-GEN-POSS.3MSG

'He [has] surprised us with his opinions'

However, the extreme resistance of the example verb to temporally extensive adverbials is unlike the SEMELFACTIVE examples used in the previous chapter, thus leaving open the possibility that the situation described consists of discrete, iterative telic events. It would therefore seem expedient to employ a further test for telicity and, since this verb is transitive, testing for passivisability is a possible solution.

In section 7.3.1.1 the distinction was drawn between actional and statal passives and it was noted that MSA reserves the passive participle or 'done' form, which implies

result, for statal passives. Recall also that verbs marked [+telic] exhibit a coda phase in which the emphasis is upon the resulting endpoint of the action they describe. Beedham (2005:44) states explicitly that telicity is required for passivisability, i.e. that a verbal expression must have a built in endpoint in order to passivise, or more rigorously to form a statal passive. Thus we shall return to example (211a) and examine whether it may be passivised.

The responses of native speakers indicated that they have little or no problem with the verb being used as an actional passive (213a), but they unanimously judged the statal passive construction with the passive participle (213b) to be unacceptable:⁷⁸

- (213a) فوجئ صديقه {?YY}
- fūji'-a* *Sadīq-u-hu*
- surprise;PST.PASS-3MSG friend-NOM-POSS.3MSG
- 'His friend was surprised' (Questionnaire:21)
- (213b) كان صديقه مفاجئاً * {NNN}
- kān-a* *Sadīq-u-hu* *mufāja'-an*
- be;PST-3MSG friend-NOM-POSS.3MSG surprise;PPT-ACC.INDF
- 'His friend was surprised' (Questionnaire:46)

This is a clear indication of atelicity. However, my attention was initially drawn to the 'verbs of surprise' during my preliminary categorisation of lexical aspect precisely because I was not convinced that these verbs are atelic. The following example (214)

⁷⁸ For further discussion of the compatibility of the passive participle with patterns III and VI see Chapter 11.

from English gives insight into the problem:

(214) As long as we remain surprised by our economic success ... we may be all right.

(<http://www.independent.co.uk/opinion/commentators/hamish-mcrae/a-healthy-economy-is-a-worrying-one-567405.html>, 15 July 2009)

Clearly English allows statal passive use of the second participle of the verb 'to surprise'. It is therefore most likely marked [+telic] and hence is a verb of ACHIEVEMENT. However, the evidence from native Arabic speakers is that in MSA the verb فاجأ (*fāja'a*) is [Øtelic] and therefore SEMELFACTIVE. In fact my initial reluctance to accept its atelicity is possibly an artefact of translation. For readability I have been translating the verb as 'to surprise', whereas properly it should be translated as 'to take by surprise', these two verbal expressions being aspectually distinct in English. We will not examine each 'verb of surprise' individually, but it is clear that example verbs (209) and (210) are more obviously SEMELFACTIVE when translated than is example (208).

Thus to summarise the findings of this section, the 'verbs of surprise', which form a small but significant subset of $C_1\bar{a}C_2$ sequence verbs, are SEMELFACTIVE and therefore share with ACTIVITY and STATE verbs the property of being unmarked for telicity, i.e. [Øtelic].

9.1.2.2 Verbs of giving

A small group of $C_1\bar{a}C_2$ sequence verbs which are not classifiable as ACTIVITY/STATE share a common meaning of 'giving'. However, the data in Table 66 show that these

constitute less than 1% of the pattern III and pattern VI verbs in the lexicon and that there are only three such verbs, shown in examples (215) to (217), which are actually attested in the corpus. Moreover, they are used infrequently, accounting for only 0.05% of total attested instances in these patterns.

	III = 'GIVING'	VI = 'GIVING'	TOTAL
dictionary count	6 (1.2%)	1 (0.2%)	7 (0.7%)
corpus type count	3 (0.9%)	0 (0.0%)	3 (0.5%)
corpus token count	95 (0.07%)	0 (0.0%)	95 (0.05%)

Table 66: Frequency of verbs of giving by pattern

(215) قايض بـ

qāyaDa (+ d.o.) (+ d.o.) *bi* (+ i.o.)

'to give (s.o.) (s.th.) in exchange for (s.th.)'

(216) ناول

nāwala (+ d.o.) [or optionally *li* (+ i.o.)] (+ d.o.)

'to give [to] (s.o.) (s.th.)'

(217) وافى بـ

wāfā (+ d.o.) *bi* (+ i.o.)

'to deliver to (s.o.) (s.th.) / supply (s.o) with (s.th.)'

It might be expected that 'verbs of giving' are categorised as either ACHIEVEMENTS or ACCOMPLISHMENTS, since the situation described by the verb appears to involve a change of state for the object as a result of the action, namely a change in who has it in

their possession, whether this transition is punctual or durative, i.e. we would expect [+telic] marking. However, consider the following English examples:

(218a) Christopher gave his books to a charity shop.

(218b) Christopher donated his books to a charity shop.

(218c) * A charity shop sells given goods.

(218d) A charity shop sells donated goods.

Although the verbs in (218a-b) appear synonymous, they behave differently in the use of their second participles in (218c-d), indicative of an aspectual difference. We must therefore be careful when comparing apparently similar examples and furthermore avoid transferring expectations from English to the Arabic examples. In fact although the act of giving is most readily conceptualised as the transfer of possession of a physical object from giver to receiver, where the (grammatical) object transferred is abstract it does not undergo the same change of state. Thus in (219), the receiver is now in possession of the transferred abstract object, although the giver has not actually parted with it.

(219) The doctor gave Ewen advice about his condition.

The following example from Arabic (220a) suggests the time line in (220b); furthermore, since the indirect object ('his criticisms') is unbounded, for any point RT within the nucleus phase, it would be true to assert (220c) according to the time line in (220d):

(220a) [+imperfective] [+past]

كان يوافيه بنقداته لنظرات المنفلوطي

kān-a *yuwāfī-hi* *bi-naqd-āt-i-hi*

be;PST-3MSG supply;NPST.3MSG-OBJ.3MSG with-criticism-PL-GEN-POSS.3MSG

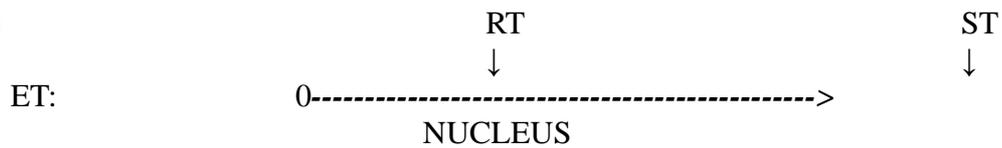
li-naDHar-āt-i *l-manfalūTī*

of-view-PL-GEN DEF-Manfaluti

'He was giving him [supplying him with] his criticisms of Manfaluti's views'

(arabiCorpus:GEN1996:5209)

(220b)



(220c) [+perfective]

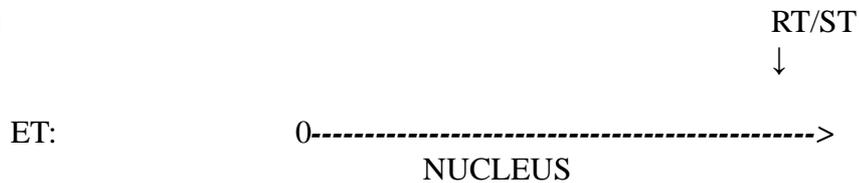
قد وافاه بنقداته

qad *wāfā-hu* *bi-naqd-āt-i-hi*

PFV supply;PST;3MSG-OBJ.3MSG with-criticism-PL-GEN-POSS.3MSG

'He has given him [supplied him with] his criticisms'

(220d)



This behaviour is typical of an ACTIVITY and thus, as the verb is capable of atelic interpretation, we must attribute to it null marking for telicity, i.e. [Øtelic]. The following examples from each of the other two verbs in this group which are actually

attested in the corpus make it clear that they too are capable of atelic interpretation, though the scarcity of examples clearly marked for grammatical aspect makes further investigation from the corpus difficult.

(221) [+imperfective] [+past]

العالم الاسلامي كان يقايض التوابل بالذهب

al-ʿālam-u l-ʿislāmī kān-a yuqāyiD-u

DEF-world-NOM DEF-Islamic be;PST-3MSG exchange;NPST.3MSG-IND

t-tawābil bi-dh-dhahab

DEF-spice;PL with-DEF-gold

'The Islamic world was exchanging [used to exchange] spices for gold'

(arabiCorpus:GEN1997:35361)

(222) كان الكاهن يناول القربان الى ذوي الشهداء وسائر المصلين

kān-a l-kāhin yunāwil-u l-qurbān 'ilā

be;PST-3MSG DEF-priest give;NPST.3MSG-IND DEF-Eucharist to

dhaw-ī sh-shuhadā' wa-sā'ir-i l-muSall-īn

possessor-GEN.PL DEF-martyr and-remainder-GEN DEF-worshipper-GEN.PL

'The priest was giving the Eucharist to the families of the martyrs and the rest of the worshippers'

(arabiCorpus:NEW1996:30463)

It is also significant that, unlike other verbs with meanings of 'to give' in other patterns such as أعطى (*aʿṭā* – pattern IV) and وهب (*wahaba* – pattern I), none of the three

verbs examined here has a passive participle listed in Wehr (1994). If indeed this is an accurate indication that they may not be used in the statal passive, it is further evidence for their atelicity. Certainly I have found no evidence in the corpus to contradict Wehr's omission of the passive participles from the lexicon.

To summarise, this group contributes little numerically to the data, but preliminary findings based on limited data suggest that they too are unmarked for telicity, i.e. [Øtelic].

9.1.2.3 Verbs of inception

Unlike the previous two groupings, the verbs which I have gathered together under this heading do not share a basic meaning, but rather they appear to be aspectually similar, describing a situation which involves entry into a state. Thus at first sight they appear to display telicity and are not capable of inclusion in the category of ACTIVITY/STATE. Table 67 shows the counts for the verbs I have grouped according to inceptivity. Although their representation in the corpus by token is only around half that by type, these verbs constitute a relatively large grouping and account for the majority of exceptions to the ACTIVITY/STATE category amongst verbs with the $C_1\bar{a}C_2$ sequence. Clearly any characterisation of the form-meaning relationship for patterns III and VI which involves lexical aspect must provide a satisfactory account of the role of these verbs within the system.

	III = 'INCEPTION'	VI = 'INCEPTION'	TOTAL
dictionary count	63 (12.3%)	55 (12.4%)	118 (12.4%)
corpus type count	46 (13.0%)	42 (13.7%)	88 (13.3%)
corpus token count	9726 (7.1%)	2881 (6.1%)	12,607 (6.8%)

Table 67: Frequency of verbs of inception by pattern

Many of the verbs in this grouping have previously been identified as mutual or reciprocal, but rather than representing a static mutual relationship or participation together in an activity, they describe entry by two or more entities into a relationship which then persists. Thus they may be said to involve a transition (necessarily dynamic) into a durative state. Examples from patterns III and VI are given in (223) and (224):

(223) حالف [III]

Hālaḥfa (+ d.o)

'to make an alliance with (s.o.)'

(224) تعارف [VI]

ta'ārafa

'to become mutually acquainted'

However, other verbs included in the grouping do not conform to a mutual interpretation in pattern III or reciprocal interpretation in pattern VI, and many of these, like example (225), may represent either a state or the attainment of that state.

(225) تكامل [VI]

takāmala

'to be/become complete'

Verbs in Arabic which exhibit this state/entry into state dichotomy of meaning are common, such as examples (226) to (228) drawn from other patterns:

(226) حبل [I]

*Habila*⁷⁹

'to be/become pregnant'

(227) اسودّ [IX]

(i)swadda

'to be/become black'

(228) كبر [I]

kabura

'to be/become large/great'

As the translations suggest, English does not have equivalent verbs capable of interpretation as either state or entry into state and it makes this distinction by means of the aspectual difference between 'be' and 'become'. However it appears that verbs of this type in MSA do not conform to the categories defined by Vendler (1967) and extended by Olsen (1997). In the following chapter we will proceed to investigate whether further

⁷⁹ The verb here is given in the standard citation form, though note that for pragmatic reasons it would not normally be found with masculine inflection.

extension of Olsen's scheme is required in order to incorporate these verbs, before examining the pattern III and pattern VI verbs which I have identified as carrying an inceptive meaning. At present, however, we will treat this group of verbs as potential exceptions to the [Øtelic] feature marking observed for the other C₁āC₂ sequence verbs examined in sections 9.1.1, 9.1.2.1 and 9.1.2.2.

9.1.2.4 Other verbs

There remains a small number of verbs, contributing less than 1% to the token count, which must be examined on a case-by-case basis, as the preliminary dictionary search suggests that they may not belong in any of the groups identified above. The counts for these verbs are given in Table 68.

	III = 'OTHER'	VI = 'OTHER'	TOTAL
dictionary count	10 (2.0%)	5 (1.1%)	15 (1.6%)
corpus type count	6 (1.7%)	4 (1.3%)	10 (1.5%)
corpus token count	820 (0.6%)	358 (0.6%)	1178 (0.6%)

Table 68: Frequency of other anomalous verbs by pattern

9.1.2.4.1 Denominative and delocutive verbs

There are five verbs which are clearly derived from nouns or sayings. Examples (229) and (230) are delocutive, i.e. derivatives designating utterance of the source word or phrase, and are therefore SEMELFACTIVE and hence [Øtelic].

- (229) لاعن [III]
lā ʿna (token count: 1)
 'to utter the *li ʿān* [oath of condemnation]'
- (230) عايد على [III]
ʿāyada ʿalā (+ i.o.) (token count: 3)
 'to wish (s.o.) a merry feast'

Example (231), although most likely an ACCOMPLISHMENT, appears to be unrelated in meaning to the root combination *t-b-l*, but is rather a denominative derivative of *تابل* (*tābal / tābil* – 'coriander').

- (231) تابل [III]
tābala (+ d.o.) (token count: 0)
 'to spice, season (s.th.)'

It is also listed in the dictionary with a QI variant *توبل* (*tawbala*), in which C_2 is the weak consonant *wāw* (و) forming the first syllable *taw*, possibly a reanalysis of the stressed syllable *tā* which is integral to the source noun. This suggests that the resemblance to pattern III is incidental and the verb does not strictly contain the $C_1\bar{a}C_2$ sequence in which the long vowel is part of the derivational morphology. It should also be noted that the token count for this verb in its pattern III form in the *arabiCorpus* newspaper corpus was zero.

A similar analysis is suggested for examples (232a-b), which are listed as pattern III and pattern VI derivatives respectively of the phrase لا شيء (*lā shay'* – 'nothing'). Again, the *ā* is integral to the source phrase and as such should not be analysed as belonging to the derivational morphology.

(232a) لا شيء	[III]
<i>lāshā</i> (+ d.o.)	(token count: 1)
'to suppress / crush / destroy (s.th.)'	
(232b) تلاشى	[VI]
<i>talāshā</i>	(token count: 192)
'to be suppressed / crushed / destroyed', 'to dwindle / disappear'	

9.1.2.4.2 Potentially [+telic] verbs

The ten verbs listed in examples (233)-(242) were identified according to the meanings given below⁸⁰ as either ACCOMPLISHMENTS or ACHIEVEMENTS, i.e. belonging to one of the categories with [+telic] feature marking in Olsen's scheme.

(233) دارك	[III]
<i>dāraka</i> (+ d.o.)	(token count: 0)
'to reach (s.o. / s.th.)'	

⁸⁰ Note that there are also alternative meanings which are unambiguously atelic for some of these verbs.

- (234) تسافك [VI]
tasāfaka (token count: 0)
 'to murder each other'
- (235) طابق [III]
Tābaqa (+ d.o.) (token count: 0)
 'to adapt / adjust / trim (s.th.)'
- (236) طاهر [III]
Tāhara (+ d.o.) (token count: 0)
 'to circumcise (s.o.)'
- (237) عاير [III]
āyara (+ d.o.) (token count: 9)
 'to gauge / test the accuracy of (s.th.)'
- (238) تفانى [VI]
tafānā (token count: 17)
 'to annihilate each other'
- (239) ناهز [III]
nāhaza (+ d.o.) (token count: 580)
 'to attain, reach, seize (s.th.)'
- (240) تناهى [إلى] [VI]
tanāhā ['ilā (+ i.o.)] (token count: 41)
 'to come to an end, to reach (s.o.)'

- (241) بَارَكَ [III]
bāraka (+ d.o.) (token count: 226)
 'to bless (s.o.)'
- (242) تَعَاْفَى [VI]
ta ʿāfā (token count: 108)
 'to recuperate, recover, regain health'

It will be noted that four of the verbs listed scored zero in the corpus token count: thus the data suggest that these verbs may have little relevance for contemporary Arabic and any assessment of alternate meanings where these are suggested by Wehr (1994) will be difficult. It is therefore proposed to concentrate on the remaining six verbs.

Examination of corpus data for the verb in (237) reveals that rather than the literal meaning of testing weights and measures, contemporary usage suggests a figurative meaning, of which (243) is an example:

- (243) كان أصحابه هناك يعايرونه بما كتبه عن النساء
kān-a 'aSHāb-u-hu hunāk yu ʿāyir-ū-na-hu
 be;PST-3MSG friend;PL-NOM-POSS.3MSG there measure;NPST.3M-PL-IND-OBJ.3MSG
bi-mā katab-a-hu ʿan an-nisā'
 with-what write;PST-3MSG-OBJ.3MSG about DEF-WOMEN

'His friends there used to measure him by what he wrote about women'

(arabiCorpus:050899WRIT01)

This figurative usage is consistent with an ACTIVITY rather than an ACCOMPLISHMENT, although it should be noted that the verbal noun معايرة (*mu ʿāyara*) is more common than the verb itself and retains literal usage in MSA, as demonstrated in (244):

(244) جمعية الحرفيين ... لا تعترف بأي طريقة لمعايرة الذهب إلا بالطريقة التي يستخدمونها

jama ʿīat-u l-Hiraftī-īn ... lā ta ʿtarif-u bi-'ayy

society-NOM DEF-craftsman-PL.GEN ... NEG recognise;NPST.3FSG-IND with-any

Tarīqa li-mu ʿāyarat-i dh-dhahab 'ilā bi-T-Tarīqa

method of-measurement-GEN DEF-gold except with-DEF-method

allatī yastakhdim-ū-na-hā

REL;3FSG employ;NPST.3M-PL-IND-OBJ.3FSG

'The craftsmen's guild ... does not recognise any method of assaying gold other than the method which they employ' (arabiCorpus:archive64102)

Similarly, contemporary usage of the verb from example (238), of which the corpus example in (245) is typical and represents a STATE, appears to exclude the [+telic] meaning of 'to annihilate each other'.

(245) جميل جدا ان يتفانى المعلم في عمله

jamīl jiddan 'an yatafānā l-mu ʿallim fī
 beautiful very that be_consumed;NPST.3MSG DEF-teacher in
ʿamal-i-hi
 work-GEN-POSS.3MSG

'It is very pleasing that the teacher is consumed in his work'

(arabiCorpus:011223t45037MQAL)

For (239), I have not identified any corpus examples supporting the meaning of 'to seize' in MSA and it appears that identification of the meaning 'to reach' for this verb with an ACHIEVEMENT may simply be an artefact of translation. As example (246) demonstrates, typical usage of the verb closely resembles the 'continuously durative' example (166) in section 8.4.2.1, which was classified as a STATE verb.

(246) عدد الطلاب ... كان يناهز المئتين عندما درست في الجامعة

ʿadad-u T-Tullāb ... kān-a yunāhiz-u
 number-NOM DEF-student;PL be;PST-3MSG approach;NPST.3MSG-IND
l-mi'at-ayn ʿindamā daras-tu fī l-jāmiʿa
 DEF-hundred-DU.ACC when teach;PST-1SG in DEF-university

'The number of students ... was approaching two hundred when I taught at the university'

(arabiCorpus:GEN1997:41591)

One of the meanings of example (240) is also 'to reach', though closer

investigation of corpus data reveals that it is almost exclusively used figuratively of sounds, news etc. reaching the attention of a hearer, as in (247):

(247) لقد تناهى الى علم الملك حسين ان ...

laqad tanāhā 'ilā ʿilm-i l-malik Hussayn 'an ...

PFV reach;PST;3MSG to knowledge-GEN DEF-king Hussein that ...

'It had reached King Hussein's ears that ...' (arabiCorpus:NEW1996:17682)

However, when we conceptualise sound or news reaching a hearer, we must note that its receipt does not terminate the propagation of that sound or the dissemination of that news in the way that reaching the summit of a mountain terminates the process of climbing. Example (248), in which the verb has the same meaning but no target recipient is specified, clarifies that no endpoint is implied by the verb in this usage.

(248) تناهى صوتها من المطبخ

tanāhā Sawt-u-hā min al-maTbakh

come;PST;3MSG sound-NOM-OBJ.3FSG from DEF-kitchen

'The sound of it came from the kitchen' (arabiCorpus:GEN1996:5540)

Thus although other derivatives of the root of *تناهى* (*tanāhā*) have a meaning involving 'ending', the corpus evidence is that the usage of the pattern VI verb is overwhelmingly atelic.

At first sight, example (241) is an ACCOMPLISHMENT verb, involving a

process culminating in a resultant state upon the direct object, i.e. a state of 'being blessed'. However, the following example sentences using this verb (249a-f) were submitted to native speakers for assessment:

- (249a) بارك الله ابراهيم طوال عشرين سنة {YYY}
bārak-a llah 'ibrāhīm Tiwāla ʿashr-īn sana
 bless;PST-3MSG God Abraham during twenty-GEN year
 'God blessed Abraham for twenty years' (Questionnaire:45)
- (249b) كان الله يبارك ابراهيم طوال عشرين سنة {NYY}
kān-a llah yubārik-u 'ibrāhīm Tiwāla ʿashr-īn sana
 be;PST-3MSG God bless;NPST.3MSG-IND Abraham during twenty-GEN year
 'God was blessing Abraham for twenty years' (Questionnaire:41)
- (249c) بارك الله ابراهيم مرّات كثيرة {YY?}
bārak-a llah 'ibrāhīm marr-āt kathir-a
 bless;PST-3MSG God Abraham occasion-PL many-F
 'God blessed Abraham many times' (Questionnaire:53)
- (249d) كان الله يبارك ابراهيم حتى أواخر أيامه {?YY}
kān-a llah yubārik-u 'ibrāhīm hattā 'awākhir
 be;PST-3MSG God bless;NPST.3MSG-IND Abraham until end;PL
'ayyām-i-hi
 day;PL-GEN-POSS.3MSG
 'God was blessing Abraham unto the end of his days' (Questionnaire:59)

- (249e) بورك ابراهيم {NYY}
būrik-a 'ibrāhīm
 bless;PST.PASS-3MSG Abraham
 'Abraham was blessed' (actional passive) (Questionnaire:44)
- (249f) كان ابراهيم مباركا {Y??}
kān-a 'ibrāhīm *mubārak-an*
 be;PST-3MSG Abraham bless;PPT-ACC.INDF
 'Abraham was blessed' (statal passive) (Questionnaire:36)

The use of a temporally extensive adverbial with the s-stem in (249a) was acceptable to all three informants, providing evidence that the verb represents a durative process. There was some disagreement regarding the imperfective past in (249b), though the majority acceptance of (249c) demonstrates that the action of the verb may also be performed iteratively upon an individual, and this is also the most likely interpretation of (249d). However, this usage is not consistent with ACCOMPLISHMENT verbs. Recall the [+telic] example verb بنى (*banā* – 'to build') in section 8.4.2.3: it is not possible to perform this verb iteratively upon the same (i.e. definite and specific) entity, due to its telicity. Once the endpoint is reached, the action represented by the verb cannot continue with respect to that patient. Hence (250) is not well-formed either in Arabic or in English:

(250) * بنى مكتبة الجامعة مرّات كثيرة *

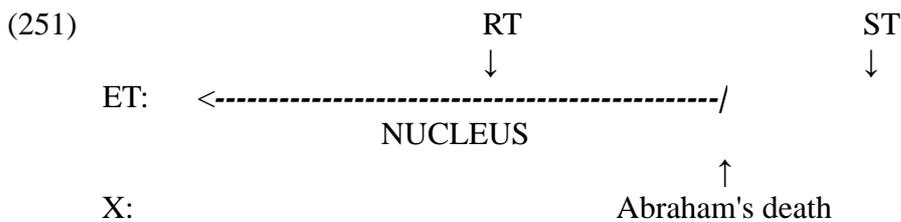
* *banā* *maktabat-a* *l-jāmi* عا *marr-āt* *kathīr-a*

build;PST;3MSG library-ACC DEF-university occasion-PL many-F

* 'He built the university library many times'

Nevertheless, (249e) and (249f) demonstrate that not only may بَارَكَ (*bāraka*) be used in the actional passive, but for at least some speakers the statal passive is also acceptable, which is normally indicative of telicity, and indeed Wehr (1994) includes the passive participle in his entry for this verb. Therefore we must ask whether it is possible for a verb to be both resultative in that it brings about a new state upon its patient and yet atelic in that it involves no built-in endpoint.

In section 8.4.2.1, we discussed the verb جَاوَزَ (*jāwaza* – 'to exceed / surpass') which corresponded with Poutsma's (1926:289) designation 'continuously durative'. Although the situation represented by the verb involves an external goal, the action of the verb may continue indefinitely beyond the goal: it was therefore designated [Øtelic] as no endpoint is inherent. It is possible that a similar explanation is pertinent to verbs like بَارَكَ (*bāraka*). Consider the following event diagram for (249d):



The beginning of the situation in (251) is unspecified and its end is bounded by the external event of Abraham's death. However, at any RT within that period it is true to assert both (252a) and (252b):

(252a) [+perfective]

قد بارك الله ابراهيم

qad bārak-a llah 'ibrāhīm

PFV bless;PST-3MSG God Abraham

'God has blessed Abraham'

(252b) ابراهيم مبارك

'ibrāhīm mubārak

Abraham bless;PPT-ACC.INDF

'Abraham is blessed'

That the imperfective (249d) entails the perfective (252a) is indicative of atelicity and thus the verb would be analysed as an ACTIVITY. However, it is undeniable that the state of 'being blessed' represented in (252b) is directly resultative from the performance of the action of the verb. Nevertheless, it is vital to realise that the state of 'being blessed' is fundamentally different to the state of 'being built' or 'being killed'. Thus the statement in (253) is possible, while (254) is not:

(253) قد بارك الله ابراهيم وما زال يباركه

qad bārak-a llah 'ibrāhīm wa-mā zāl-a

PFV bless;PST-3MSG God Abraham and-NEG cease;PST-3MSG

yubārik-u-hu

bless;NPST.3MSG-IND-OBJ.3MSG

'God has blessed Abraham and he is still blessing him'

(254) * قد قتل أحمد صديقه وما زال يقتله *

qad qatal-a 'aHmad Sadīq-a-hu wa-mā zāl-a

PFV kill;PST-3MSG Ahmad friend-ACC-POSS.3MSG and-NEG cease;PST-3MSG

yaqtul-u-hu

kill;NPST.3MSG-IND-OBJ.3MSG

* 'Ahmad has killed his friend and he is still killing him'

The difference is that 'being killed', like 'being built', is a final and absolute state, thus telic, whilst 'being blessed' is transitional and relative and thus atelic. One person may be more blessed than another, whilst one may not be more dead than another, or one house be more built than the next. Thus in the same way that the situation described by a 'continuatively durative' verb may proceed past an external goal, the situation described by *بارك* (*bāraka*) may proceed beyond an intermediate state of 'being blessed' to subsequent states of 'being more blessed'. This is only possible because the [+perfective] verb in (253) does not point to the coda, because there is none for a [Øtelic] verb. Before proceeding, it is also worth noting that the implication which this verb carries of a

cumulative effect rules out the possibility of discrete, telic, iterative events, since there is no sense that the state brought about by the initial performance of the action of the verb is anything other than persistent. In conclusion, despite the compatibility of this verb with the statal passive, the state described is not a final result and the evidence is therefore that it should be categorised as an ACTIVITY.

Finally, I am forced to conclude that example (242) is indeed anomalous and therefore constitutes a true exception. The evidence is that it is [+telic], i.e. it has a built-in endpoint, as it is clearly incorrect to assert the perfective (255b) on the basis of the imperfective (255a). Since durativity is also inherent to its meaning, it is properly categorised as an ACCOMPLISHMENT.

(255a) [+imperfective]

لا يزال الرئيس الكوبي فيدل كاسترو يتعافى من عملية جراحية

lā yazāl-u r-ra'īs-u l-kūbī fīdal kāstrū

NEG cease;NPST.3MSG-IND DEF-president-NOM DEF-Cuban Fidel Castro

yata ʿāfā min ʿamalīya jirāHīya

recover;NPST.3MSG from operation surgical

'The Cuban President Fidel Castro is still recovering from surgery'

(arabiCorpus:archive61186)

(255b) [+perfective]

قد تعافى الرئيس الكوبي فيدل كاسترو من عملية جراحية

qad ta عāfā *r-ra'īs-u* *l-kūbī* *fīdl* *kāstrū*

PFV recover;PST;3MSG DEF-president-NOM DEF-Cuban Fidel Castro

min عamalīya *jirāHīya*

from operation surgical

'The Cuban President Fidel Castro has recovered from surgery'

9.1.2.4.3 Section summary

To summarise the findings of this section (see also Table 69): the majority of the verbs presented here for which we have corpus data have been found to represent STATES, ACTIVITIES or SEMELFACTIVES and hence are [Øtelic]. Of the remainder, only one verb present in the corpus and with long *ā* properly belonging to its derivational morphology has been identified as [+telic].

	[Øtelic]	non-derivational <i>ā</i>	[+telic] ⁸¹
dictionary count	7	3	5
corpus type count	7	2	1
corpus token count	877	193	108

Table 69: Categorisation of verbs provisionally thought to be anomalous

9.2 Summary

Based on corpus data, there is good evidence that over 93% of actual usage of pattern III

81 Included here are those verbs absent from the corpus which cannot be fully assessed for telicity.

and pattern VI verbal forms is attributable to verbs in categories unmarked for telicity, i.e. [Øtelic]. Only one verb attested in the corpus was positively identified as [+telic], contributing less than 0.1% to actual usage. With three verbs reanalysed as properly quadriliteral, i.e. with \bar{a} not integral to derivational morphology, only the verbs classed in my survey as inceptives and resistant to classification under Olsen's scheme remain as potential exceptions to an analysis of the $C_1\bar{a}C_2$ sequence being identified as a formal morphological marker of atelicity (Table 70).

	[Øtelic]	? inceptives	[+telic]	excluded
dictionary count	827 (86.8%)	118 (12.4%)	5 (0.5%)	3 (0.3%)
corpus type count	570 (86.2%)	88 (13.3%)	1 (0.2%)	2 (0.3%)
corpus token count	172,132 (93.0%)	12,607 (6.8%)	108 (0.1%)	193 (0.1%)

Table 70: Categorisation of pattern III and pattern VI verbs by telicity

Thus in Chapter 10 we will endeavour to explain these verbs of inception in terms of Olsen's scheme and in particular to identify whether or not they exhibit a [+telic] feature-marked coda phase. Chapter 11 will present additional evidence regarding pattern III and pattern VI passive participle formation and the limited compatibility of these verbs with the statal passive.

Chapter 10

Inceptive Aspect

Henceforth, when referring to verbs which describe dynamic entry into a durative state, the term INCEPTIVE will be used, which the OED defines as 'expressing the beginning of action'. This term is preferred here over 'ingressive', as the latter, sharing a morpheme with words such as 'regress' and 'progress', may imply durativity or process which is not necessarily a feature of the onset of INCEPTIVES. Whereas 'punctual inception' and 'durative inception' are both possible, it is likely that 'punctual ingression' is an oxymoron and 'durative ingression' is tautological. Indeed, one might categorise ingression as [+durative] and inception as [Ødurative] and thus we will refer to INCEPTIVES without prejudicing the possibility that the initial phase of the situation represented by the verb may be durative. Similarly, INCEPTIVE is preferred over 'inchoative', since the latter term is often associated with entry into a state without agency⁸² and there is no such lack of agency in some of the examples already cited in section 9.1.2.3.

10.1 The case for a lexical aspect category of INCEPTIVE

We will begin by using the verb *حبل* (*Habila* – 'to be/become pregnant') as our example, since the inception and subsequent state represented by the verb are readily conceptualised. In (256a), although the verbs are marked only as [+past], the adverbial phrase favours a perfective reading and thus an inceptive interpretation of *Habila*:

⁸² E.g. 'to sink' used intransitively, meaning 'to become sunk'.

(256a) وفي غضون سنة حبلت حنة وأنجبت ابنا

wa-ft_ghuDūn sana Habil-at Hanna

and-within year [become]_pregnant;PST-3FSG Hannah

wa-'anjab-at 'ibn-a-n

and-give_birth_to;PST-3FSG SON-ACC-INDF

'And within a year Hannah became pregnant and gave birth to a son'

(ALAB:1 Samuel 1:6)

However, in (256b) with an overtly marked [+future] verb, it is no longer clear that an inceptive interpretation is required:

(256b) ستحبلين وتلدین ابنا

sa-taHbal-īn

wa-talid-īn

FUT-[be/become]_pregnant;NPST.2FSG-IND

and-give_birth_to;NPST.2FSG-IND

'ibn-a-n

SON-ACC-INDF

'You will be [become] pregnant and give birth to a son' (ALAB:Judges 13:3)

It is obvious pragmatically that in order to *be* pregnant one must first *become* pregnant. Thus we must allow the possibility that inceptivity in Arabic is merely pragmatically determined, rather than a lexical aspect feature, and that any suggestion that it is otherwise is simply an artefact of translation into English, which formally distinguishes inceptive situations periphrastically with 'become'.

It should be noted at this point that inception of a state may be either a punctual event, as in (256a-b), or a durative process. The following example (257) which employs the verb اسودَّ ((i)swadda - 'to be/become black') demonstrates durative inception:

(257) قد اسودّت وجوههم وتقلّصت عضلاتهم

<i>qad</i>	<i>iswadd-at</i>	<i>wujūh-u-hum</i>	<i>wa-taqallaS-at</i>
PFV	[become]_black;PST-3FSG	face;PL-NOM-POSS.3MPL	and-shrink;PST-3FSG
	<i>ع^aDal-āt-u-hum</i>		
	muscle-PL-NOM-POSS.3MPL		

'Their faces had blackened and their muscles had shrunk'

(arabiCorpus:GEN1996:7768)

Conveniently in (257) the phrase containing the verb of interest is followed by a phrase containing the verb تقلّص (taqallaSa - 'to shrink'), which is unambiguously durative and dynamic and is therefore an ACTIVITY, introduced by the conjunction و (*wa* – 'and'), thus suggesting two processes occurring simultaneously. Thus ((i)swadda is non-punctual and hence we must consider that it is potentially marked [+durative].

However, verbs of punctual inception present two related problems for Olsen's (1997) analysis. Firstly, a verb cannot be both a STATE and [Ødurative]. Consider these English sentences:

(258a) Charlotte was pregnant for nine months

(258b) Charlotte became pregnant * for twenty minutes / ?for nine months

Example (258a) is a straightforward STATE, marked [+durative] and therefore compatible with an appropriate durative adverbial 'for nine months'. However, the event of becoming pregnant is perceived as punctual, whatever the actual time needed for the biological process involved. This is demonstrated in (258b), where the relatively short durative 'for twenty minutes' is incompatible with the verb, although the longer durative 'for nine months' is rendered marginally acceptable by the interpretation that it is the STATE of 'being pregnant' ensuing from the inceptive event 'become pregnant' which is durative. This is not a problem for English, since we can designate expressions formed with 'be' as STATES [+durative] (Olsen 1997:155) and inceptives with 'become' as [Ødurative]. However, in Arabic it would appear that many verbs such as *حبل* (*Habila*) have both stative and punctually inceptive interpretations. The most obvious solution is to simply designate them as [Ødurative], allowing both possibilities.

However, this leads to the second problem. Again, consider some English examples:

(259a) What Charlotte did was become pregnant

(259b) *What Charlotte did was be pregnant

(259c) Charlotte became pregnant and so did Susan

(259d) *Charlotte was pregnant and so did Susan

Pseudo-cleft constructions (259a-b), and indeed other constructions with 'do' (259c-d), are incompatible with STATES as they require dynamicity (Binnick 1991:174; Olsen 1997:35). Again, for English this is not problematic, as we designate the stative copula

expressions as [+durative][Ødynamic] and inceptives with 'become' as [Ødurative] [+dynamic]. Now, since we have been forced to designate *Habila* as [Ødurative] to allow for the punctually inceptive interpretation 'become pregnant', we must also designate it [+dynamic], as [Ødurative][Ødynamic] is disallowed: 'A VERB must be minimally [+dynamic] or [+durative]' (Olsen 1997:51). However, verbs designated [Ødurative] [+dynamic] are either SEMELFACTIVES if [Øtelic] or ACHIEVEMENTS if [+telic]. If *Habila* is either of these, it must be a [+telic] ACHIEVEMENT, since there is a built in endpoint to becoming pregnant, a persistent resulting state (i.e. pregnancy) which is not true of SEMELFACTIVES. It will be noted that the [Ødurative][+dynamic] nucleus designation is the opposite of a STATE, which is [+durative] [Ødynamic]. Thus we are caught in a paradox, since the objective in designating *Habila* as [Ødurative] was precisely in order to allow it to be interpreted as either stative or punctually inceptive. Under Olsen's scheme, we must either designate the verb as [Ødurative][+dynamic] for the nucleus and accept that the verb is incapable of stative interpretation, or designate it as [+durative] [Ødynamic] and accept that it is incapable of punctual interpretation.

We will now examine whether inceptives can be treated as STATES. When discussing (256a-b) which are capable of either stative or punctually inceptive interpretation, we allowed that inceptivity may not be a lexical feature in Arabic, so one way to avoid the paradox discussed above is to regard حبل (*Habila*) as a STATE. However, this diminishes the focus which such verbs place on punctual entry into the stative situation. In the following example (260a), it is stretching a point to suggest that the reader should understand that the mother was pregnant in a stative, hence durative sense, while under the tree, thus I have translated the verb as 'conceived'.

(261a) [+perfective] [+past]

ماذا لو كانت قد حبلت أثناء شهور حياتها مع زوجها؟

mādhā law kān-at qad Habil-at 'athnā'a

what if be;PST-3FSG PFV [become]_pregnant;PST-3FSG during

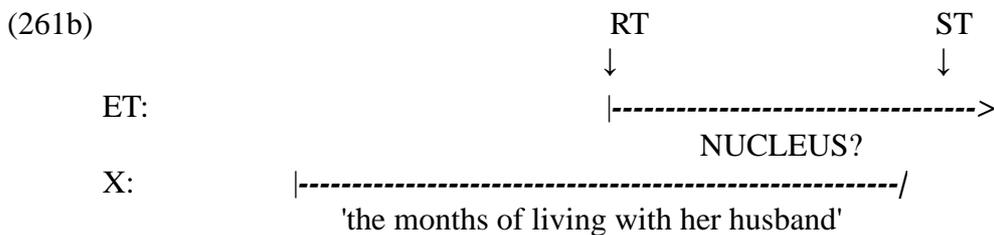
shuhūr Hayāt-i-hā ma ʿa zawj-i-hā?

month;PL life-GEN-POSS.3FSG with husband-GEN-POSS.3FSG

'What if she had become pregnant during the months of living with her husband?'

(<http://alketaba.jeeran.com/story/babel.html>, 23 May 2008)

The event diagram in (261b) is consistent with my translation of (261a), based on the context of the story, which makes it clear that the matter of concern is the woman's hypothetical entry into the state of 'being pregnant' during 'the months of living with her husband' (a period which has recently ended) and allows that had she done so, she might still be pregnant at ST:



However, as for ACTIVITIES where the verb is also [+durative] and [Øtelic], the [+perfective] verb in (261a) finds no coda to intersect, so it would be expected to reference the nucleus. Although it is true to say 'she has become pregnant' at any time

تلك الفترة، 9 اشهر، تمثل 9 سنين. بمعنى ان المرأة كانت تحبل بمولودها لفترة 9 سنين (262a)

tilka l-fatra, tis ع-a 'ashhur, tamthul-u tis ع-a sin-īn.

that;FSG DEF-period nine-F month;PL signify;NPST.3FSG-IND nine-F year;PL-GEN

bi-ma عnā 'anna l-mar'a kān-at taHbal-u

with-meaning that DEF-WOMAN be;PST-3FSG [be]_pregnant;NPST.3FSG-IND

bi-mawlūd-i-hā li-fatrat tis ع-at sin-īn

with-baby-GEN-POSS.3FSG for-period nine-F year;PL-GEN

'That period, nine months, signifies nine years. Meaning that the woman was pregnant with her baby for a period of nine years.'

([http://www.ladeenyon.net/forum/viewtopic.php?](http://www.ladeenyon.net/forum/viewtopic.php?f=10&t=4844&p=52878)

[f=10&t=4844&p=52878](http://www.ladeenyon.net/forum/viewtopic.php?f=10&t=4844&p=52878), 27 June 2009)

Lest the figurative usage obscure the applicability of the example, I have rewritten the relevant portion of (262a) as (262b), adjusting the adverbial phrase while retaining the relevant grammatical constructions:

(262b) [+imperfective] [+past]

كانت المرأة تحبل بمولودها لفترة 9 اشهر

kān-at l-mar'a taHbal-u bi-mawlūd-i-hā

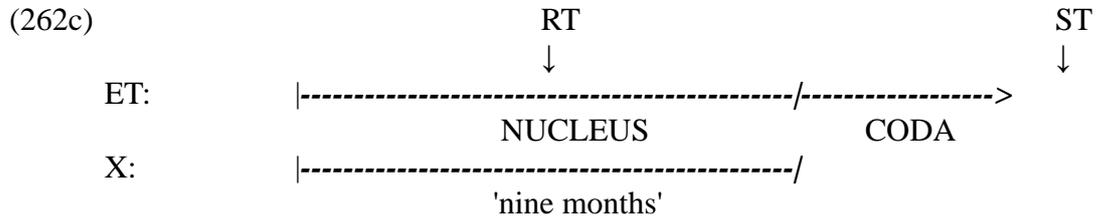
be;PST-3FSG DEF-WOMAN [be]_pregnant;NPST.3FSG-IND with-baby-GEN-POSS.3FSG

li-fatrat tis ٩-at 'ashhur

for-period nine-F month;PL

'The woman was pregnant with her baby for a period of nine months'

We might construct the following event diagram, based on the verb being marked [+dynamic][+telic]:



The [+imperfective] requires that RT intersects with the nucleus, and the durative adverbial 'for a period of nine months' must therefore refer to the nucleus, cf. (263), for which diagram (262c) is valid:

(263) كان يبني بيته لفترة 9 اشهر

<i>kān-a</i>	<i>yabnī</i>	<i>bayt-a-hu</i>	<i>li-fatrat</i>
be,PST-3MSG	build;NPST.3MSG.IND	house-ACC-POSS.3MSG	for-period
<i>tis</i> ع-at	<i>'ashhur</i>		
nine-F	month;PL		

'He was building his house for a period of nine months'

There is no inherent problem with the durativity of the nucleus for an ACHIEVEMENT verb, since this is allowable for verbs marked [Ødurative]. What is problematic is that we have already noted that if *حبل* (*Habila*) is an ACHIEVEMENT the nucleus must represent the earlier phase of 'becoming pregnant' and the coda represents the subsequent resulting phase of 'being pregnant'. This is incompatible with (262b), in which the verb cannot be translated as 'becoming pregnant': it must represent the STATE 'be pregnant'.

Thus for verbs of this type, neither the category of STATE nor that of ACHIEVEMENT adequately and consistently describes their behaviour in relation to grammatical aspect, and I therefore propose to introduce a further category of INCEPTIVE.

10.2 Extension of Olsen's scheme for INCEPTIVES

The existence in Arabic of a distinct category of INCEPTIVE which cannot be explained according to Vendler's (1967) classification, even as extended by Olsen (1997), requires that we examine how this category may be consistently incorporated into the overall scheme in order to achieve a unified description of lexical aspect categories in MSA. If a

consistent solution is found, it may reasonably be supposed that it will also be valid cross-linguistically. To recap, an INCEPTIVE verb describes both a stative situation and the (necessarily dynamic) entry into that stative situation. Since discovering and characterising the category of INCEPTIVE in Arabic, and inspired by Pinker (2008:199), I have also identified a small and restricted group of INCEPTIVES in English, which likewise fall outside conventional Vendlerian categories. These 'verbs of posture' are treated more fully in Danks (2008), though I will briefly exemplify their usage in section 10.2.2. Their existence, and the fact that they may be incorporated consistently into the scheme I develop here for Arabic, provides evidence for its applicability cross-linguistically.

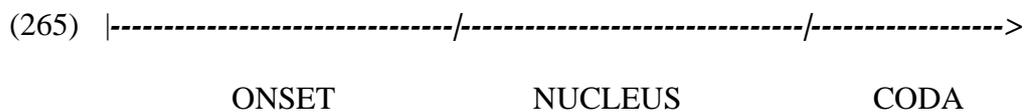
Using the example of *حبل* (*Habila*), 'be pregnant' or 'become pregnant', it was noted in the previous section that INCEPTIVES must have both [+dynamic] and [+durative] features, but that these are not co-existent in the nucleus phase, since the dynamic phase necessarily precedes the non-dynamic durative phase. I will demonstrate how the [+dynamic] and [+durative] features of INCEPTIVE verbs are applied to distinct phases.

Olsen's terms 'nucleus' and 'coda' are inspired by the field of phonology: specifically syllable structure. The English syllable 'cat' in (264) has onset, nucleus and coda:

(264)	ONSET	NUCLEUS	CODA
	/k/	/æ/	/t/

Cross-linguistically it is a universal that all syllables have a nucleus, but onset is optional

in some languages and coda is also optional where it is allowed at all (Cairns & Feinstein 1982:196-197). Olsen's event time scheme has obligatory nucleus and optional coda, but I will demonstrate that there is also an optional onset in event time structure. In fact, Freed (1979:30) whose work is referred to by Olsen, talks about a three-phase event time in these terms. Thus event time structure for a verb might look like this:



I therefore introduce here a three-phase model of lexical aspect features, in which:

- i. an onset phase precedes the nucleus;
- ii. INCEPTIVES are marked [+dynamic] in onset and [+durative] in nucleus.

However, we have already seen that [+imperfective] marking on a verb causes reference time to access the nucleus while a [+perfective] marked verb accesses the coda. So how can the onset be accessed specifically? I will demonstrate that where onset is present it is also referenced by the [+perfective] marked verb. In fact, I am not proposing that event time structure for a given verb can have both onset and coda but rather that they are mutually exclusive and thus there is no conflict as to which phase is referenced by the [+perfective] marked verb.⁸³ Let us therefore re-examine *حبل* (*Habila*) on this basis:

⁸³ See also section 10.2.2

that a state of 'being pregnant' cannot be indefinite. This pragmatically implicit finish is analagous to the pragmatically implicit start for ACTIVITIES such as 'to fight' and ACCOMPLISHMENTS such as 'to build'. In contrast, *حبل* (*Habila*) has a bounded start, defined by its onset phase, though since the onset of the situation concludes with entry into the nucleus phase, the onset is not referenced by the [+imperfective] verb.

Let us re-examine (261a), reproduced as (267a):

(267a) [+perfective] [+past]

ماذا لو كانت قد حبلت أثناء شهور حياتها مع زوجها؟

mādhā *law* *kān-at* *qad* *Habil-at* *'athnā'a*

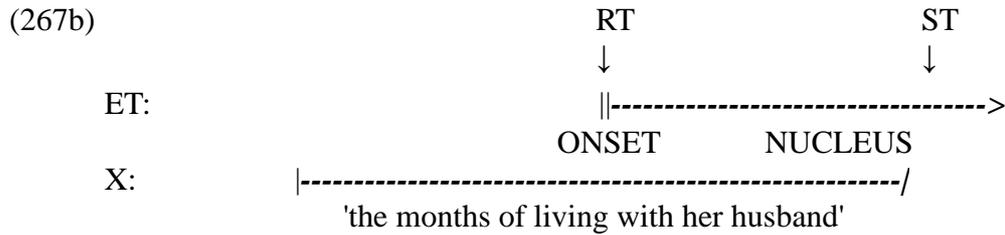
what if be;PST-3FSG PFV [become]_pregnant;PST-3FSG during

shuhūr *Hayāt-i-hā* *ma ʿa* *zawj-i-hā?*

month;PL life-GEN-POSS.3FSG with husband-GEN-POSS.3FSG

'What if she had become pregnant during the months of living with her husband?'

It is now possible to focus on a specific point in time, namely the punctual onset 'become pregnant', with the nucleus extending indefinitely and representing the state 'be pregnant', which may or may not still hold at ST. Thus, we can now generate the event diagram which best represents the situation described:



Note that the [+perfective] is drawn to the onset in the absence of a coda, with which we would otherwise expect it to intersect. We shall return to this observation later. It should be emphasised that reference to onset only anchors the start of the period during which it is possible to say 'she has become pregnant'. Much in the same way that for a coda to exist there must have been a preceding nucleus, the completion of which is signalled when the coda is referenced, existence of an onset requires a following nucleus, the inception of which is signalled when the onset is referenced.

It remains to be demonstrated that situations where the verb is not marked for grammatical aspect can also be explained. Here is (256a), repeated as (268a):

(268a) وفي غضون سنة حبلت حنة وأنجبت ابنا

wa-fi_ ghuDūn sana Habil-at Hanna

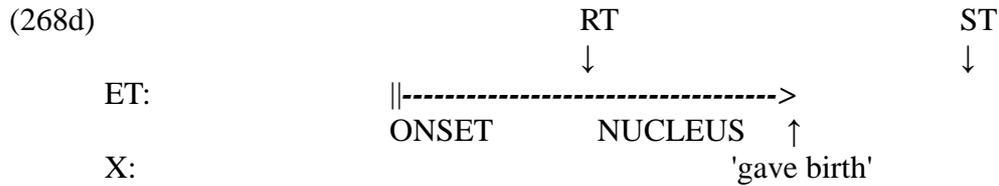
and-within year [become]_pregnant;PST-3FSG Hannah

wa-'anjab-at 'ibn-an

and-give_birth_to;PST-3FSG SON-ACC.INDF

'And within a year Hannah became pregnant and gave birth to a son'

As stated when this example was originally introduced, the adverbial phrase favours a



Thus the above analysis of onset and nucleus phases is entirely consistent with flexible aspectual interpretation where the verb is unmarked for grammatical aspect.

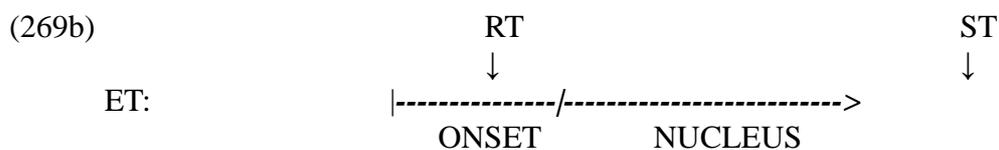
10.2.1 Feature marking of the onset phase

It was noted earlier that as well as punctually inceptive verbs, Arabic also possesses verbs which are duratively inceptive. The relevant part of example (257) is reproduced as (269a):

(269a) قد اسودّت وجوههم

<i>qad</i>	<i>iswadd-at</i>	<i>wujūh-u-hum</i>
PFV	[become]_black;PST-3FSG	face;PL-NOM-POSS.3MPL
'Their faces have/had blackened'		

Just as the event diagram for a punctual INCEPTIVE verb resembles a SEMELFACTIVE followed by a STATE, the diagram for (269) resembles an ACTIVITY followed by a STATE:



The onset is marked [+dynamic] as before, since any entry into a state necessarily involves change of state, according to Passonneau's (1988:47) requirement for 'kinesis', but is now also [+durative], while the nucleus is [+durative] but [Ødynamic]. Note that we must be careful not to impose any aspectual properties of the alternative English translations of the verb (*i*)*swadda* (أسودّ). Whereas 'be pregnant' is absolute, 'be black' may be viewed as relative: thus 'become black' is perceived as a durative and continuous process, since, for example, the colour of toast under a hot grill progresses smoothly through increasing degrees of blackness. In my analysis of the event diagram (269b), it is only possible to state (269c) after completion of the onset, i.e. in nucleus, where the situation is potentially no longer dynamic:

(269c) وجوههم سوداء

wujūh-u-hum *sawdā'*

face;PL-NOM-POSS.3MPL black;F

'Their faces are black'

It is possible to conceive of situations in which (*i*)*swadda* (أسودّ) is consistent with either a durative or a punctual onset, so it is properly designated [Ødurative] for onset. Note that I offer no argument that verbs with [+durative][+dynamic] marking for onset cannot exist cross-linguistically, only that I have found no proof for their existence in MSA at this time. Thus, I have chosen to categorise all Arabic verbs which denote inception of state as INCEPTIVE, with the following combination of features:

Onset: [+dynamic]

Nucleus: [+durative]

Coda: \emptyset

This new category has been incorporated into a modified table of verbal categories, based on a triphasic system consisting of privative features (Table 71):

CATEGORY	ONSET	NUCLEUS	CODA
STATE	\emptyset	[+durative]	\emptyset
ACTIVITY	\emptyset	[+durative] [+dynamic]	\emptyset
ACHIEVEMENT	\emptyset	[+dynamic]	[+telic]
ACCOMPLISHMENT	\emptyset	[+durative] [+dynamic]	[+telic]
SEMELFACTIVE	\emptyset	[+dynamic]	\emptyset
INCEPTIVE	[+dynamic]	[+durative]	\emptyset

Table 71: Olsen's characterisation of Vendler's categories extended for INCEPTIVES

10.2.2 Other feature marking combinations

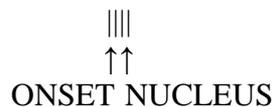
In this system, onset and coda phases both involve the presence or absence of marking for single privative features, [+dynamic] and [+telic] respectively, while nucleus must be marked with either or both of the privative features [+dynamic] and [+durative]. Consequently, all verbs have a nucleus, but onset and coda phases are optional. However, one may postulate that other verb categories consistent with the constraints thus far established are possible within the system (Table 72), though we have already noted in the previous section that existence of onset and coda for the same verb would be problematic.

CATEGORY	ONSET	NUCLEUS	CODA
[A]?	[+dynamic]	[+durative] [+dynamic]	∅
[B]?	[+dynamic]	[+dynamic]	∅
[C]?	[+dynamic]	[+durative] [+dynamic]	[+telic]
[D]?	[+dynamic]	[+dynamic]	[+telic]

Table 72: Other possible feature marking combinations involving a marked onset

We may speculate as to whether these as yet unattested categories of verb exist and, if so, what they might look like. If INCEPTIVES represent entry into a STATE, then posited type [B] would represent entry into a SEMELFACTIVE. It is, however, impossible to conceive of a punctual onset followed by a punctual nucleus, resembling back-to-back SEMELFACTIVES, as effectively these punctual events must merge into a single SEMELFACTIVE as in the event structure diagram (270):

(270) ET:



The following example in English demonstrates that where a verb is restricted to having only a true SEMELFACTIVE interpretation, inceptivity is not possible:

(271) *The runaway train began to hit the buffer.

Posited type [D] presents the same problem. Thus only a situation which includes a durative nucleus can have a punctual onset in the system proposed. If [+durative]

marking is possible for onset, it is conceivable cross-linguistically that verbs could have durative onset and punctual nucleus, though I consider this unlikely and moreover, as already stated, I have found no evidence for [+durative] onset marking in Arabic.

This leaves posited types [A] and [C] in which the nucleus is doubly marked. We have already noted that for INCEPTIVES the [+perfective] is drawn to the onset, which is marked [+dynamic], focusing attention on the beginning of the situation. However, as demonstrated by previous examples of verbs marked [+telic] in coda, the [+perfective] is drawn to intersect with that coda, focusing on completion. It is my contention, therefore, that a marked onset and a marked coda are most likely mutually incompatible, at least in any language which exhibits a marked perfective, including English and MSA. However, there remains no *a priori* reason why type [A] cannot exist, representing entry into an ACTIVITY.

At this point, it will be helpful to briefly examine the class of English verbs which I have identified and categorised as INCEPTIVES, which are all 'verbs of posture'. The following examples and event time diagrams demonstrate how I explain their event time structure in terms of onset and nucleus phases. In (272a-b), the [+perfective] verb references the onset and thus places the focus on the beginning of the situation, i.e. the act of transition to a sitting position, while the nucleus which follows represents the ensuing state which still pertains at ST.

(272a) [+perfective]

Josh has sat down

(272f) [+past]

Josh sat down [when he entered the room] / [for the whole time he was in the room]

I provide a fully argued case for this class of verbs as INCEPTIVES in Danks (2008). However, what is pertinent here is that the English progressive aspect construction *be + V-ing*, which is marked [+imperfective] and thus references the nucleus phase, is compatible with these verbs, as in (272c). Since the progressive aspect is normally only compatible with verbs marked [+dynamic] in nucleus, it suggests that English, somewhat counter-intuitively, treats durative situations such as 'sitting down' and 'standing up' as dynamic rather than static, i.e. as ACTIVITIES not STATES, thus these 'verbs of posture' are properly INCEPTIVES OF ACTIVITY.

10.2.3 Extended scheme for lexical aspect categories

Having established that INCEPTIVE OF ACTIVITY is a required lexical aspect category for English, we must add it to our table of cross-linguistic categories. Consequently we must strictly designate the class of Arabic inceptives we encountered earlier, where the nucleus is [Ødynamic], as INCEPTIVES OF STATE. Table 73 details the privative feature combinations for all the lexical categories which have been attested, according to my triphasic extension of Olsen's (1997) scheme.

CATEGORY	ONSET	NUCLEUS	CODA
STATE	∅	[+durative]	∅
ACTIVITY	∅	[+durative] [+dynamic]	∅
ACHIEVEMENT	∅	[+dynamic]	[+telic]
ACCOMPLISHMENT	∅	[+durative] [+dynamic]	[+telic]
SEMELFACTIVE	∅	[+dynamic]	∅
INCEPTIVE OF STATE	[+dynamic]	[+durative]	∅
INCEPTIVE OF ACTIVITY	[+dynamic]	[+durative] [+dynamic]	∅

Table 73: Lexical aspect categories and features: extended triphasic system

10.3 Inceptive verbs in patterns III and VI

It will now be shown, using several specific examples from patterns III and VI, that the category of INCEPTIVE OF STATE is applicable to the group of verbs within these patterns which were identified as involving inception in the previous chapter.

Recall that many of the verbs assigned to this group involve entry by two or more parties into a relationship which then persists, for example:

(273) عاهد على [III]

عāhada (+ d.o.) عalā (+ i.o.)

'to promise (s.o.) to do (s.th.)'

The following examples illustrate that this verb is understood both in the sense of entry into a promise or covenant and that of being in a state of covenant with another party. Example (274a) is consistent with the event time diagram (274b) in which the [+perfective] verb references the onset of the event, indicating entry by the players into a

promise or covenant relationship with respect to the president. It is clear that a durative state of covenant subsequently exists between the parties, represented by the nucleus phase, which is only bounded by the external event of the conclusion of the championship (or at least of the players' participation in it).

(274a) [+perfective]

قد عاهد اللاعبون رئيس الاتحاد ... على احراز البطولة العربية

qad عāhad-a l-lā عib-ūn ra'īs-a l-ittiHād ... عalā

PFV promise;PST-3MSG DEF-player-MPL.NOM president-ACC DEF-union on

'iHrāz-i l-baTūla l-ع arabīya

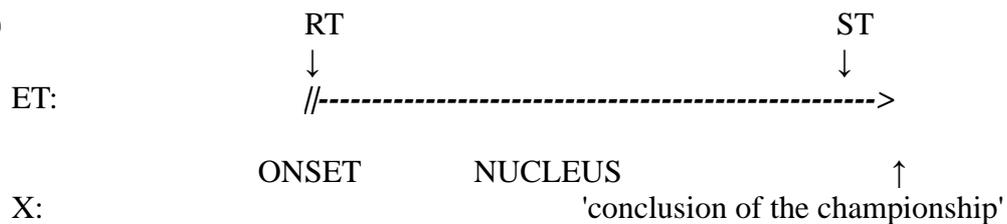
winning[VN:IV]-GEN DEF-championship DEF-Arabic

'The players have promised the president of the union ... that they will win the

Arab championship'

(arabiCorpus:080999SPOR09)

(274b)



In (274c) an iterative interpretation is unlikely and it is reasonable to suppose that what is being described is a state of covenant between Britain and Sharif Hussein which had been entered into at an unspecified time prior to RT, consistent with the event time diagram (274d). Indeed it is the stative nature of the relationship between the parties which renders my translation with 'was promising', which is progressive and thus

necessarily dynamic, somewhat clumsy. In the absence of a verb in English which fulfils the dual function of entry into state and state itself, a paraphrase might be preferable to maintain good English style.⁸⁴

(274c) [+imperfective] [+past]

ففي الوقت الذي كانت فيه بريطانيا تعاهد الشريف حسين على تحقيق الإمبراطورية
العربية...

fa-fī l-waqt alladhi kān-at fī-hā barīTānīyā tu ʿāhid-u

So-in DEF-time REL;MSG be;PST-3FSG in-OBJ.3FSG Britain promise;NPST.3FSG-IND

sh-sharīf Hussayn ʿalā taḤqīq-i l-'imbaraTūrīya il-ʿArabīya ...

DEF-Sharif Hussein on realisation-GEN DEF-empire DEF-Arabic

'So at the time when Britain was promising Sharif Hussein that the Arab Empire would be established ...'

(<http://www.ahewar.org/debat/show.art.asp?aid=25136>, 15 July 2009)

(274d)

ET:	RT	ST
	↓	↓
	//----->	
	ONSET	NUCLEUS

The following example (275), although somewhat archaic, includes another pattern III verb and conveniently contrasts state and entry into state in the same dialogue, with the same proviso concerning the use of the progressive in the English translation:

⁸⁴ It was noted in section 8.4.2.1 that there is no incompatibility between the Arabic [+imperfective] and verbs of STATE.

the closely defined time period specified by 'the journey to Egypt':

(271c) [+perfective] [+past]

قد تزوّج الانكليزيان ... بعد يوم واحد من وصولهما... وكانا قد تعارفا اثناء الانتقال الى

مصر

qad tazawwaj-a l-'inglīzīy-ān ... ba ʿda yawm wāhid min

PFV get_married;PST-3MSG DEF-English-DU.NOM after day one from

wuSūl-i-himā wa-kān-ā qad ta ʿāraf-ā

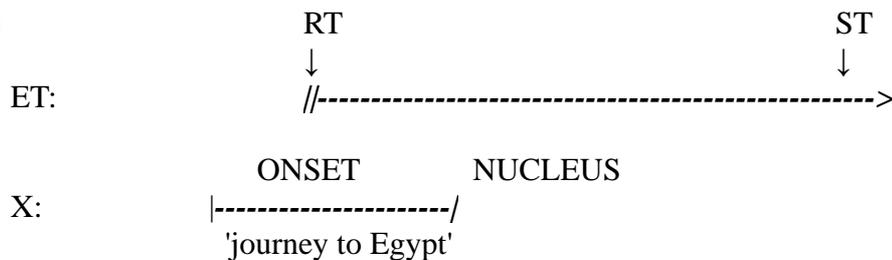
arrival-GEN-POSS.3DU and-be;PST-3MDU PFV get_to_know_each_other;PST-3MDU

'athnā'a l-intiqāl 'ilā maSr

during DEF-journey to Egypt

'The English couple got married ... one day after their arrival ... having got to know one another on the journey to Egypt' (arabiCorpus:GEN1996:12959)

(271d)



Finally, I will present evidence in support of inceptivity in a verb which less obviously involves entry into a new stative relationship:

(277) حاسب

[III]

Hāsaba (+ d.o.)

'to call (s.o.) to account / hold (s.o.) responsible'

There is a suggestion in Wehr's (1994) entry for this verb that it may be used both in the sense of a single instance of 'calling to account' and in that of a durative period of 'holding responsible'. However, we must ensure that this is not an artefact of translation and that both senses are indeed possible in Arabic usage. Consider the following sentences which were submitted to native speaker informants:

(278a) حاسب أحمد المدير مرات كثيرة

{YYY}

Hāsab-a 'aHmad-u l-mudīr marr-āt kathīr-a

call_to_account;PST-3MSG Ahmad-NOM DEF-director time-PL many-F

'Ahmad called the director to account many times'

(Questionnaire:24)

(278b) حاسب أحمد المدير طوال سنين كثيرة

{Y?Y}

Hāsab-a 'aHmad-u l-mudīr Tiwāla sin-īn kathīr-a

hold_responsible;PST-3MSG Ahmad-NOM DEF-director during year-PL.GEN many-F

'Ahmad held the director responsible for many years'

(Questionnaire:10)

- (278c) كان أحمد يحاسب المدير طوال سنين كثيرة {YYY}
kān-a 'aHmad-u yuHāsib-u l-mudīr Tiwāla
 be;PST-3MSG Ahmad-NOM hold_responsible;NPST.3MSG-IND DEF-director during
sin-īn kathīr-a
 year-GEN.PL many-F
 'Ahmad held [was holding] the director responsible for many years'
 (Questionnaire:43)
- (278d) ما زال أحمد يحاسب المدير {YYY}
mā zāl-a yuHāsib-u 'aHmad-u
l-mudīr
 NEG cease;PST-3MSG hold_responsible;NPST.3MSG-IND Ahmad-NOM
 DEF-director
 'Ahmad still holds the director responsible' (Questionnaire:30)
- (278e) يحاسب أحمد المدير منذ الحادث {Y??}
yuHāsib-u 'aHmad-u l-mudīr mundhu l-Hādith
 hold_responsible;NPST.3MSG-IND Ahmad-NOM DEF-director since DEF-incident
 'Ahmad is holding the director responsible since the incident' (Questionnaire:13)
- (278f) حاسب أحمد المدير منذ الحادث {NYY}
Hāsab-a 'aHmad-u l-mudīr mundhu l-Hādith
 call_to_account;PST-3MSG Ahmad-NOM DEF-director since DEF-incident
 'Ahmad called the director to account [held the director responsible] since the
 incident' (Questionnaire:16)

(278g) * يحاسب أحمد المدير حتى نهاية الأزمة *

{N?N}

yuHāsib-u 'aHmad-u l-mudīr Hattā nihāyat-i

hold_responsible;NPST.3MSG-IND Ahmad-NOM DEF-director until end-GEN

l-'azma

DEF-crisis

'Ahmad is holding the director responsible until the end of the crisis'

(Questionnaire:18)

Example (278a), which was acceptable to all three informants, is unambiguously iterative due to the adverbial phrase, hence my translation with 'called to account'. However, despite the temporally extensive adverbial in (278b), in which the verb is unmarked for grammatical aspect, and in (278c), in which it is marked [+imperfective], these sentences are both capable of interpretation either as a continuous state of 'holding responsible' or iterative events of 'calling to account'. Thus in the remaining examples I have attempted to minimise ambiguity by combining the verb with different adverbial phrases, though with limited success, in part due to the lack of agreement between informants except for example (278d) which remains somewhat ambiguous. Example (278e) shows some evidence for a stative interpretation, though it was not universally acceptable and somewhat surprisingly the informant who rated it as fully grammatical disagreed with the other two informants on the equivalent sentence containing the s-stem verb (278f). Moreover the responses for (278g) appear incompatible with those for (278e). I am therefore forced to conclude that the evidence from native speakers is unreliable and inconclusive for this verb. However, although it is difficult to find

unambiguous usages in the corpus, in the following example (279) the context gives a strong indication that the [+imperfective] verb is to be understood in a durative rather than an iterative sense:

(279) [+imperfective] [+past]

قال صدام خلال الحديث انه كان يحاسب أسرته أكثر من الآخرين

<i>qāl-a</i>	<i>Saddām</i>	<i>khilāla</i>	<i>l-Hadīth</i>	<i>'anna-hu</i>
say;PST-3MSG	Saddam	during	DEF-interview	that-OBJ.3MSG
<i>yuHāsib-u</i>		<i>'usrat-a-hu</i>	<i>'akthar</i>	
hold_responsible;NPST.3MSG-IND		family-ACC-POSS.3MSG	much;CMPR	
<i>min</i>	<i>al-'ākhar-īn</i>			
from	DEF-other;MPL-GEN			

'Saddam said during the interview that he held [was holding] his family responsible more than the others'

(<http://www.paleyad.com/vb/showthread.php?p=45299>, 16 July 2009)

Unlike the previous examples, where the nucleus phase clearly represents a state, it is possible that the situation described by the nucleus phase of this and other similar verbs may be dynamic, in which case they are INCEPTIVES OF ACTIVITY. As previously discussed, in the absence of an equivalent of the progressive aspect which is such a useful tool for ascertaining dynamicity in English, it would be necessary to test demonstrably durative examples of each verb with a range of adverbials such as 'deliberately', 'carefully' or 'gradually', none of which are compatible with static

situations. This might be a fruitful area for further research, though at present it will suffice to conclude that these verbs are INCEPTIVES, whether of ACTIVITY or of STATE. As such, we note that they are [+dynamic] in onset, [+durative] and possibly [+dynamic] in nucleus, but unmarked for telicity in coda.

10.4 Summary

We have demonstrated that it is necessary to establish a category of INCEPTIVE verbs cross-linguistically and have further subdivided this category into INCEPTIVES OF STATE and INCEPTIVES OF ACTIVITY. Each of these lexical aspect categories has been described in terms of the privative features elaborated by Olsen (1997), but within a triphasic scheme which includes an optional onset, obligatory nucleus and optional coda, the presence of an onset only being permitted when the coda is absent and vice-versa.

The pattern III and pattern VI verbs which were identified in the previous chapter as having meanings involving dynamic entry into durative situations, and were thus considered anomalous within the existing scheme, have been explained satisfactorily within the newly defined INCEPTIVE categories. As such, they have been found to be unmarked for telicity in coda, i.e. [Øtelic].

This completes the work of categorising $C_1\bar{a}C_2$ sequence verbs for lexical aspect: conclusions will be drawn in Chapter 12.

Chapter 11

The passive in patterns III and VI

Several times in earlier chapters the question of passivisability, especially for verbs in patterns III and VI, has been raised. In section 7.1, it was noted that the only pattern III word form without long \bar{a} is the s-stem passive verb ($C_1\bar{u}C_2iC_3$) and the same is true of pattern VI ($tuC_1\bar{u}C_2iC_3$). We therefore concluded in section 7.2.2.1 that 'it is specifically the long \bar{a} which is basic to the pattern'. Here I will seek to question this conclusion, since, if it is valid, we might expect a degree of incompatibility of these patterns with passivisation by vowel melody change. Furthermore, it was suggested in section 7.3.2.1 that, due to the mutual-reciprocal semantics common to these patterns, there is often no true patient, even when the verb is formally transitive. This precludes both actional passive formation by vowel melody change and statal passives expressed with the passive participle. However, does the reluctance to passivise extend to other verbs in these patterns also?

These are the questions which I propose to investigate briefly in this chapter, indicating possible avenues for further research where appropriate. In addition to issues concerning passivisation, I will also comment on the verbal noun forms for patterns III and VI.

11.1 Passive formation by vowel melody change

Recall that in section 3.2.1 we introduced the concept of three morphemic tiers in Arabic

word formation. The templatic tier, whether treated as a CV skeleton or as a prosodic template, provides the base structure for a given verbal pattern, into which root consonants are inserted together with a vowel melody, i.e. the sequence of vowels which produces a fully vocalised stem. Recall also that the ضمة (*Damma*) or *u* vowel is characteristic of the passive, occurring in the sequence *u – i* for the s-stem and *u – a* for the p-stem verb. However, in the derived patterns there may be three or even four syllables for which vowels must be supplied and, since the vowel melodies for s- and p-stems propagate differently across the template, the resulting forms for patterns III and VI are as shown in Table 74.

	s-stem passive	p-stem passive
pattern III	$C_1\bar{u}C_2iC_3$	$yuC_1\bar{a}C_2aC_3$
pattern VI	$tuC_1\bar{u}C_2iC_3$	$yutaC_1\bar{a}C_2aC_3$

Table 74: Pattern III and pattern VI passive verb forms

Thus it is in the s-stem verb alone that the long vowel between C_1 and C_2 is \bar{u} . Although I have already presented evidence from nominal forms in Chapter 7 which suggests that it is specifically the \bar{a} vowel, resulting from the combination of the active vowel melody with the template, which is characteristic of verbs in patterns III and VI, by examining the compatibility of verbs in these patterns with the actional passive, we may be able to investigate further whether it is the specific vowel or vowel lengthening in general which is important.

11.1.1 Corpus data evidence

Unlike the other verbal patterns, in which the passive vowel melody is indistinguishable from its active counterpart in unvowelled text, the vowel lengthening in patterns III and VI conveniently results in an orthographic distinction. Thus, for example, we may use the corpus search string *كوتب* (*kwtb*) to return all instances of the passive s-stem for the verb *كاتب* (*kātaba*) and similarly for the pattern VI equivalent. Thus the corpus token counts in this section were all obtained by searching the *arabiCorpus* newspaper corpus⁸⁵ for the appropriate s-stem passive forms.

The verbs in examples (280) - (284) all returned zero token counts:

(280) *كاتب* [III]

kātaba (+ d.o.)

'to correspond with (s.o.)'

(281) *قاتل* [III]

qātala (+ d.o.)

'to fight [with] (s.o.)'

(282) *سافر* [III]

sāfara

'to travel, set out on a journey'

(283) *تكاتب* [VI]

takātaba

'to correspond together'

⁸⁵ Accessed 23-24 July 2009.

(284) تقاتل [VI]

taqātala

'to fight together'

Clearly the last three examples are intransitive, thus passivisation is impossible, but the zero token counts for examples (280) - (281) provide evidence that transitive verbs of this type, where the direct object is a co-participant in the action and hence not patient, also do not form an actional passive. In section 5.2.2.1, recognising that the entities represented by grammatical subject and direct object may participate in the action described by a verb asymmetrically whilst still involving a degree of mutuality, I classified the verb in (285) as mutual:

(285) عاون في [III]

ʿāwana (+ d.o.) *fī* (+ i.o.)

'to help, assist (s.o.) in/with (s.th.)'

On the basis of the English translation, we might expect this verb to passivise readily, but the corpus count again returned zero tokens, suggesting that it also resists formation of the actional passive.

In section 7.3.1.1 it was noted that, recent developments in the language excepted, the actional passive construction in MSA does not permit the type of agentive *by*-phrase which is optionally present in the English passive construction. Thus the Arabic actional passive construction does not merely bring the patient into the

foreground relative to the agent by making the patient subject, it removes reference to the agent altogether. In terms of valency, one of the verbal arguments is deleted, such that the numeric valency of the verb in the actional passive is reduced by one.

It appears, therefore, that it is this deletion of the agent which is resisted by verbs such as example (285), consistent with the emphasis on agency and process, as opposed to patiency and result, noted in section 7.3.2 both for pattern III and pattern VI verbs and for noun templates containing long *ā*. Resistance to forming an actional passive also extends to many transitive verbs in these patterns with no obvious implication of participation in the action on the part of the direct object. Thus (286), previously encountered in section 9.1.2.4.2, also returned a corpus token count of zero.

(286) نَاهَز [III]

nāhaza (+ d.o.)

'to attain, reach, seize (s.th)'

However, it is not true to say that actional passives are completely excluded for transitive pattern III verbs. The verb in example (287a) was used to illustrate verbs of surprise in section 9.1.2.1 and is very commonly encountered in the actional passive form, returning 2,652 corpus tokens. It is perhaps noteworthy, however, that the equivalent of the English paraphrase using the active in (287b), in which the subordinate clause is subject, is not viable in Arabic, rendering use of the passive unavoidable.

(287a) فوجئت بأن عددا كبيرا من المصريات لم يذهبن الى الهرم

<i>fūji'-tu</i>	<i>bi-'anna</i>	<i>ع adad-an</i>	<i>kabīr-an</i>
surprise;PST.PASS-1SG	with-that	number-ACC.INDF	large-ACC.INDF
<i>min al-maSrī-āt</i>	<i>lam</i>	<i>yadhhab-na 'ilā</i>	<i>l-haram</i>
from DEF-Egyptian-FPL	NEG	go;NPST;3-FPL to	DEF-pyramid

'I was surprised that a large number of Egyptian women did not go to the pyramid' (arabiCorpus:021799AMOD02)

(287b) 'That a large number of Egyptian women did not go to the pyramid surprised me'

11.1.2 Native speaker evidence

Although investigation of passivisability was not the primary purpose when obtaining questionnaire responses from native speaker informants, some of the data collected will be of interest here. The responses of native speakers for six transitive verbs which we have previously encountered in other examples are summarised in Table 75. The sentences used to elicit the responses may be consulted in Appendix III. Note that (Questionnaire:21) largely confirms the findings for the same verb in (287a) above. However, it is clear that acceptability of the actional passive is highly variable, both between different verbs and for different speakers assessing the same verb. If passivisability by this mechanism were a formal property of the patterns, we might expect a greater degree of unanimity between informants.

verb	transliteration	translation	responses	questionnaire reference
بارك	<i>bāraka</i>	'to bless'	{YNY}	44
جاور	<i>jāwara</i>	'to adjoin'	{NYN}	3
جاوز	<i>jāwaza</i>	'to surpass'	{NNN}	14
حاسب	<i>Hāsaba</i>	'to hold responsible'	{YYY}	52
فاجأ	<i>fāja'a</i>	'to surprise'	{Y?Y}	21
قاتل	<i>qātala</i>	'to fight'	{?N?}	5

Table 75: Actional passive: Native speaker informant responses

11.1.3 Conclusion

Although we may conclude from the corpus data that there is evidence that most pattern III and pattern VI verbs do not readily form an actional passive, this construction is not only allowable but common for a minority of verbs. On the basis of this data and incorporating the limited native speaker responses I have gathered, I tentatively conclude that actional passive formation is most likely a matter of the semantics of the individual verb, rather than a formal property of the patterns themselves. However, this does not preclude the possibility that further research into passivisability by the mechanism of vowel melody might uncover other properties shared by verbs which either do or do not enter into this construction. That the *ū* vowel itself is not entirely incompatible with the patterns suggests that it is vowel lengthening rather than vowel identity in the pattern templates which is indicative of atelicity, a matter which will be discussed further in the concluding chapter.

11.2 Passive participle formation

The passive participles for patterns III and VI take the forms $\text{muC}_1\bar{a}\text{C}_2\text{aC}_3$ and $\text{mutaC}_1\bar{a}\text{C}_2\text{aC}_3$ respectively. As such, they exhibit the long \bar{a} which we have come to associate with agency and process.⁸⁶ Since the nature of the passive participle or 'done' form is that it designates patiency and result, and if our analysis thus far is correct, this raises the possibility of a conflict between form and meaning. We will therefore examine evidence regarding passive participle formation and usage for patterns III and VI.

11.2.1 Dictionary evidence

Entries for all pattern III and pattern VI verbs attested in Wehr (1994) were examined and instances of the corresponding passive participle were recorded. We must proceed with caution in assessing this data, since Wehr (1994:xiii) states that 'participles ... are listed as separate items only when their meaning is not immediately obvious for the verb, particularly where a substantival or adjectival translation is possible'. However, the frequency with which the passive participles of these patterns are listed is remarkably low compared, for example, with pattern II passive participles or indeed with pattern III and pattern VI active participles. Ryding (2005:209,549) confirms their infrequency, all her examples being among those counted in Table 76 and listed in Appendix IV.

⁸⁶ See section 7.3.2.1

	pattern III	pattern VI
passive participles	15	6
total verbs	465	389
percentage	3.2%	1.5%

Table 76: Pattern III and pattern VI passive participles

Of the 21 attested word forms matching the templates, many are atypical in some way of passive participles generally. Example (288) has a specialised meaning which suggests use of a lexical gap for a recent coinage:

(288) معاقَب [PPT:III]

mu ʿāqab

'suspended [player / club (sport)]' [verb: 'to punish (s.o.)']

The grammatical term in example (289) is also specialised and, although its provenance from the verbal meaning is clear, it may notably only be used as a noun, having no adjectival resultative usage.

(289) منادى [PPT:III]

munādan

'noun in the vocative' [verb: 'to call out (s.th.)']

Also used exclusively nominally, examples (290) and (291), whilst undeniably representing patients of the corresponding verbs, are effectively agentive nouns of

occupation:

- (290) مشاور [PPT:III]
mushāwar
 'advisor / consultant' [verb: 'to seek advice from / consult (s.o.)']
- (291) مياوم [PPT:III]
muyāwam
 'day labourer' [verb: 'to hire by the day']

However, the following example (292) not only has an active sense but represents performance of the corresponding verb itself, which, being intransitive in this usage, defies definition of any patient or result upon it, suggesting that the active participle would be a more appropriate form:

- (292) متداول [PPT:VI]
mutadāwal
 'current / circulating' [verb: 'to be current, in circulation']

It is unclear for examples (293) and (294) exactly how they represent the result of performing the corresponding verb, while clearly sharing a root meaning with it:

- (293) متقاضى [PPT:VI]
mutaqāDan
 'subject to prosecution' [verb: 'to carry on a lawsuit (together)']
- (294) متناول [PPT:VI]
mutanāwal
 'attainable / within reach' [verb: 'to reach for (s.th.)']

However, example (295a) is probably unrelated to the corresponding pattern III verb, instead sharing a basic meaning with several nominal/adjectival forms (295b) which appear to be derivatives of an absent pattern I verb:

- (295a) موارب [PPT:III]?
muwārab
 'ajar' [verb: 'to double-cross, outsmart (s.o.)']
- (295b) وراَب ورب موروب
wirāb *warb* *mawrūb*
 'obliqueness' 'obliqueness/slant' 'slanting/ajar'

11.2.2 Native speaker evidence

With the aforementioned proviso that an investigation into passivisability was not the primary aim of conducting native speaker questionnaires, the data which were obtained are presented in Table 77:

verb	transliteration	translation	responses	questionnaire reference
بارك	<i>bāraka</i>	'to bless'	{?Y?}	36
جاور	<i>jāwara</i>	'to adjoin'	{Y?Y}	7
جاوز	<i>jāwaza</i>	'to surpass'	{YNY}	11
حاسب	<i>Hāsaba</i>	'to hold responsible'	{?Y?}	38
فاجأ	<i>fāja'a</i>	'to surprise'	{NNN}	46
قاتل	<i>qātala</i>	'to fight'	{YYN}	20

Table 77: Passive participle: Native speaker informant responses

Once again, the response from native speaker informants is confused, with high variability between informants for the same test sentences. The only passive participle which elicited consistent results was that of the verb فاجأ (*fāja'a*), used as an example of verbs of surprise in section 9.1.2.1. Some comments follow on the variability of responses:

- i. Because of the highly systematic nature of Arabic morphology it is possible for a native speaker (or indeed any learner with knowledge of the templates) to reproducibly generate words which they have never encountered in real language.⁸⁷ Thus since all the passive participles presented in the questionnaire were generated by me from actual verbs according to the appropriate template, the reaction of native speakers may err towards considering them valid words, even if their semantics suggest that their use might be problematic. If so, it is possible that native speakers (or at least those surveyed) are insufficiently critical of well-formed but semantically doubtful words for their responses to be helpful.

⁸⁷ See also Cuvalay-Haak (1997:89).

Further testing with more contextually embedded examples might alleviate this problem.

- ii. Native Arabic speakers are accustomed to reading unvowelled texts. The passive participles in the questionnaire were specifically marked with critical vowelling to avoid confusion with the active participles which differ only by one vowel. However, informal discussion with one of the participants subsequent to processing the questionnaire results revealed that he may have unconsciously 'corrected' my vowelling and mentally substituted the active participle. Whilst it was too late to correct the methodology in this study, I would suggest that any future investigation might be less subject to error if the examples were presented orally, where the vowel alternation would be more readily apparent.
- iii. Possibly related to the previous point, when asked what the meaning of the passive participle of جاور (*jāwara* – 'to adjoin') might be, at least one informant was unable to separate it semantically from the active participle. In any further survey, it is suggested that participants might be asked to define the words being tested.
- iv. Of the passive participles tested here, only that from the verb بارك (*bāraka*), which was investigated in section 9.1.2.4.2, is actually listed by Wehr (1994). The passive participle مبارك (*mubārak*), being the name of the current President of Egypt, is a word which will sound familiar to Arabic speakers. Thus the finding that two informants found its use unacceptable may be more a matter of the context in which it was presented than its acceptability as a valid form.

Thus data from native speakers informants are inconclusive and further research with a focus on the passive participle and improved methodology is indicated.

11.2.3 Corpus data evidence

It is unfortunately impossible to distinguish in an unvowelled text between the majority of past participle forms in patterns III and VI and the corresponding active participles, since they differ only in the vowelling on C_2 . The exception to this generalisation is where C_3 is weak as in (289) and (293), where the passive participle is written with final *alif maqSūra* (ى). However, even a search for this kind of passive participle is problematic, since many Arabic newspapers and other printed sources fail to distinguish systematically or consistently between *alif maqSūra* and final *yā* (ي), which risks confusion with the definite form of the corresponding active participle, and there is also a broken plural form from a base pattern noun with weak final consonant which may be similarly confused. Thus it is not a simple matter to conduct an exhaustive corpus search.

Data obtained from *arabiCorpus* do reveal that examples (289) and (293), while attested in the dictionary, are absent from the corpus.⁸⁸ However, while I am convinced that the majority of the matches returned by corpus searches for passive participle strings are actually returning active participles, the sheer volume of data makes it impossible to examine each instance individually in context, which is the only recourse in the absence of formal orthographic distinction. For example, for the verb *جاور* (*jāwara*), a search for the string *مجاور* (*mjāwr*) returned 6,898 tokens: even after discounting over 6,000

⁸⁸ Data in this section obtained from *arabiCorpus* newspaper sub-corpus, searched 27-28 July 2009.

instances of the pattern III verbal noun, which also contains the string, this leaves over 800 instances which could be of either participle.

11.2.4 Conclusion

Passive participle forms from patterns III and VI are undoubtedly rare. Where they do occur, many appear to have a meaning which is compatible in some way with agency. Further research with a specific focus on the passive participle and a targeted methodology is suggested. However, preliminary study indicates that instances of conflict between formal realisation with \bar{a} , which has otherwise been shown to have connotations of agency and process, and resultative passive meaning are minimal.

11.3 Verbal noun forms

Although not directly related to passivisation, I will briefly discuss the verbal noun forms here, both because of the formal similarity of two of the three templates to the passive participles and because this is another area in which further research is suggested, since there is an interesting form-meaning interaction which bears investigation.

In section 7.3, four verbal noun forms are listed for pattern III, only two of which, $\text{muC}_1\bar{a}\text{C}_2\text{aC}_3\text{a}$ and $\text{C}_1\text{iC}_2\bar{a}\text{C}_3$, are in common use, with 263 and 64 dictionary entries respectively, including 46 where both exist for the same verb, while the only pattern VI verbal noun form is $\text{mutaC}_1\bar{a}\text{C}_2\text{aC}_3\text{a}$. Thus the most common form for pattern III and the only form for pattern VI closely resemble the corresponding passive participles, differing only in that the verbal nouns show feminine inflection. Since the

verbal noun denotes performance of the action of the verb or an instance thereof, the notion of long \bar{a} as denoting agency and process is entirely compatible. The obvious Saussurean research questions are whether there is any semantic significance in the form which the pattern III noun takes for a given verb, any correlation with other properties of the verb and, if so, whether any light may thus be shed on the significance of the position of long \bar{a} in the template. Put simply, one verbal noun retains the $C_1\bar{a}C_2$ sequence of the corresponding verb and the other does not and Saussurean structuralism dictates that this alternation be accompanied by an accompanying alternation in meaning, though Ryding (2005:506) allows that where they coexist, they may have 'either equivalent or slightly different meanings', while Badawi et al. (2004:79) state that 'the principle of selection is not clear and is best left as a lexical item'. The question of the alternate forms is beyond the scope of the present research, thus further investigation is required.

11.4 Summary

Whilst both actional and statal or resultative passive constructions seem to sit somewhat uneasily with the pattern III and pattern VI verbs, for reasons which have been outlined above, further research is needed into passivisability for these patterns. However, we can proceed to draw final conclusions in the following chapter on the following basis: it is vowel lengthening in the C_1vC_2 sequence which is characteristic of patterns III and VI, and hence the formal marker of atelicity; active vowel lengthening with \bar{a} shows a far greater degree of compatibility with these patterns as a whole, thus passive \bar{u} is rarely encountered and the association of \bar{a} with agency and process seen in nominal forms is

maintained in most verbal usage.

Chapter 12

Conclusions

12.1 Overview

From the outset, it was noted that Arabic possesses a highly systematised morphology, most clearly observed in its verbal patterns, which is described and its instances enumerated in Chapter 2. From a Saussurean perspective, a language which specifies morphological form so clearly and rigidly is an ideal candidate for investigation of form-meaning relationships. Data were presented demonstrating that the distribution of verb forms by pattern is not random and that patterns morphologically derived from one another have a tendency to co-occur for the same root. However, the nature of Arabic morphology is also that it is highly complex and multi-layered, challenging traditional descriptions of the morpheme. We observed in Chapter 3 that there is a lively debate in progress concerning the basis of derivation in Arabic, but concluded that there is evidence that morphemic input into a given word form takes place at three levels: root, prosodic or CV skeleton, and vowel melody (McCarthy & Prince 1990a). Thus formal morphemic description is achievable.

However, turning to semantics, it became clear in Chapter 4 that while attempts have frequently been made to characterise the meanings of the verbal patterns, no definite conclusions have been drawn which suggest that the Saussurean systematic link between *signifiant* and *signifié* has been firmly established for any of the 19 patterns available to trilateral and quadrilateral roots. In Chapter 5, examining the

morphologically related patterns III and VI, the most consistently recognised meanings of mutuality and reciprocity were effectively presented as accepted thesis. However, although this constitutes the most successful explanation of the meaning of these patterns to date, between a quarter and a third of these verbs were shown to be semantically antithetical: lexical exceptions to mutual-reciprocal meaning.

Aware that transitivity and detransitivisation (or more properly valency change) have been suggested as derivational properties elsewhere in the verbal system, a hierarchical valency approach was developed in Chapter 6 to examine the *ta-* prefix morpheme which, amongst other pairs, derives pattern VI from pattern III. Despite the success with which this morpheme was shown to reduce transitivity, a similar approach found no evidence that pattern III derivation from the base meaning of pattern I shows any consistent component of valency change.

Noting that formal parallels have been drawn between pattern III (and VI) vowel lengthening and that seen in some broken nominal plurals, the notion of verbal plurality was explored in Chapter 7. More promising, however, was the formal similarity noted in numerous nominal templates, suggesting that the long *ā* characteristic of pattern III and pattern VI verbal forms is associated elsewhere in the language system with agentivity, process and temporal complexity. This led us to posit that lexical aspect might be key to understanding and characterising patterns III and VI. Thus, after a consistent and workable model of aspectuality was established in Chapter 8, a detailed examination of lexical aspect in patterns III and VI was undertaken in Chapter 9.

Having established that a new lexical aspect category of INCEPTIVE is required to explain a significant number of Arabic verbs, including many in patterns III and VI,

our model of aspectuality was further developed in Chapter 10, and it was discovered that English also possesses a restricted set of verbs of posture which must properly be described as INCEPTIVE. Finally, we have been treating the long \bar{a} vowel as a single morph, whereas templatic/prosodic theory suggests that it is actually the surface realisation of two morphs on different tiers, namely the template containing the Cvv first syllable which contributes vowel lengthening and the active vowel melody which contributes the specific vowel identity. Thus in Chapter 11 we briefly explored data on passivisability in order to investigate whether there is any inconsistency in regarding the long \bar{a} , a product of the combination of vowel lengthening with active vowel melody, as a specific characteristic of patterns III and VI in contrast with vowel lengthening alone.

It will now be appropriate to draw specific conclusions concerning form and meaning in verbal patterns III and VI on the basis of the evidence presented in the preceding chapters and finally to suggest some possible implications for the language system of MSA as a whole and further avenues of research.

12.2 The characteristics of patterns III and VI

12.2.1 Form

We may now formalise the conclusions drawn from the evidence concerning form presented in Chapter 11 and place them in the context of prosodic templatic morphology, isolating the templatic contribution of vowel lengthening from the identity of the vowel itself.

- i. The formal characteristic of Arabic verbal pattern III is a triconsonantal templatic

morph with a bimoraic (heavy) first syllable of the type Cvv, manifested with the specific vocalisation supplied by the appropriate vowel melody, including lengthening of the vowel following the first consonant supplied by the root.

ii. The formal characteristics of Arabic verbal pattern VI are the triconsonantal templatic morph of pattern III and additional prefixed *ta-* morph, manifested with the specific vocalisation supplied by the appropriate vowel melody, including lengthening of the vowel following the first consonant supplied by the root.

12.2.2 Meaning

An interim summary of telicity in patterns III and VI was presented in Table 70 in section 9.2, pending further investigation of verbs identified as potentially inceptive. We are now in a position to incorporate the findings of Chapter 10 into that data summary, noting from Table 78 that, whatever measure is employed, characterisation of patterns III and VI as atelic has a success rate of over 99%. To state this in terms of lexical exceptions, only five true exceptions are recorded, only one of which is demonstrably in contemporary usage.

	[Øtelic]	[+telic]	excluded
dictionary count	945 (99.2%)	5 (0.5%)	3 (0.3%)
corpus type count	658 (99.5%)	1 (0.2%)	2 (0.3%)
corpus token count	184,739 (99.8%)	108 (0.1%)	193 (0.1%)

Table 78: Final categorisation of pattern III and pattern VI verbs by telicity

Thus, to state our conclusions regarding meaning simply:

- i. The form of Arabic pattern III verbs gives rise to atelic meaning.
- ii. That component of the form of Arabic pattern VI verbs which is common to pattern III likewise gives rise to atelic meaning.

12.2.3 Relating form and meaning

Combining the preceding statements on form and meaning, isolating the specific formal characteristic concerned and unifying reference to patterns III and VI:

The Arabic triconsonantal verbal templatic morph with a bimoraic (heavy) first syllable of the type Cvv gives rise to atelic meaning.

This is the irreducible finding of this research: we may wish to phrase it less technically for the non-Arabist:

The Arabic vowel lengthening verbal patterns give rise to atelic meaning.

12.3 Directions for further research

12.3.1 Nominal aspect

Aspect is a cross-linguistic grammatical category applicable to verbs and as such has been the topic of several of the preceding chapters. However, we noted in Chapter 7 that the striking formal similarity between the Arabic atelic verbal patterns III and VI and a number of nominal patterns within the language system is accompanied by commonalities of meaning. Whilst it is not unexpected that nominal forms which are

actually verbal participles carry an aspectual burden, and indeed in English grammatical aspect is expressed in the form *auxiliary + participle*, there appears to be an extension of the concept of aspect in Arabic into other nominal forms, such that those which are formally similar to verbal pattern III evoke a sense of atelicity, imperfectivity (or temporal complexity) and durativity, for example the nouns of instrument and occupation encountered in section 7.3.1. However, there are also cross-linguistic implications: if lexical aspect is a valid nominal category in Arabic, might it be applicable to other languages, even to those such as English where lexical aspect rarely has morphological realisation? For example, taking the near-synonymous terms in (296a-c), might their meanings be nuanced by the understanding that the first displays agency and the second patiency whilst the third is neutral?

(296a) student

(296b) trainee

(296c) pupil

Furthermore, there is an open-endedness about (296a) which suggests atelicity, whereas the clear difference between examples (297a-b) demonstrates that the situation represented by (296b) is telic, i.e. it is temporary, pending the endpoint of completion of the training.

(297a) The patient was attended by a trainee nurse.

(297b) The patient was attended by a trained nurse.

I therefore envisage research which explores the validity of morphologically expressed lexical aspect in the Arabic noun and, if fruitful, extends the concept of aspect in the noun cross-linguistically.

12.3.2 Aspect and passivisability

Although the need for further research into compatibility of patterns III and VI with both actional and resultative passives was noted in Chapter 11, there are wider implications both for the language system of MSA and cross-linguistically. Concerning the passive in English, German and Russian, Beedham (2005:57) concludes 'that the passive is an aspect', by which he means a grammatical aspect. Whilst we have observed an interaction in MSA between verbal lexical aspect and passivisability, are there grounds for considering either or both of the vowel melody actional passive and the participial resultative passive to be manifestations of grammatical aspect? In examining the resultative passive, we may wish to remember that the Arabic passive participle is essentially the 'noun of done', with the implication of telicity which that carries. Having already established the usefulness of Olsen's (1997) scheme for explaining the interactions between lexical and grammatical aspect, I would wish to conduct any examination of the Arabic passive as aspect in the same theoretical context, conscious, moreover, that if Beedham's claims are valid then any application of Olsen's scheme may reasonably be expected to be capable of explaining the passive in the languages he has studied also.

12.3.3 Inceptivity of state and of activity

It was demonstrated in Chapter 10 that both INCEPTIVES OF STATE and INCEPTIVES OF ACTIVITY are predicted by my extension to Olsen's (1997) lexical aspect categories. I have shown that the former are present in Arabic and the latter in English, and, whilst allowing that Arabic may exhibit both categories, further research which establishes a conclusive test to distinguish ACTIVITY from STATE is needed to confirm or deny this. Furthermore, those with expertise in other languages may wish to investigate which of these categories, if either, is attested elsewhere and indeed whether there is any evidence that there is a cross-linguistic need to introduce DURATIVE INCEPTIVE categories, i.e. for verbs marked [+durative] in onset.

12.3.4 Alternative verbal noun forms

In that form gives rise to meaning, the formation of verbal nouns from patterns I – III according to alternative templates⁸⁹ is a clear invitation to research the meanings of these templates. Since pattern I verbs give rise to a plethora of different and diverse verbal noun forms, and since the semantics of pattern III have already been thoroughly investigated, I would propose starting with pattern III and then applying any insights gained to the other patterns in turn. Since the only two common templates for pattern III verbal nouns differ according to whether the long *ā* vowel is in C₁*ā*C₂ or C₂*ā*C₃ position, a possible avenue to explore is whether there are parallels in other nominal forms which show this alternation.⁹⁰

⁸⁹ Wright (1967:I.116) notes rare alternatives for other patterns also.

⁹⁰ See the tables in section 7.3.

12.3.5 Defining atelicity

Whilst the evidence leading to the conclusion that vowel lengthening in the verbal patterns corresponds with atelic meaning is overwhelming, there remains an inconsistency in our analysis: specifically, what we have discovered is not that verbs in these patterns are atelic but that they show absence of [+telic] privative feature marking. Recall that in Olsen's (1997) scheme the opposition is between [+telic] privative feature marking and [Øtelic] zero marking and not between the equipollent features [+telic] and [-telic] (or [+atelic]). Olsen simply does not allow in her analysis that atelicity may be a marked feature. How, then, do we resolve this inconsistency?

The obvious solution is to assert that vowel lengthening in patterns III and VI corresponds with [Øtelic] meaning. However, this is problematic for two related reasons: the first stems from markedness theory and the second from Saussurean structuralism. It is clear that pattern III is formally marked relative to the base pattern I, i.e. it is more complex morphologically, specifically on account of vowel lengthening in the first syllable of the s-stem.⁹¹ Frequency data for pattern III also support the notion that it is a marked form. As such, we would expect it to correspond with a typologically marked category, whereas in Olsen's analysis [Øtelic] designates verbs unmarked for telicity, i.e. in the default condition for telicity. Thus to propose that pattern III is marked for the condition [Øtelic] is arguably self-contradictory since we are claiming that it is marked for unmarkedness. The related Saussurean objection becomes clear when we note that many pattern I verbs, including examples used in previous chapters, also belong to the lexical aspect categories which are unmarked for telicity. If the morphologically

91 Greenberg's (1966:26) 'zero expression of the unmarked category'. Greenberg (1966:29) also notes 'the lesser degree of morphological irregularity in marked forms', referring to the lack of alternative vowelings in the Arabic derived verbal patterns.

unaugmented pattern I is in widespread use for verbs with [Øtelic] meanings, then the additional formal complexity of vowel lengthening might be considered redundant: it 'adds' form without necessarily adding meaning.

Can the inconsistency be resolved by allowing [+atelic] privative feature marking? This proposal counters the objections raised in the previous paragraph if it can be demonstrated that verbs in patterns III and VI possess uncancellable atelic meaning. There is no *a priori* reason why Olsen's scheme cannot be extended to incorporate lexical aspect categories in which [+atelic] feature marking contrasts with zero marking in the same way that [+imperfective] and [+perfective] privative features for grammatical aspect are set in opposition with zero marking rather than with one another. However, we would need to be convinced that new lexical aspect categories are required in Arabic which are distinguished from those already identified on the grounds of inherent atelicity which may not be pragmatically cancelled. Demonstrating her point with English examples in which an atelic ACTIVITY is rendered telic by context, Olsen (1997:19) maintains that '[t]elicity, that is, the [+telic] feature, should ... be part of the semantic representation of lexical aspect; atelicity ... should not'. It is not difficult to find examples in Arabic, such as (298) which contains the familiar pattern III verb قاتل (*qātala*), in which atelicity is cancelled pragmatically in compositional context and an endpoint introduced, thus demonstrating that [Øtelic] is the correct analysis.

(298) المعارضة العراقية لن تقاتل حتى الموت

*al-mu*عāra*Da al-ع*irāqīya *lan tuqātil-a Hattā l-mawt*

DEF-opposition DEF-Iraqi NEG.FUT fight;NPST.3FSG-SBJV until DEF-death

'The Iraqi opposition will not fight to the death' (arabiCorpus:GEN1996:4022)

Having ruled out the above solutions, I tentatively propose a third in which the morphological form of pattern III makes a positive contribution to meaning while retaining the analysis of these verbs as [Øtelic]. We established in Chapter 6 that the prefixed *ta-* morph is detransitivising, contributing the property of valency reduction or minimisation to pattern VI with very few exceptions. Thus it has no meaning in itself but rather modifies existing meaning: we may conceptualise its derivational effect as cancelling a syntactically required element of the verb or reducing the directness with which the element is addressed by the verb. In a similar manner, I propose that the vowel lengthening derivation of pattern III cancels or blocks [+telic] marking. Of course, this only becomes obvious when the pattern III verb has a pattern I equivalent from the same root which is marked [+telic]. Let us consider again the verbs in (299a-c):

(299a) قاتل [I]

qatala (+ d.o.)

'to kill (s.o.)'

(299b) قاتل [III]

qātala (+ d.o.)

'to fight [with] (s.o.)'

ACHIEVEMENT or an ACCOMPLISHMENT will be accompanied by a sense of conativity when the [+telic] marking of the root is 'blocked', whereas derivation from a root which is already [Øtelic] implies no conativity. Otherwise formulated, if a root meaning designates a [+telic] result (ACHIEVEMENT or ACCOMPLISHMENT), the pattern III derivative verb designates the [Øtelic] ACTIVITY of attempting to bring about that result, whereas if no resulting endpoint is designated by the root meaning, no sense of conativity is required to interpret the derived verb as an ACTIVITY.

Clearly, further research is required to support this 'blocking' hypothesis, in particular a detailed examination of pattern III meanings in relation to their pattern I counterparts.

12.4 Summary

Beginning with the Saussurean concept of the linguistic sign and the belief that within it *signifiant* and *signifié* are inextricably linked, and also inspired by Beedham's premise that lexical exceptions are a means to gaining insight into the very grammatical rules they appear to violate, we have investigated two of the verbal patterns of Modern Standard Arabic, namely those displaying vowel lengthening, with respect to their form and meaning. The chapters which precede the discovery that it is atelic aspectual meaning which characterises these patterns place into the wider context the significance of this finding.

Whether this research will have much didactic application to Arabic or impact upon future reference grammars of the language is uncertain. However, it is undoubtedly of far greater interest to the linguistic scholar. Firstly, it firmly establishes the existence

of derivationally realised lexical aspect, as distinct from the inflectional grammatical aspect commonly recognised in Arabic. Secondly, if not entirely serving to validate Beedham's method, due to its significant departures from his original methodology, it upholds the value of searching for systematicity within apparent chaos. Moreover, the discovery of the inceptive lexical aspect category in Arabic did ultimately stem from identifying a class of exceptions and seeking to explain them. Thirdly, in establishing sound arguments for both adopting and extending Olsen's model of aspect, significant contributions have been made to advancing a Vendlerian understanding of lexical aspect categories cross-linguistically.

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Appendix I

Data tables

The following data files are included as digital appendices in PDF format:

VERBAL OCCURRENCES LISTED BY ROOT AND PATTERN

Triliteral:	Roots_and_patterns_tri.pdf	(198 pages)
Quadriliteral:	Roots_and_patterns_quad.pdf	(14 pages)

CLASSIFICATION OF VERBS BY SEMANTIC CATEGORIES

(see Appendix II for category labels)

Pattern III (with pattern VI absent):	Pattern_III_not_VI_sem.pdf	(9 pages)
Pattern VI (with pattern III absent):	Pattern_VI_not_III_sem.pdf	(6 pages)
Patterns III and VI co-occurrent:	Patterns_III_and_VI_sem.pdf	(10 pages)

CLASSIFICATION OF VERBS BY VALENCY STRUCTURE CODES

(see Table 41, section 6.3 for description of codes)

Pattern III (with pattern VI absent):	Pattern_III_not_VI_val.pdf	(14 pages)
Pattern VI (with pattern III absent):	Pattern_VI_not_III_val.pdf	(9 pages)
Patterns III and VI co-occurrent:	Patterns_III_and_VI_val.pdf	(15 pages)

CLASSIFICATION OF VERBS BY ASPECTUAL CATEGORY

(including *arabiCorpus* token counts according to the methodology described in section 9.1.1.1)

Pattern III (with pattern VI absent):	Pattern_III_not_VI_asp.pdf	(15 pages)
Pattern VI (with pattern III absent):	Pattern_VI_not_III_asp.pdf	(10 pages)
Patterns III and VI co-occurrent:	Patterns_III_and_VI_asp.pdf	(19 pages)

VERBAL NOUNS

Pattern III $\text{muC}_1\bar{\text{a}}\text{C}_2\text{aC}_3\text{a}$:	Pattern_III_muCaaCaCa.pdf	(11 pages)
Pattern III $\text{C}_1\text{iC}_2\bar{\text{a}}\text{C}_3$:	Pattern_III_CiCaaC.pdf	(5 pages)

Appendix II

Semantic category labels

Label	Transitive?	Valency structure code	Gloss
CAU	Y	2B	Causative upon d.o.
CAU-		2A	Causative upon i.o.
CAU±	Y	3B	Causative upon d.o. with respect to i.o.
CON+	Y	2B	Conative with d.o.
CRP±		2A	Causative reflexive passive with i.o. as agent
ESR		1B	Estimative, reflexive
ESR±		2A	Estimative, reflexive with respect to i.o.
EST	Y	2B	Estimative of d.o.
EST-		2A	Estimative of i.o.
IMP±		1A	Impersonal, monovalent with i.o.
INT		1B	Intransitive
INT±		2A	Intransitive with i.o.
INT±±		3A	Intransitive with two i.os.
MUT	Y	2B	Implied mutuality with d.o.
MUT-		2A	Implied mutuality with i.o.
MUT+	Y	3C	Implied mutuality with d.o. and additional d.o.
MUT±	Y	3B	Implied mutuality with d.o. and additional i.o.
MUT-±		3A	Implied mutuality with i.o. and additional i.o.
PAS		1B	Semantically passive
PAS+	Y	2B	Semantically passive, with d.o.
PAS±		2A	Semantically passive, with i.o.
SIM		1B	Simulative
SIM+	Y	2B	Simulative towards d.o.
SIM±		2A	Simulative towards i.o.
REC		1B	Explicit reciprocity, usually non-singular subject
REC+	Y	2B	Explicit reciprocity with d.o.
REC±		2A	Explicit reciprocity with i.o.
REF		1B	Reflexive
REF+	Y	2B	Reflexive effect with respect to d.o.
REF±		2A	Reflexive effect with respect to i.o.
REF++	Y	3C	Reflexive effect with respect to two d.os.

Label	Transitive?	Valency structure code	Gloss
REF $\pm\pm$	Y	3B	Reflexive effect with respect to d.o. and i.o.
STA		1B	Stative
STA \pm	Y	2B	Stative with respect to d.o.
STA \pm		2A	Stative with respect to i.o.
STC		1B	Conative towards state
TRA	Y	2B	Transitive with d.o.
TRA-		2A	Semantically transitive, with i.o.
TRA \pm	Y	3C	Ditransitive with two d.os.
TRA \pm	Y	3B	Transitive with d.o. and additional i.o.
TRA $\pm\pm$		3A	Semantically transitive, with two i.os.
TRA $\pm\pm$	Y	4C	Transitive with two d.os. and i.o.

Notes:

- i. Only the categories actually attested in the attached data tables are listed here;
- ii. Valency structure codes refer to Table 41 in section 6.3;
- iii. d.o. = direct object; i.o. = indirect object (with preposition).

Appendix III

Native speaker questionnaire

III.1 Background

Three native speaker informants were approached to complete the questionnaire reproduced here in section III.4. At the time, each informant was a postgraduate student and/or an Arabic language tutor at the University of St Andrews. All informants were male native Arabic speakers under 35 with significant educational background in Arabic as well as in English. In accordance with University policy, permission for this research was obtained from the Ethics Committee of the School of Modern Languages (Application Ref. ML4979). To comply with the permission granted, all original completed questionnaires and other documents identifying the original participants have been destroyed and only the summarised data are recorded here.

III.2 Procedure

The informants were presented with the information and consent form reproduced in section III.3 and were talked through the exercise before being given the questionnaire to complete in their own time. Following completion, the informants were visited again and their responses were discussed to resolve any difficulties and to ensure as far as possible that their assessments were based solely on judgements of grammaticality and not on any extralinguistic considerations or merely on preferences of word order. Some of the sentences presented for assessment contained verbs and constructions other than those of

specific interest in order both to assess the level of agreement between informants and to minimise any conscious or unconscious anticipation by informants of the responses expected.

III.3 Information and consent form

The Arabic Verb

Information for Questionnaire Participants

Dear

Thank you for volunteering to help me with my PhD research. My thesis involves investigation of the verb forms of Modern Standard Arabic, and I am concentrating particularly on Forms III and VI (faa'ala and tafaa'ala). I have made some interesting observations and formulated explanations, but I am now at the point where I need to obtain some input from native Arabic speakers.

I have compiled a questionnaire consisting of around 60 short sentences to be assessed for naturalness and grammaticality. There are no right or wrong answers and I am interested in your 'gut reaction' as a native speaker, rather than any deep analysis. However, I would welcome your comments on why particular sentences seem wrong. Please mark one of the following for each example.

- ✓ Good, natural Arabic
- ? Doubtful or not natural, but possible
- * Not grammatical or possible

I will arrange for you to return the questionnaire to me electronically or on paper and we can discuss any points you wish to raise, or suggestions you may have. At that time, I may also ask you if you are willing to take part in a similar, follow-up questionnaire.

The responses you give will only be seen by myself and my research supervisors. No data, including any background information you may give me, will be identifiable by name in any published material and original questionnaires will be destroyed once the research project is completed. You are free to withdraw from participation at any time without giving any explanation and if you do not feel able to give an opinion on a particular example, you may omit it.

Please complete the declaration below, confirming your willingness to participate in the questionnaire.

Many thanks for your participation!

Warwick Danks

School of Modern Languages, University of St Andrews.

I have read the 'Information for Questionnaire Participants', and give my consent to taking part in this research study. I am over 18 years of age.

Signed:

Name:

Date:

III.4 Questionnaire

Comment	* ? ✓		
		كان بيتنا يجاور المكتبة	1
		ما زال الله يبارك شعبه	2
		جوورت المكتبة	3
		حاسب أحمد المدير	4
		قوتل صديقه	5
		قاتل أحمد صديقه طوال عشرين دقيقة	6
		المكتبة مجاورة	7
		فاجأ أحمد صديقه مرات كثيرة	8
		جاور بيتنا المكتبة مرات كثيرة	9
		حاسب أحمد المدير طوال سنين كثيرة	10
		كان عدد سكان المغرب مجاوزاً	11
		فاجأ أحمد صديقه طوال عشرين دقيقة	12
		يحاسب أحمد المدير منذ الحادث	13
		جووز عدد سكان المغرب	14
		ما زال أحمد يفاجئ صديقه	15
		حاسب أحمد المدير منذ الحادث	16
		سافر أحمد من الجزائر	17

		يحاسب أحمد المدير حتى نهاية الأزمة	18
		فُتح الباب	19
		كان صديقه مقاتلاً	20
		فوجئ صديقه	21
		فتح أحمد الباب طوال عشرين دقيقة	22
		كان أحمد يسافر الى القاهرة طوال يومين	23
		حاسب أحمد المدير مرات كثيرة	24
		سافر أحمد الى القاهرة حتى مغرب الشمس	25
		يجاوز عدد سكان القاهرة عدد سكان المغرب منذ سنين كثيرة	26
		قاتل أحمد صديقه مرات كثيرة	27
		يفاجئ أحمد صديقه منذ كان طفلاً	28
		جاوز عدد سكان القاهرة عدد سكان المغرب	29
		ما زال أحمد يحاسب المدير	30
		يفتح أحمد الباب منذ الساعة السابعة	31

Comment	* ? ✓		
		كان أحمد يفاجئ صديقه طوال عشرين دقيقة	32
		يجاوز عدد سكان القاهرة عدد سكان المغرب الآن	33
		سافر أحمد الى القاهرة	34
		كان أحمد يفتح الباب طوال عشرين دقيقة	35
		كان ابراهيم مباركاً	36
		قاتل أحمد صديقه	37
		كان المدير محاسباً	38
		كان عدد سكان القاهرة يجاوز عدد سكان المغرب حتى أواخر القرن	39
		فاجأ أحمد صديقه	40
		كان الله يبارك ابراهيم طوال عشرين سنة	41
		فتح أحمد الباب	42
		كان أحمد يحاسب المدير طوال سنين كثيرة	43
		بورك ابراهيم	44
		بارك الله ابراهيم طوال عشرين سنة	45

		كان صديقه مفاجاً	46
		جاوز عدد سكان القاهرة عدد سكان المغرب حتى أواخر القرن	47
		يفتح أحمد الباب حتى الساعة السابعة	48
		جاور بيتنا المكتبة	49
		كان الله يبارك ابراهيم مرات كثيرة	50
		كان الباب مفتوحاً	51
		حوسب المدير	52
		بارك الله ابراهيم مرات كثيرة	53
		كان أحمد يسافر طوال يومين	54
		فتح أحمد الباب مرات كثيرة	55
		جاوز عدد سكان القاهرة العدد في المغرب مرات كثيرة	56
		يحاسب أحمد المدير بينما يبحث في المشكلة	57
		سافر أحمد الى القاهرة مرات كثيرة	58
		كان الله يبارك ابراهيم حتى أواخر أيامه	59
		كان أحمد يقاتل صديقه طوال عشرين دقيقة	60

III.5 Data summary

The responses of informants were transferred to the table below using the following notation:

- ✓ Good, natural Arabic {Y}
- ? Doubtful or not natural, but possible {?}
- * Not grammatical or possible {N}

1	YYY
2	YYY
3	YNN
4	YYY
5	N??
6	YYY
7	Y?Y
8	YYY
9	NNN
10	Y?Y
11	YN?
12	Y?N
13	Y??
14	NNN
15	YYY

16	NYY
17	YYY
18	N?N
19	YYY
20	YYN
21	?YY
22	?YY
23	NYN
24	YYY
25	N?N
26	?NN
27	YYY
28	YNN
29	?YY
30	YYY

31	Y?Y
32	??N
33	NNN
34	YYY
35	N?N
36	Y??
37	YYY
38	?Y?
39	YYY
40	YYY
41	NYY
42	YYY
43	YYY
44	NYY
45	YYY

46	NNN
47	YYN
48	YYN
49	N?Y
50	?YY
51	YYY
52	YYY
53	YY?
54	NNN
55	YYY
56	?YY
57	N?N*
58	YYY
59	?YY
60	N?Y

* On further investigation, this sentence was found to have been rejected by the informants on grounds other than the use of the verb of interest.

Appendix IV

Passive participles in patterns III and VI

The following is an exhaustive list of pattern III and pattern VI verbs giving rise to passive participle forms according to Wehr (1994):

Pattern III		Pattern VI	
آخذ	' <i>ākhadhā</i>	تبادل	<i>tabādala</i>
بارك	<i>bāraka</i>	تداول	<i>tadāwala</i>
خالط	<i>khālaṭa</i>	تقادی	<i>taqādā</i>
شاهد	<i>shāhada</i>	تنازع	<i>tanāza ʿa</i>
شاور	<i>shāwara</i>	تناول	<i>tanāwala</i>
صادر	<i>Sādara</i>	توارث	<i>tawārathā</i>
ضاعف	<i>Dā ʿafa</i>		
طالب	<i>Tālaba</i>		
عافى	<i>ʿāfā</i>		
عاقب	<i>ʿāqaba</i>		
لاحظ	<i>lāHaDHa</i>		
نادى	<i>nādā</i>		
نازع	<i>nāza ʿa</i>		
وارب	<i>wāraba</i>		
ياوم	<i>yāwama</i>		