The Linguistic Cycle in Ancient Egyptian Verbal Constructions

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by Rachael Hannah McLaughlin

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Abstract

The linguistic cycle pattern, involving the repeating alternation between analyticity and syntheticity, is clearly visible in many constructions across the development of the ancient Egyptian language between Old Egyptian and Coptic. This thesis aims to provide a detailed, evidence-based account of the linguistic cycle pattern in the diachronic developments of Egyptian verbal constructions, and to further understanding of how and why this pattern was formed.

The first chapter of this thesis introduces the key themes, research questions and methodology featured throughout the thesis, including three illustrative crosslinguistic examples of the linguistic cycle and a discussion of motivations for the formation of this pattern. The second chapter observes and analyses how the linguistic cycle was formed in the development of each individual construction, establishing the linguistic processes involved in analyticisation and syntheticisation in each case.

The following three chapters provide a comparison between the verbal constructions analysed in chapter 2, determining the nature of the linguistic cycle in Egyptian verbal constructions through similarities between constructions, as well as establishing differences. It is determined that analyticisation occurred through the addition of new elements to constructions, primarily through the process of auxiliarification, while syntheticisation involved the reduction of a construction, primarily through the processes of erosion and coalescence. It is also proven that the linguistic cycle in Egyptian verbal constructions was not truly cyclical, and that this pattern occurred over various different time scales in different constructions. It is consequently argued that, in the context of the linguistic cycle, constructions must be examined individually, rather than an entire language or language phase being categorised.

At various stages throughout these chapters, the findings from Egyptian verbal constructions are compared with the three known examples of the linguistic cycle from different languages given in chapter 1, establishing various similarities. This adds to evidence for the currently unanswered question of the universality of the linguistic cycle pattern. It also demonstrates how the Egyptian language, which as the world's longest attested language offers a unique opportunity to examine linguistic patterns over a more extended time period than any other language, can reveal more about the linguistic cycle as a crosslinguistic pattern than its current application in linguistic works. The final chapter summarises the findings of this thesis, and presents conclusions to its primary research questions.

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Glossing Abbreviations

1 – 1st Person

2 – 2nd Person

2nd – Second Tense

3 – 3rd Person

ADJ – Adjective (marker)

APP – Apposition (marker)

AUX – Auxiliary

CAUS_IMP – Causative Imperative

CAUS_INF – Causative Infinitive

CIRC – Circumstantial

COMPL – Completive

COND – Conditional

CONJ – Conjunctive

CONT – Continuative

COP – Copula

DAT – Dative

F – Feminine

FIN – Finalis

FUT – Future

GEN – Genitive

HBT – Habitual

IMP – Imperative

IMPF – Imperfect

IMPRS – Impersonal

INF – Infinitive

INDEF – Indefinite

INTS – Intensive Pronoun

M – Masculine

NCOMP – Negative Complement

NEG – Negative

NOM – Nominalised

NY – Not Yet

OBJ – Object (Marker)

PART – Particle

PASS – Passive

PL – Plural

POSS – Possessive

PRF – Perfect

PRS – Present

PST – Past

PTCP – Participle

PURP – Purpose

REL – Relative

SEQ – Sequential

SG – Singular

STV – Stative

SBJ – Subject (Marker)

TEMP – Temporal

TRM – Terminative

1. Introduction

'It is striking to see the massive reorganization of Egyptian morphosyntax over the millennia' (Haspelmath 2015:123).

The status of the Egyptian language as the oldest and longest continually attested language in the world (Allen 2013:1) offers an unparalleled opportunity to examine such striking changes in morphosyntax across an extended period of time, and to observe and analyse linguistic changes and patterns that often occur too slowly to be visible in languages with shorter periods of written attestation. One such pattern is the linguistic cycle pattern, which will be the focus of this thesis. In short, this thesis will investigate how and why alternating increases in analyticity and syntheticity occurred in the developments of Egyptian verbal constructions. It will explore the nature of the linguistic cycle pattern in Egyptian verbal constructions, how similar the formation of the linguistic cycle was across the developments of different verbal constructions, and how similar the formation of the linguistic cycle in Egyptian verbal constructions was to the formation of this pattern in a number of select constructions from other languages. This will establish the importance of the inclusion of the Egyptian language in research regarding the linguistic cycle.

1.a. The Linguistic Cycle Pattern

The term 'linguistic cycle'[1] has been used for a number of linguistic changes which may be viewed as cyclical, such as the reanalysis of a word as a different speech part leaving the requirement for a replacement for its original meaning (van Gelderen 2011:128-144); definite article reduction (Rupp 2007); and the process of an infant learning to speak (White 1968), among others. In relation to analyticity and syntheticity the linguistic cycle pattern is typically described as the alternation between synthetic and analytic forms, with a full completion of the cycle being visualised as *synthetic* > *analytic* > *synthetic* or *analytic* > *synthetic* > *analytic*. The term 'linguistic cycle' is the most common term for this pattern (van Gelderen 2009a; 2011; 2013; Heine et al. 1991:243-247; Hodge 1970), however it has also been referred to by alternative terms such as 'anasynthetic spiral' (Haspelmath 2018), or discussed in relation to analyticity and syntheticity without giving the overarching pattern a name at all (Schwegler 1990; Pulgram 1963). The linguistic cycle has also been

[1] Definitions of key terms in this thesis are typically provided around their first use, but are also given in a glossary for easy reference.

discussed in the context of grammaticalization, and using terms other than 'analytic' and 'synthetic'. For example, Givón has famously stated 'today's morphology is yesterday's syntax' (Givón 1971:413), van Gelderen has noted that 'the linguistic cycle can be seen as grammaticalization followed by renewal of a similar feature followed by grammaticalization and so on' (van Gelderen 2011:373), and Hopper and Traugott have similarly described the pattern that 'at each attested stage two (or more) constructions compete, and eventually the periphrastic one wins out, undergoes coalescence of the two elements that comprise it, and may in turn be replaced by a new periphrastic form' (Hopper & Traugott 2003:9).

Analyticity itself has been defined as the '*autonomy* of morphemes within a speech unit' (Schwegler 1990:xv), and syntheticity as the '*interdependency* (or *relatedness*) of morphemes within a speech unit' (Schwegler 1990:xv)[2]. The quantity of elements contained within a linguistic form may also be used to describe analyticity and syntheticity, with a greater quantity of elements indicating a greater level of analyticity, and a lesser quantity of elements indicating a greater level of syntheticity. Schwegler has also noted that analytic speech units generally exhibit consistent separateness, while synthetic speech units are characterised by a low level of separability (Schwegler 1990:57), while Danchev has stated that in analytic forms the various grammatical and/or lexical meanings of the speech unit are carried by two or more free morphemes, whereas synthetic forms use one bound morpheme (Danchev 1992:26). It is also important to note that there are no clear boundaries between the categories of analytic and synthetic (Croft 2003:46-47 with reference to Greenberg 1954), and thus analyticity and syntheticity must be viewed not as distinct categories, but as opposing directions on a scale. The term 'analyticisation' denotes an increase in analyticity in a construction, and consequently a movement towards the analytic side of the analytic/synthetic scale, while the term 'syntheticisation' denotes an increase in syntheticity in a construction, and consequently a movement towards the synthetic side of the analytic/synthetic scale. Analyticisation is linkable to the concept of renewal, through which existing meanings are expressed by new, often periphrastic forms (Hopper & Traugott 2003:122), while syntheticisation typically shows later stages of the grammaticalisation of these new forms.

Both analyticisation and syntheticisation, and by extension the linguistic cycle pattern, may be described as macro-processes, each of which is caused by one or more micro-processes, concurrent with the crosslinguistic characteristic that most change involves a series of

[2] For an extensive discussion of the history of the terms 'analytic' and 'synthetic' see Schwegler (1990:3-28).

micro-changes (Traugott & Trousdale 2010a:23). The micro-processes involved in causing analyticisation and syntheticisation in Egyptian verbal constructions will be established throughout this thesis.

1.b. Examples of the Linguistic Cycle Pattern

Previous studies on the linguistic cycle pattern cover various languages, although they predominantly focus on those from the Indo-European language family, and various parts of speech, including negation (Jespersen 1917; Dahl 1979:88-89; van Gelderen 2011:292-341), verbs (Schwegler 1990:75-150; Pulgram 1963), quotatives (Nicolle 2015:68), prepositions (Waters 2009) among others. Here a sample of three cases have been selected from the categories of verbal constructions and their negations. Some comparisons of this thesis' findings from ancient Egyptian with these three crosslinguistic cases will be made within chapters 3 and 4.

1.b.i. The Future Construction from Latin to French (Indo-European language family)

The development of the modern French future construction from its Latin origins is one of the most commonly discussed examples of the linguistic cycle pattern. The initial linguistic form in this chain of development was the Classical Latin (c.1st century BCE – 3rd century CE) *amabo*, a highly synthetic form comprised of three elements, the stem of the content verb (e.g *ama*-), a verb ending denoting futurity which varied depending on the conjugation of the verb and the person and number of the subject (e.g. *-b-*), and a second verb ending denoting the person and number of the subject (e.g. *-o*).

Within later popular Latin (c.1st century BCE – 7th century CE) and early Romance (c.4th century CE – 8th century CE), *amabo*, and any alternative means of expressing the future in Classical Latin, was increasingly replaced by a series of constructions[3] formed of an infinitive and an auxiliary of verbal origin (Schwegler 1990:123). Of these the linguistic form *amare habeo*, involving the infinitive of the content verb and an auxiliarified form of the verb *habere*, 'to have', was that which would develop into the future forms used in modern Romance languages. The earliest examples of this form are attested from the 1st century BCE, in the works of Cicero and Lucretius (Schwegler 1990:124). *habeo* subsequently underwent desemanticisation, losing its lexical meaning, and gaining the grammatical

[3] See Schwegler (1990:124) for a list of these.

meaning of 'obligation', which subsequently evolved to 'prospection' and then 'futurity' (Schwegler 1990:132).

amare habeo was then subject to the process of coalescence, resulting in *(j')aimerai*, although the intermediate stages within this process are only partially attested (Schwegler 1990:128). However, Schwegler has established that this development occurred through 'the loss of morphosyntactic freedom', 'the phonological binding of INFINITIVE + *habeo*' and 'the decrease in morphological variation of auxiliary *habeo*' (Schwegler 1990:133).

Within Modern French (late 18th century CE – present), the future form *j'aimerai*, in which the additional subject expression *(j')* has become obligatory, is in the process of being replaced by a more analytic linguistic form, *je vais aimer*. *Je vais aimer* is constructed of the subject, an auxiliarified form of the verb *aller*, 'to go', and the infinitive of the content verb, containing similar elements to *amare habeo*. In 1963, Pulgram remarked that the form *je vais aimer* was increasingly encroaching upon the domain of *j'aimerai* (Pulgram 1963:36), while more recent French grammars have stated that there are many contexts in which *j'aimerai* and *je vais aller* are interchangeable (Hawkins & Towell 2010:244), although some contexts retain a difference in meaning between these two forms (Hawkins & Towell 2010:244). Use of *je vais aller* is especially common in spoken Modern French (Jubb & Rouxeville 2021:31). Thus although *je vais aller* has not yet become the most common future form in modern French, it seems very likely to become so in the near future.

These developments created the chain:

amabo > *amare habeo* > *(j')aimerai* > *je vais aimer*

which shows the linguistic cycle pattern:

synthetic > analytic > synthetic > analytic

1.b.ii. Negation in K'iche' (Mayan language family)[4]

The development of negation in K'iche' between the 16th century CE and the present day is shows a typical example of a negation in the Jespersen cycle (Pye 2016:219-220). Within the Jespersen cycle

[4] The development of the French negation *ne....pas* shows a similar, and arguably more straightforward, chain of development, which has been widely discussed from multiple perspectives (for example Schwegler (1990:151-174); Vulanović (1997); Hansen & Visconti (2009)). However, the example from K'iche' has been included here to avoid an Indo-European bias which too often appears in linguistic works, particularly those on the linguistic cycle.

> 'the original negative adverb is first weakened, then found insufficient and therefore strengthened, generally through some additional word, and this in its turn may be felt as the negative proper and may then in course of time be subject to the same development as the original word' (Jespersen 1917:4).

In concurrence with the Jespersen cycle, negation in K'iche' initiated as a single preverbal expression of negation, gained a postverbal element which was grammaticalised as negative marker, and has begun to lose the original preverbal negation (van der Auwera & Vossen 2016:195). The negation discussed here is used across multiple verbal constructions as a uniform negation marking, resulting from paradigm levelling in which a single negation marker was extended to multiple contexts (Pye 2016:224). Consequently the placement of the verb in this construction is represented as V.

This example of the linguistic cycle in K'iche' began in the 16th century CE (Romero 2012:93), when the preverbal negative marker *ma* was used, in the form *ma* V. This could be used with a number of enclitics, which directly followed *ma*. (Pye 2016:225). However, by the 19th century CE, around 85% of examples were written with the enclitic *na* (Romero 2012:90), with the negation appearing as *man(a)*. This particular negator-enclitic compound was strongly associated with the use of a postverbal marker *ta(x)*[5] (van der Auwera & Vossen 2016:194), which was found in 44% of cases when *man(a)* was used in the late 19th century CE (Romero 2012:90-91), but by 1923 had become obligatory in this context (van der Auwera & Vossen 2016:194 and Romero 2012:91). The element *ta(x)* was originally an irrealis marker, but when used with the negation *man(a)*, *ta(x)* underwent desemanticisation[6], losing its irrealis meaning (Romero 2012:88), and gaining the grammatical meaning of a negative marker. In modern day K'iche', the form *man(a)* V *ta(x)*, is used to express negation in the written language, but *ta(x)* alone is used in colloquial speech, and is deemed as grammatical by language users (Romero 2012:86). In contrast, use of *man(a)* alone is considered ungrammatical by modern day language users (Romero 2012:86).

This development has created the chain:

ma V > *man(a)* V > *man(a)* V *(ta(x))* > *man(a)* V *ta(x)* > *(man(a))* V *ta(x)*

[5] This is 'phonetically realized as [ta(x)] in phrase-final position and when followed by vowels, and as [ta] elsewhere' (Romero 2012:82 n.8).
[6] See pg.44.

which shows the linguistic cycle pattern:

synthetic > analytic > synthetic

1.b.iii. The Future Construction in Greek (Indo-European language family)

The Greek future construction may be considered to provide a clear example of the linguistic cycle pattern, although it is currently not often included in such studies. The initial linguistic form of the Greek future construction[7] within this chain of development was παύσω, formed with the stem of the verb (e.g. παύ), a verb ending denoting future (σ), and a verb ending denoting the person and number of the subject (e.g. ω). Within Homeric (c.8th century BCE – 6th century BCE) and Classical Greek (c.5th century BCE – 4th century BCE), several periphrastic future forms emerged, formed from one of various auxiliary verbs (such as μέλλω, ἔχω, (ἐ)θέλω, and ὀφείλω, among others) followed by the infinitive of the content verb. However, it was not until the Roman period that the early synthetic future form παύσω was increasingly replaced by a series of forms composed of an auxiliary and an infinitive (Browning 1983:31). Within Hellenistic-Roman Greek (c.3rd century BCE – 4th century CE), the most common periphrastic form was that with μέλλω as an auxiliary, but by Early Medieval Greek (c.5th century CE – 9th century CE) this had become the periphrasis with ἔχω (Markopoulos 2008:94), and certainly by Late Medieval Greek (c.10th century CE – 14th century CE) at the latest, the linguistic form θὲλω παύει was the most commonly used form to express the future construction. The auxiliary of θὲλω παύει then underwent a series of phonological and morphological changes. This began with the erosion of the 2nd person θέλεις to θές from the 13th century CE, and the 3rd person θέλει to θέ from the 16th century CE (Bănescu 1915:102). These were frequently found with the particle νά, and during the 16th century CE the form θὲ νά was assimilated to become θὰ νά. θὰ νά underwent coalescence and erosion, becoming θὰν (Bănescu 1915:105), and soon after experienced further erosion, becoming θα, which continues to be used as the future auxiliary in Modern Greek (c.19th century CE – present). Joseph stated that the Modern Greek θα may be analysed as a prefix (Joseph 2003:480), based on the criteria set out in Zwicky and Pullum (1983) and Zwicky (1985). However, Roberts & Roussou argue that θα cannot be analysed as a prefix, as this would lead to the expectation for θα to always be inseparable from the content verb, but in reality clitics may be placed between θα and the verb (Roberts & Roussou 2003:71). Despite this, the fact that θα is proclitic onto the verb, and θα and the

[7] This is discussed from Homeric Greek onwards, since in the preceding Linear B texts over three-quarters of the words used are names, and very few finite verb forms are featured (Sihler 1995:9).

content verb may only be separated by clitic pronouns (Joseph & Philippaki-Warburton 1987:173) shows that the form θα παύω has become more synthetic than earlier forms of the construction, in which θὲλω was an independent word, and could be separated from the verb by any number of external elements. Although the Modern Greek construction is considered as a periphrastic form, it is clear that this construction has undergone several alternating increases in analyticity and syntheticity, and that the Modern Greek θα παύω actually represents a synthetic stage in the development of this construction.

The development of the future construction in Greek has created the chain:

παύσω > μὲλλω παύειν > ἔχω παύει(ν) > θὲλω παύει >

θὲς/θὲ (νὰ) παύω > θὰ νὰ παύω > θὰν παύω > θα παύω

which shows the linguistic cycle pattern:

synthetic > analytic > synthetic > analytic > synthetic

1.c. Motivations for the Formation of the Linguistic Cycle Pattern

Several theories regarding the causes of the linguistic cycle pattern have been put forward, often within discussions regarding grammaticalisation. Such theories regularly overlap somewhat, and may be considered together in order to understand why the linguistic cycle pattern occurs. The approach taken in this thesis conceptualises language as a social tool, and presupposes that linguistic changes occur due to the requirements of language users.

One theory that has been suggested is that the linguistic cycle was formed through the phonological and/or semantic weakening of one form, creating its need to be replaced by a new form with one or more additional elements, which then itself is weakened, and so on. This was detailed by Meillet as

> ‘Les langues suivent ainsi une sorte de développement en spirale: elles ajoutent des mots accessoires pour obtenir une expression intense; ces mots s'affaiblissent, se dégradent et tombent au niveau de simples outils grammaticaux; on ajoute de nouveaux mots ou des mots différents en vue de l'expression; l'affaiblissement recommence, et ainsi sans fin’ (Meillet 1921:140-141).

In an examination of the development of negation later termed Jespersen's cycle[8], Meillet noted the causes of the weakening of the existing form and the need for a new form as weakening of pronunciation, of the concrete meaning of words, and of the expressive value of words and constructions (Meillet 1921:139), but the underlying motivation for a new form rather than continuing to use the weakened existing form as the desire to speak expressively (Meillet 1921:139). Similarly, in their investigation of Jespersen's cycle in Greek, Kiparsky and Condoravdi noted one of the causes for the cycle as loss of compositionality and weakening by grammaticalization and desemanticisation (Kiparsky & Condoravdi 2006:193), creating the need for the strengthening of negation due to the loss of an expression which is needed in the language (Kiparsky & Condoravdi 2006:193).

A further explanation for the linguistic cycle pattern may be taken from Haspelmath's investigation regarding the irreversibility of grammaticalisation. Haspelmath, with reference to Keller's invisible hand theory (Keller 1994:95-107), proposes the following maxims of action:

> '1. Hypermaxim: talk in such a way that you are socially successful, at the lowest possible cost.
>
> 2. Clarity: talk in such a way that you are understood.
>
> 3. Economy: talk in such a way that you do not expend superfluous energy.
>
> 4. Conformity: talk like the others talk.
>
> 5. Extravagance: talk in such a way that you are noticed.' (Haspelmath 1999:1055)

For Haspelmath, the key concept in his explanation for the irreversibility of grammaticalisation is the maxim of extravagance (Haspelmath 1999:1063). This causes a speaker to use a new, innovated expression for a meaning that has previously been successfully expressed using a different construction (Haspelmath 1999:1057), often creating a new periphrastic form. This then spreads among speakers who adopt the initial speaker's extravagant innovation, and thus follow both the maxim of conformity by speaking like the original innovator and the maxim of extravagance as the use of the new form is still unusual, particularly outside their social group (Haspelmath 1999:1057). The new form then increases in frequency of use, ensuring that speakers may begin to conform

[8] See 1.b.ii.

to the maxim of economy with a reduced pronunciation, due to the risk of being misunderstood being reasonably low (Haspelmath 1999:1058).

The maxim of extravagance, as well as the maxim of clarity, provides an explanation for the emergence of new periphrastic forms, and consequently for analyticisation, while the maxim of economy provides an explanation for the erosion and coalescence of existing forms, and thus for syntheticisation.

Within the context of Egyptian verbal constructions, the motivation of increased clarity and/or extravagance may be inferred from the constructions which experienced analyticisation earliest. As will be established within this thesis, analyticisation is attested earliest in the verbal constructions which were used most frequently, and which provided the most basic meanings: the past, negative past, present, negative present, future, and negative future constructions. Within their earliest attestations, these constructions each used particularly economic forms, containing just an inflected content verb and a subject, and an additional negative marker *n* in the case of the negative constructions. This resulted in the form *sḏm=f* being used in the past (Ex.1), present (Ex.2), and future (Ex.3) constructions,

(1) *rḏi* *ḥm=f* [*ir.t(i)* *n=f*] *ꜥ* *im*
cause.PST majesty=3MSG make.FUT.PASS DAT=3MSG document there
His majesty caused that a document be made for him there....
Urk. I, 232.14
5th dynasty, Neferirkare

(2) *šm* *tti* *pn* *ḥnꜥ* *rꜥ* *iw* *tti* *pn* *ḥnꜥ* *rꜥ*
go.PRS Teti this with sun come.PRS Teti this with sun
This Teti goes with the sun. This Teti comes with the sun.
PT314d[T] (Allen 2013:136)
6th dynasty, Teti

(3) *ḏi* *ḥm(=i)* *ir.t(i)=f* *ḥr-ꜥwy*
cause.FUT majesty(=1SG) do.FUT.PASS=3MSG immediately
My majesty will cause that it will be done immediately.
Urk. I, 180.10 (Edel 1955/1964:215)
5th dynasty, Djedkare

and the form *n sḏm=f* being used in the negative past (Ex.4), negative present (Ex.5), and negative future (Ex.6) constructions.

(4) *n* *ḏd=s* *tz* *šnꜥ* *ib(=i)*
NEG say.PST=3FSG utterance offend.PST.PTCP heart=1SG
She did not speak an utterance which offended my heart.
Urk. I, 116.17 (Doret 1986:28)
6th dynasty, Pepy II

(5) *[i]šmw* *im* *n* *iw=sn*
go.PRS.PTCP.NOM there NEG return.PRS=3PL
Those who go there, they do not return.
PT2175b^{N} (Allen 2013:130)
6th dynasty, Pepy II

(6) *n* *mt=f*
NEG die.FUT=3MSG
....he will not die.
PT1810c^{N} (Edel 1955/1964:561)
6th dynasty, Pepy II

Even taking into account any possible variation in vowels between constructions, there is still an evident high potential for confusion between the *sḏm=f* forms of the three affirmative constructions, or between the *n sḏm=f* forms of the three negative constructions, resulting in a risk of being misunderstood. This risk of being misunderstood is likely to have resulted in language users need or desire to use new forms for increased clarity. As well as increased clarity, the new forms show extravagance on the part of the original innovator, due to the use of new elements which had not been present in the existing, older forms. For example, the more analytic form of the past construction, *(iw) sḏm.n=f* (Ex.7), which followed the earliest attested form *sḏm=f*, contained the additional element of the verb ending *.n*, as well as *iw* in initial main clauses.

(7) *iw* *mɜ.n* *ḥm(=i)* *zš* *pn* *nfr* *nfr*
AUX see.PRF majesty=1SG letter this beautiful beautiful
My majesty has seen this very beautiful letter....
Urk. I, 179.13 (Doret 1986:103)
5th dynasty, Djedkare

The analyticisation of constructions which were typically distinguishable through the use of semantic markers, such as the use of *ḏr* in the temporal construction (Ex.8) but no other construction, generally occurred later, and primarily show extravagance, as there is a lower need for increased clarity.

(8) *ɜw* *ib* *n* *nṯrw* *m* *tti* *ḏr* *mɜɜ=sn* *tti*
rejoice.FUT heart GEN gods through Teti TEMP see.FUT=3PL Teti
The hearts of the gods will rejoice through Teti when they have seen Teti.
PT715c^{T} (Edel 1955/1964:224)
6th dynasty, Teti

The regular occurrence of the analyticisation of Egyptian verbal constructions through auxiliarification[9] also shows evidence of conformity, with the use of auxiliaries likely

[9] See 3.a.

spreading from the most basic and frequent constructions[10] to constructions with more niche meanings and lower frequency of use.

Once clarity and/or extravagance had been achieved, the low risk of being misunderstood ensured the economy could be prioritised, and pronunciation of the construction reduced. Reduction in pronunciation through erosion is seen in each Egyptian verbal construction[11], while reduction in pronunciation from loss is evident in nine constructions[12]. Both of these processes are visible in the future construction, in the development from *tw=i m nʿy r sḏm* to *tw=y nꜣ sḏm*[13]. The form *tw=i m nʿy r sḏm* is evidently extravagant in comparison to the existing forms of the future construction, *sḏm=f* and *iw=f r sḏm*, containing three fixed elements alongside the variable elements of the subject and content verb.

(9) *tw=k* *rḫ.tw* *pꜣy* *mšʿ*
2MSG know.STV this expedition
nty *tw=i* *m* *nʿy* *r* *ir=f*
REL 1SG AUX.PRS go.INF/AUX.FUT PURP do.INF=3MSG
You know this expedition which I am going to do.
LRL, 35.15 (Grossman et al. 2014a:92)
20th dynasty, Ramesses XI, year 28

The combination of the three fixed elements *m*, *nʿy*, and *r* also ensures that the form *tw=i m nʿy r sḏm* is easily distinguishable from any other construction, and thus risk of misunderstanding is low, and pronunciation may be reduced. This reduced pronunciation is evident in the subsequent form, *tw=i nꜣ sḏm*, which shows evidence of the erosion of *nʿy* to *nꜣ*, and the loss of *m* and *r*.

(10) *tw=y* *nꜣ* *ḥys* *ṯ=k*
1SG AUX.FUT praise.INF 2MSG
I am going to praise you....
Magical, 20.19 (Johnson 1976:54)
c.200-299CE

Pulgram, in his brief investigation into the linguistic cycle in romance languages, arrived at a similar conclusion for the replacement of synthetic forms by more analytic forms, stating that this

[10] Negative past, present, negative present, future, negative future. With the exception of the past construction, which experienced analyticisation in the 5th dynasty through the addition of the addition of the verb ending *.n* rather than auxiliarification, and in which the use of an auxiliary is not attested until the 19th dynasty, with the auxiliarified form not becoming the most common form of the construction until the Roman period.
[11] See 4.a.
[12] See 4.b.
[13] See pg.153-156.

> ‘aims at a kind of greater explicitness, emphasis, preciseness; in all of them [analytic forms] there is a tendency to be repetitive, redundant, lengthy; and all arise, I believe, from a desire to achieve certainty of communication through prolixity rather than brevity, or from a fear not to achieve communication unless the hearer is told repeatedly and abundantly and insistently’ (Pulgram 1963:41).

Within Egyptian verbal constructions, this greater explicitness most often came from auxiliarification, explored in section 3.a. of this thesis, which resulted in the presence of an additional element to each construction. This new auxiliary was then used to express the grammatical information of the construction, which had previously been contained within the content verb, while the content verb subsequently only expressed its own lexical meaning. This caused an increase in analyticity through the greater quantity of elements. It also shows a trajectory towards the principle of isomorphism within each construction, in which one form = one meaning (Campbell 2013:267), since the grammatical information and lexical meaning contained within the content verb in earlier synthetic forms were split between multiple elements in the more analytic forms which replaced them.

Pulgram’s suggestions conform with Haspelmath’s maxims of extravagance and clarity, with aim of speaking more explicitly and with greater emphasis showing the need to ensure the speaker is understood, and what they say is noticed. Haspelmath and Pulgram’s suggestions also relate to that of Meillet, since the maxim of clarity relates to pragmatic strengthening, while the maxim of economy links to phonetic weakening’ (van Gelderen 2013:248).

However, Schwegler has noted many cases within the context of romance languages in which analyticisation may not be caused by semantic or phonological weakness in an existing synthetic form (Schwegler 1990:179). Instead Schwegler views the linguistic cycle as ‘the outcome of complex and potentially unrelated historical changes’ (Schwegler 1990:185), stating that ‘if we accept the premise that analysis and synthesis are a *consequence* of change, then there must be just as many causes for analysis and synthesis as there are reasons for change’ (Schwegler 1990:190). However, this does not explain why the changes which resulted in the linguistic cycle pattern propelled constructions towards one end of the analytic/synthetic spectrum rather than the other, and it is unlikely that significant numbers of analytic or synthetic constructions appeared in languages at the same time ‘by chance’ (Schwegler 1990:185), as Schwegler suggested of the rise of analytic subject pronouns, periphrastic tenses and/or prepositions in Romance languages, or that this was ‘merely accidental’ (Schwegler 1990:185), as he wrote of the concurrent formation

of more synthetic negations across several Romance languages. This is especially unlikely since Egyptian, a language unrelated to Romance languages, also showed a concurrent movement towards the synthetic end of the analytic/synthetic spectrum across multiple constructions in Coptic, as detailed in section 4.d of this thesis. The evidence of the widespread syntheticity in the Coptic language stage partially conflicts with Schwegler's statement that

> 'it has never been documented that the structure of a language *in toto* has passed through the evolution "synthesis → analysis → synthesis, or analysis → synthesis → analysis," nor has it been demonstrated that analysis ever prevailed to the exclusions of synthesis (or vice-versa)' (Schwegler 1990:184).

Schwegler further posed the question, 'if certainty of communication is indeed a primary concern, why then are analytic formations ever allowed to synthesize?' (Schwegler 1990:179). However, once a more analytic form was in use in each construction, removing any confusion between constructions with identical written forms, then certainty of communication, or clarity and extravagance, were no longer primary concerns, and economy became a higher priority. This initiated the syntheticisation of such forms, and established the cycle as one of 'economy and renewal' (van Gelderen 2009a:104).

This may be viewed as an attempt by language users to achieve the hypermaxim suggested by Keller (1994:102) and repeated by Haspelmath (1999:1055):

> 'Talk in such a way that you are socially successful, at the lowest possible cost'.

This is similar to Slobin's 'four charges' (Slobin 1977:186-7), in which a communicative system must be (1) clear; (2) humanly processible in ongoing time; (3) quick and easy; (4) expressive.

The maxims of extravagance and clarity, and the consequent analyticisation of constructions, may be viewed as ways in which language users attempted to achieve speech or writing which was 'socially successful' (Keller), or 'clear' and 'expressive' (Slobin). In contrast, the maxim of economy, and the syntheticisation of constructions, may be viewed as the means of achieving the 'lowest possible cost' (Keller), or language that is 'quick and easy' (Slobin). Thus the linguistic cycle and the alternation between analyticisation and syntheticisation may be viewed as the attempt to create language that adheres to the opposing categories of expressiveness and conciseness, with the priorities of language users alternating between these, changing direction once one of these objectives

had been sufficiently met and attempting to meet the other. The inability of language to be both as extravagant and as economic as possible ensured a constantly ongoing cycle, without end.

1.d. The Linguistic Cycle Pattern in Egyptian

That Egyptian shows 'a particularly striking example' (Haspelmath 2015:123) of the linguistic cycle pattern has been noted and widely accepted by scholars in both Egyptology and Linguistics. The extensive time span of Egyptian's written attestation has significantly aided in the visibility of this pattern across the development of the Egyptian language, although this is not the only reason that Egyptian provides such a strong example of the linguistic cycle. The investigation provided by this thesis into the micro-processes involved in the formation of the linguistic cycle in Egyptian verbal constructions and the similarities across different constructions will aid in exploring how the Egyptian language provides such a striking example of the linguistic cycle pattern.

The principally referenced study of the linguistic cycle pattern in Egyptian is that by Hodge (1970). In this short article, Hodge established the existence of a full linguistic cycle pattern in Egyptian verbal constructions, and this work continues to be cited in many discussions on the linguistic cycle as providing valuable proof for a full iteration of the linguistic cycle. However, Hodge's article has a number of flaws, the most problematic of which is the lack of evidence provided to support the claims being made, despite these claims being accurate. Furthermore, Hodge did not explore the processes involved in the alternations between what he refers to as stages with 'complex morphology' (sM) and those which are 'predominantly syntactic' (Sm) (Hodge 1970:1). Nor did he explore any exceptions to this pattern, but instead presented Egyptian as showing a perfect example of the full linguistic cycle, which it has consequently continued to be presented as in further studies of the linguistic cycle through references to Hodge. Hodge additionally presented the development of the Egyptian language in a series of synchronic stages focussed on Old Egyptian, Late Egyptian and Coptic, despite the fact that it has long been established that 'languages are in constant process of change' (Sapir 1921:153), and classified these stages in general as sM or Sm (Hodge 1970:5), with no discussion as to whether every verbal construction in each of this stages fits with this classification, or of the developments in between each of these synchronic stages.

Observations of the linguistic cycle in Egyptian have also been made by Allen (1982 & 2013). The earliest of these studies involved the analysis of the existence of synthetic and analytic forms within the *Pyramid Texts* (Allen 1982), and while the more recent work does not foreground syntheticity and analyticity, it does make reference to these themes within a wider work on the history and development of the Egyptian language (Allen 2013). Across both works, Allen noted that the most recognisable diachronic feature of the Egyptian language is the widespread change in the verbal system from synthetic to analytic (Allen 1982:19), and that the development of the verbal system from Late Egyptian to Coptic shows a trend in which all synthetic verb forms are eventually replaced by analytic ones (Allen 2013:153). In this respect Allen has presented a different view to Hodge, in that he does not seem to consider the forms of verbal constructions in the Coptic stage as a return to synthetic forms, but as the continued use of analytic forms, due to the continued lack of inflection and alternative use of an auxiliary. Despite noting that analytic Egyptian verb forms were grammaticalised into bound verb forms (Allen 2013:153), Allen has not labelled these later forms as synthetic, reflecting the general issue that the terms analytic and synthetic are regularly used with different meanings by different linguists (Anttila 1989:315).

One of the most extensive works on the linguistic cycle in Egyptian is a chapter by Reintges (2012), which explores analyticity and syntheticity in Egyptian in the context of macroparametric change. Reintges' focus lay on explaining how Coptic forms came to be, and on the development of Egyptian word order from verb subject object (VSO) to subject verb object (SVO) (Reintges 2012:139). In order to examine these developments, Reintges described the characteristics of Coptic forms in comparison with earlier language stages, in the majority of cases focussing on Old Egyptian as the earlier stage to be compared. Furthermore, like Hodge, Reintges' work is focussed on explaining a general overview of Egyptian as a whole rather than individual constructions. However, Reintges has utilised evidence from various Egyptian texts, and made short investigations into particular aspects of certain constructions.

The linguistic cycle pattern in Egyptian has also been noted by Haspelmath (2015), who noted that although this trend is hard to overlook in the diachronic development of Egyptian (Haspelmath 2015:121), the linguistic cycle is (Haspelmath 2015:123). Haspelmath has provided a selection of ten standardised examples of the linguistic cycle occurring in Egyptian, covering various classes of constructions and thus building on the work of Hodge on verbal constructions alone. However, Haspelmath has not provided any examination of

the processes involved in the formation of the linguistic cycle, nor has he given any examples from Egyptian texts, but instead simply focussed on pointing out this feature in the development of the Egyptian language within a larger chapter providing a grammatical overview of Egyptian and Coptic. Haspelmath referred to the linguistic cycle in Egyptian again in a later article (Haspelmath 2018), which examined the linguistic cycle from a largely theoretical point of view. In this, Haspelmath again noted that Egyptian shows 'the most striking development' (Haspelmath 2018:108) of the linguistic cycle, and again provided the same ten standardised examples of the linguistic cycle in various Egyptian constructions, with no examples from Egyptian texts, due to the wider focus of the study being on a largely theoretical discussion of the linguistic cycle itself.

The research presented in this thesis will build upon that discussed above, providing a detailed investigation into the linguistic cycle pattern in Egyptian verbal constructions, supported by a corpus of examples from a variety of Egyptian texts. It will focus on exploring developments in individual constructions rather than the language as a whole to allow a more in-depth analysis, and for the possibility of exceptions to the ideal linguistic cycle pattern.

1.e. Research Questions

The primary research questions for this thesis are as follows:

- Is there sufficient surviving evidence to provide a clear demonstration of the linguistic cycle pattern in the development of each individual Egyptian verbal construction?
- Which linguistic processes were involved in analyticisation and syntheticisation, and subsequently in the formation of the linguistic cycle, and were the same processes involved in each verbal construction?
- What motivated alternating increases of analyticity and syntheticity in Egyptian verbal constructions?
- Is the linguistic cycle pattern a true cycle in the sense of alternately returning to the same stages?
- Can the Egyptian language as a whole accurately be categorised into analytic and synthetic stages, as has been done in previous studies?
- How does the formation of the linguistic cycle in Egyptian verbal constructions compare to that in constructions from other languages?

1.f. Data

The corpus of examples for this thesis is comprised of a wide variety of written sources, drawn from standard grammars of each language stage and existing literature on the developments of Egyptian verbal constructions[14], and supplemented using databases such as the Thesaurus Linguae Aegyptiae database[15] and the Coptic Scriptorium ANNIS database[16]. These sources enable this corpus to reflect a variety of genres, however genre itself will not be examined within the constraints of this thesis, particularly since this would not be possible for all constructions, with less commonly used constructions having a far more limited data set. Furthermore, since the data is limited to written sources, any developments described are those which are evident from the Egyptian written language and, while these generally indicate that change has occurred within the spoken language, there may be developments in spoken language which did not occur in written language, or vice versa. Moreover, since in most cases 'the impression of having access to written-as-if-spoken Ancient Egyptian is essentially an illusion that ignores the demarcation between written and spoken realms' (Polis 2018:62-63), developments in the written language which indicate change in the spoken language do not indicate that these were simultaneous.

The corpus used in this thesis is inevitably only a partial sample of Egyptian texts. As such, any mention of 'all examples' of a form or construction refers to all examples within the corpus used for this thesis, and not necessarily to all existing attestations.

The corpus used for this thesis includes texts ranging from Old Egyptian through to Coptic, in order to cover the full attested development of the Egyptian language. The approximate dates for each language stage are as follows:

Old Egyptian	c.2600 – 2000BCE
Middle Egyptian	c.2000 – 1350BCE
Late Egyptian	c.1350 – 700BCE
Demotic	c.700BCE – 200CE
Coptic	Post c.300CE

[14] Any examples sourced from existing studies on the Egyptian language include a reference to the relevant study, however each example has been retranslated and as such all translations are my own.
[15] aaew.bbaw.de/tla/index.html
[16] corpling.uis.georgetown.edu/annis/scriptorium

The earliest examples in this corpus dates from the 4th dynasty, while the latest date from c.975-1005CE and c.900-1100CE, although all dates given are those of the manuscript or monument rather than the estimated date of composition. The most limited data set is that from Old Egyptian, while the lack of a more modern grammar in print for Demotic ensures a heavy reliance on Johnson (1976) for description of this stage. The majority of Coptic examples are Sahidic, with this being the primary early dialect, but data from other dialects is used when necessary to illustrate the point at hand. In each example the section showing the construction under discussion, including the full subject constituent, is indicated through colour coding, and where the example given does not provide a full sentence within its wider context this is indicated through the use of an ellipsis.

Within this thesis, the focus is primarily on unconverted forms of each construction[17]. However, for linguistic forms which have limited attestations, such as *tw=i m nʿy r sḏm* of the future construction, converted circumstantial or relative examples are occasionally given. The verbal constructions chosen for examination in this thesis are those which are attested throughout multiple language stages, with the most common forms of each construction being discussed. For example, the sequential construction is excluded due to it only being attested in the forms *ỉw=f ḥr sḏm* and *ỉw=f sḏm* during the Late Egyptian language stage. In tracing the development of each construction, the focus is primarily on developments in form rather than nuances of meaning.

1.g. Methodology

Initially the most common forms of each construction across its development were established, and the linguistic processes involved in each development from one form of a construction to the next determined. Each process was subsequently examined to establish whether it caused an increase in either analyticity or syntheticity, or whether it had no effect on these at all, thus determining which processes were involved in analyticisation and syntheticisation, and subsequently how the linguistic cycle was formed in each construction. Discussion of each verbal construction is presented under the headings of analyticisation and syntheticisation, to provide a succinct overview of each of these processes, and the methodology used by Heine (1993:53-65) in exploring the grammaticalisation of auxiliaries[18], is utilised for each construction to structure discussion

[17] That is, not circumstantial, relative or second tense.
[18] This methodology is introduced in full in section 2.a.iii.

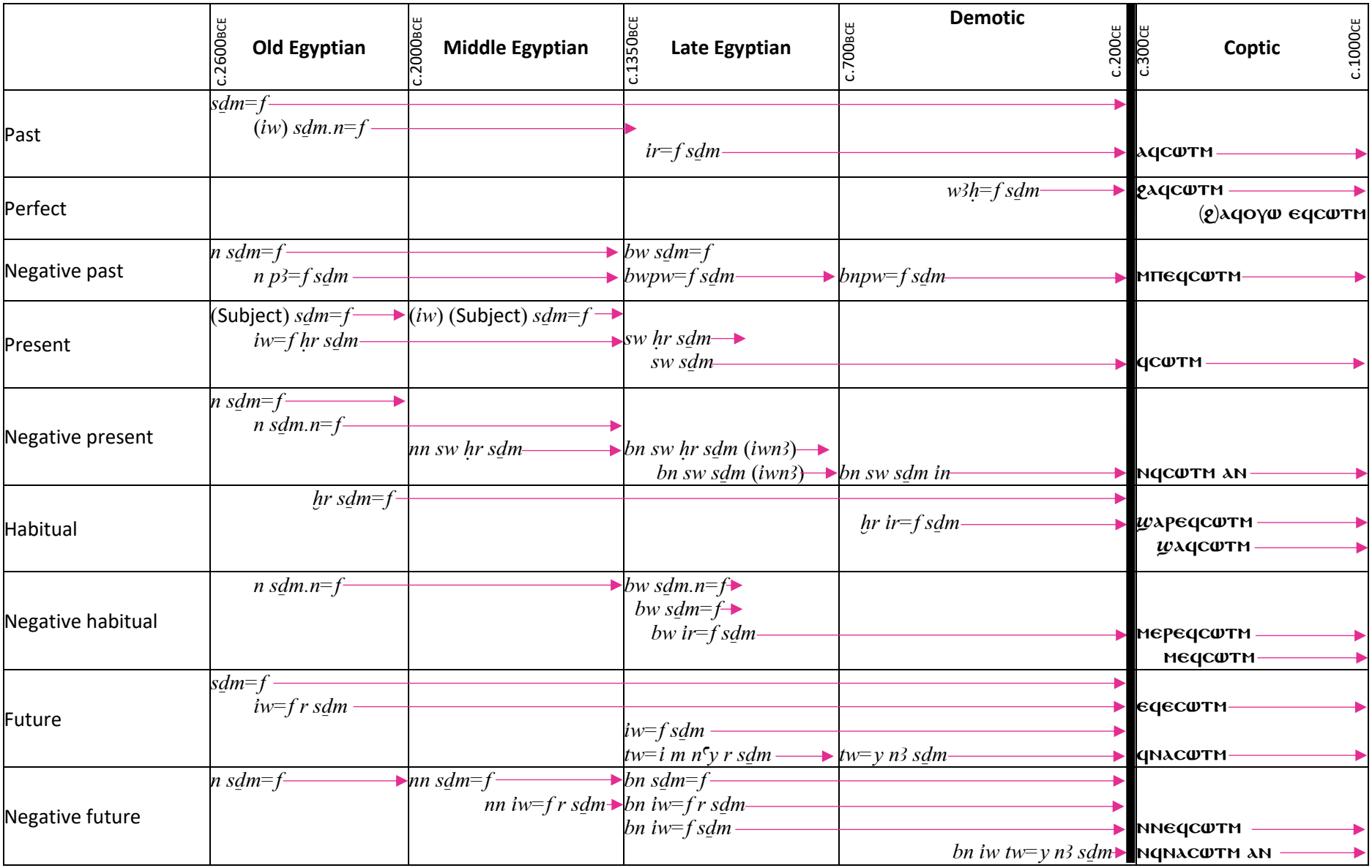
of the common process of auxiliarification. Since the development of each verbal construction is a very broad topic, covering an extensive time span, there are naturally many issues which will not be discussed, being tangential to the scope of this thesis.

The individual developments of constructions having been examined, a comparison has been made of each analyticisation and syntheticisation across all constructions considered in this thesis, exploring how similar the processes involved were across different constructions. A further comparison has been made of the characteristics of the full linguistic cycle patten in Egyptian verbal constructions, including an investigation into the time scales involved in the formation of this pattern and how similar these were across different constructions, and an exploration of how cyclical the linguistic cycle really was in the developments of Egyptian verbal constructions.

The structure of this thesis follows the structure of this methodology. Chapter 2 provides an in-depth analysis of the development of each individual construction, of the processes involved in this development and how each of these affected the analyticity and syntheticity of the construction. Chapter 3 provides an investigation into analyticisation across all Egyptian verbal constructions, while chapter 4 provides the same for syntheticisation, and chapter 5 gives an analysis of the full linguistic cycle across Egyptian verbal constructions. Finally, chapter 6 provides conclusions on the nature of the linguistic cycle pattern, and the similarities in its formation across different Egyptian verbal constructions and crosslinguistically.

2. The Linguistic Cycle in Individual Verbal Constructions

This chapter will present the development of each verbal construction individually, divided into discussion of the processes of analyticisation and syntheticisation to best observe the linguistic cycle. A simplified overview of these developments may be seen in table 1. Examples from Egyptian texts are provided to illustrate linguistic and orthographic developments. Some comparison is provided between constructions as they are discussed, although this is not the focus of this chapter and will be discussed comprehensively in chapters 3-5.


c.2600BCE
Old Egyptian
c.2000BCE
Middle Egyptian
c.1350BCE
Late Egyptian
c.700BCE
Demotic
c.200CE
c.300CE
Coptic
c.1000CE
Past
sḏm=f
(iw) sḏm.n=f
ir=f sḏm
ⲁⲩⲥⲱⲧⲙ
Perfect
wꜣḥ=f sḏm
ⲉⲁⲩⲥⲱⲧⲙ
(ⲉ)ⲁⲩⲟⲩⲱ ⲉⲩⲥⲱⲧⲙ
Negative past
n sḏm=f
n pꜣ=f sḏm
bw sḏm=f
bwpw=f sḏm
bnpw=f sḏm
ⲙⲡⲉⲩⲥⲱⲧⲙ
Present
(Subject) sḏm=f
iw=f ḥr sḏm
(iw) (Subject) sḏm=f
sw ḥr sḏm
sw sḏm
ⲩⲥⲱⲧⲙ
Negative present
n sḏm=f
n sḏm.n=f
nn sw ḥr sḏm
bn sw ḥr sḏm (iwnꜣ)
bn sw sḏm (iwnꜣ)
bn sw sḏm in
ⲛⲩⲥⲱⲧⲙ ⲁⲛ
Habitual
ḫr sḏm=f
ḫr ir=f sḏm
ⲯⲁⲣⲉⲩⲥⲱⲧⲙ
ⲯⲁⲩⲥⲱⲧⲙ
Negative habitual
n sḏm.n=f
bw sḏm.n=f
bw sḏm=f
bw ir=f sḏm
ⲙⲉⲣⲉⲩⲥⲱⲧⲙ
ⲙⲉⲩⲥⲱⲧⲙ
Future
sḏm=f
iw=f r sḏm
iw=f sḏm
tw=i m nʿy r sḏm
tw=y nꜣ sḏm
ⲉⲩⲉⲥⲱⲧⲙ
ⲩⲛⲁⲥⲱⲧⲙ
Negative future
n sḏm=f
nn sḏm=f
nn iw=f r sḏm
bn sḏm=f
bn iw=f r sḏm
bn iw=f sḏm
bn iw tw=y nꜣ sḏm
ⲛⲛⲉⲩⲥⲱⲧⲙ
ⲛⲩⲛⲁⲥⲱⲧⲙ ⲁⲛ

	c.2600BCE **Old Egyptian**	c.2000BCE **Middle Egyptian**	c.1350BCE **Late Egyptian**	c.700BCE **Demotic** c.200CE	c.300CE **Coptic** c.1000CE
Causative imperative	*im sḏm=f* →	→	→	*my sḏm=f* →	
				my ir=f sḏm →	ⲙⲁⲣⲉϥⲥⲱⲧⲙ →
Negative causative imperative	*m rdi sḏm=f* →	→	*m dy sḏm=f* →		
			m ir dit sḏm=f →	→	
				m ir di ir=f sḏm →	ⲙⲡⲣⲧⲣⲉϥⲥⲱⲧⲙ →
Causative infinitive	*rdit=f sḏm* →	→		→	
				di ir=f sḏm →	ⲧⲣⲉϥⲥⲱⲧⲙ →
Finalis			*di=i sḏm=f* →	→	
				di=y ir=f sḏm →	ⲧⲁⲣⲉϥⲥⲱⲧⲙ →
Terminative	*r sḏm.t=f* →	→			
			i-ir.t=f sḏm →		
			šꜣ i-ir.t=f sḏm →		
			šꜣ.t=f sḏm →	*šꜥ.t=f sḏm* →	ϣⲁⲧⲉϥⲥⲱⲧⲙ →
				šꜥ.mt=f sḏm →	ϣⲁⲛⲧⲉϥⲥⲱⲧⲙ →
Not Yet	*n sḏm.t=f* →	→	*bw sḏm.t=f* →	→	
			bw ir.t=f sḏm →	→	ⲙⲡⲁⲧϥⲥⲱⲧⲙ →
Temporal	*ḏr sḏm=f* →	→	*m ḏr sḏm=f* →	*n drt sḏm=f* →	
				n drt ir=f sḏm →	ⲛⲧⲉⲣⲉϥⲥⲱⲧⲙ →
Conjunctive		*ḥnꜥ sḏm ntf* →			
		ḥnꜥ ntf sḏm →	*mtw=f sḏm* →	→	ⲛϥⲥⲱⲧⲙ →

Table 1 – Simplified and approximate timeline of the developments of Egyptian verbal constructions. Forms which are represented as following on from one another in the same row also exhibit layering, however this is quite limited.

2.a. Past

sḏm=f >>[19] (*iw*) *sḏm.n=f* ≈> *sḏm=f* > *ir=f sḏm* > ⲁⲣⲥⲱⲧⲙ

2.a.i. First Analyticisation (*sḏm=f* >> (*iw*) *sḏm.n=f*)

The earliest attested linguistic form of the past construction investigated here is *sḏm=f*[20], with *sḏm* representing the content verb, which was inflected for past tense, being the only plausible site for the coding of time reference, and *f* representing the subject. The past *sḏm=f* is well attested from Old Egyptian (Edel 1955/1964:213-215).

(11)

wḏ	*igr*	*ḥm=f*	*sk*	*i3t*
command.PST	PART	majesty=3MSG	clear.INF	place

His majesty also commanded (them) to clear the place....
Debehen, 6 (Edel 1955/1964:213)
4th dynasty, Menkaure

(12)

ḫsf	*3ms*	*wn*[21]	*m*	*ꜥ*	*ḥm=f*
hit.PST	ames_sceptre	be.PST.PTCP	in	hand	majesty=3MSG

rd	*n*	*sm*	*rꜥ-wr*
leg	GEN	sem_priest	Rawer

The ames sceptre which was in the hand of his majesty hit the leg of the Sem priest Rawer.
Urk. I, 232.8
5th dynasty, Neferirkare

(13)

rḏi	*ḥm=f*	[*ir.t(i)*	*n=f*]	*ꜥ*	*im*
cause.PST	majesty=3MSG	make.FUT.PASS	DAT=3MSG	document	there

His majesty caused that a document be made for him there....
Urk. I, 232.14
5th dynasty, Neferirkare

(14)

h3b	*w(i)*	*ḥm=f*	*m-snnw*	*zp*	*wꜥ.k*
send.PST	1SG	majesty=3MSG	second	time	alone.STV

His majesty sent me a second time alone.
Urk. I, 124.17
6th dynasty, Merenre & Pepy II

---

[19] Following Haspelmath, the symbol >> represents 'is replaced by', while > represents 'turns into' (Haspelmath 2015:121). In addition to this, ≈> is used to show uncertainty between direct development and replacement. Forms in brackets, seen in constructions discussed later, were secondary forms of a construction and thus did not directly affect analyticity and syntheticity, but later developed into the most common form of a construction.

[20] Henceforth referred to as the past *sḏm=f* to avoid confusion with other *sḏm=f* forms discussed in this thesis, such as the present (Subject) *sḏm=f* (see 2.d.i.) and future *sḏm=f* (see 2.h.i.). Each of these labels is based on the prototypical absolute tense of each form. Possible vowel distinctions between such forms pre-Coptic are not discussed in this thesis, as these, and consequent increases in analyticity or syntheticity caused by ablaut, are not visible from written evidence.

[21] Within this thesis the various uses of *wnn* are not explored, since this is not of direct importance to the analyticity or syntheticity of the constructions discussed.

During Old Egyptian the past was expressed using a mixed paradigm, with the stative[22] being used in place of *sḏm=f* to provide the 1st person[23]' (Loprieno 1995:77), predominantly with transitive verbs and verbs of motion (Doret 1986:117)[24].

(15)

mꜣꜥ.k	*sn*	*m*	*ỉw*	*mḥt(y)*
lead.STV	3PL	from	island	northern

I led them from the northern island....
Urk. I, 102.17 (Doret 1981:109)
6th dynasty

Within the 5th dynasty (Doret 1986:97) a new linguistic form, *(ỉw) sḏm.n=f*, is first attested. *(ỉw) sḏm.n=f* was initially restricted to expressing perfect meaning (Werning 2008:286), in contrast with the past *sḏm=f*, which expressed the simple past (Doret 1986:97).

(16)

ỉw	*wḏ.n*	*nswt*			
AUX	command.PRF	king			
ỉr.t(ỉ)	*n(=ỉ)*	*ḫt*	*nb(t)*	*ꜣḫ(t)*	
do.FUT.PASS	DAT=1SG	thing	every	profitable	

The king has commanded that every profitable thing be done for me.
Nimaatre, B.6 (Doret 1981:159 n.2)
5th dynasty

(17)

ỉw	*mꜣ.n*	*ḥm(=ỉ)*	*zš*	*pn*	*nfr*	*nfr*
AUX	see.PRF	majesty=1SG	letter	this	beautiful	beautiful

My majesty has seen this very beautiful letter....
Urk. I, 179.13 (Doret 1986:103)
5th dynasty, Djedkare

One function of the auxiliary *ỉw* which has long been highlighted in the research literature was its use to mark initiality (Loprieno 1995:163). Due to this, *ỉw sḏm.n=f* was restricted to use in initial main clauses, and in subordinate and non-initial main clauses *sḏm.n=f*, without *ỉw*, was used (Ex.18 & Ex.21), expressing the same tense as *ỉw sḏm.n=f*.

(18)

nšnš.n	*ỉwrt*	*ỉspš.n=k*	*grḥ*
give_birth.PRF	conceive.PST.PTCP.NOM	dazzle.PRF=2MSG	night

....she who conceived has given birth and you have dazzled the night....
PT205a[W] (Allen 2017:154)
5th dynasty, Unis

Unlike the past *sḏm=f*, *(ỉw) sḏm.n=f* was regularly used with a transitive content verb with a 1st person subject. However, verbs of motion could not be used as the content verb of *(ỉw) sḏm.n=f* (Doret 1986:126), and instead appeared in the stative. This was the case for all variations in person and number of the subject, unlike in the past *sḏm=f*, where this only

[22] Also labelled the old perfective (Gardiner 1957), pseudo-participle (Neveu 2015), and qualitative (Johnson 1976).
[23] *sḏm=ỉ* can be found, but this was restricted to use in circumstantial clauses (Doret 1981:105).
[24] For further discussion see Doret (1981:104-113).

occurred when the subject was the 1st person (Doret 1986:117). The stative could also be used interchangeably with (*iw*) *sḏm.n=f* for other intransitive verbs (Doret 1986:175).

(19) *[i]w* *mḥw* *p[n]* *ii.y* *r* *bw* *nt(y)* *bꜣk* *im*
AUX Mehu this come.STV to place REL servant there
This Mehu came to the place where the servant was.
P. Boulaq 8, 5-6 (Doret 1986:104)
6th dynasty, Pepi I

(20) *iw* *grt* *snd* *ḫpr(.w)* *m* *kt*
AUX PART fear come_into_being.STV in other
Fear had come into being in another (town).
Merer, 7 (Doret 1986:147)
First Intermediate Period

Research by Doret found that use of (*iw*) *sḏm.n=f* was initially restricted to non-narrative texts (Doret 1981:155), more specifically legal texts, letters and descriptive texts. Such genres of texts described past events from a present perspective (Doret 1986:97) and thus were appropriate contexts for the perfect meaning of (*iw*) *sḏm.n=f*. In contrast, the past *sḏm=f* in early Old Egyptian was used in narrative texts (Doret 1981:155), which 'relate a succession of events set in the past' (Doret 1986:97), an appropriate usage for the simple past meaning of the past *sḏm=f*.

During the 6th dynasty (Doret 1986:97), (*iw*) *sḏm.n=f* underwent semantic broadening, in which the meaning of a word or construction generalises, allowing it to appear in an increasingly wider range of contexts (Bybee 2015:239), gaining the ability to express the simple past, as in Ex.21-22.

(21) *iw(=i)* *pr.k* *m-sꜣ=f* *r* *tꜣ* *tmḥ*
AUX=1SG set_out.STV after=3MSG to land Tjemeh
sḫtp.n(=i) *sw*
pacify.PST=1SG 3MSG
I set out after him to the land of Tjemeh and I pacified him....
Urk. I, 126.2-3
6th dynasty, Merenre & Pepy II

(22) *iw* *ir.n(=i)* *ʿḥʿw* *r* *rnpt* *100*
AUX spend.PST=1SG lifetime to year 100
m-m *imꜣḫw* *ʿnḫw* *ḫr(yw)* *kꜣ*
among revered_ones live.PRS.PTCP.NOM possessing ka
I spent a lifetime up to 100 years among the living revered ones, possessing a ka.
Urk. I, 221.18
6th dynasty, Pepy II

Since a word or construction undergoing semantic broadening retains it original meaning along with its new meaning (Fromkin et al. 2011:508), (*iw*) *sḏm.n=f* also retained its ability

to express the perfect. The development from perfect to past is well documented crosslinguistically, having occurred in a number of Indo-European languages such as French, Dutch and German, in African languages of the Kru and Bantu groups, and in Mandarin Chinese (Bybee et al. 1994:81)[25].

The semantic broadening of *(iw) sḏm.n=f* ensured that it was able to express the same meaning as the past *sḏm=f*. Furthermore, *(iw) sḏm.n=f* at this stage was able to be used in a wider range of genres of texts than it had been initially, becoming used in narrative texts such as tomb biographies, as illustrated by Ex.21 and Ex.22 from the biographies of Harkhuf and Pepyankh-Heriib respectively. This is likely an effect of the semantic broadening of *(iw) sḏm.n=f*, since the past expresses a more general meaning than the perfect, which is consequently compatible with a greater range of contexts (Bybee et al. 1994:86). As a result of this grammaticalisation of *(iw) sḏm.n=f*, 6th dynasty inscriptions 'show a tendency to replace the indicative [past] *sḏm=f* with the compound form *jw sḏm.n=f* as the simple past construction' (Doret 1986:108). For example, Ex.23 shows a parallel example with the same content verb and in the same text as Ex.14, illustrating the use of *(iw) sḏm.n=f* in the same context as the past *sḏm=f*.

(23)

iw	*ḥꜣb.n*	*w(i)*	*ḥm*	*n*	*mr-n-rˁ*	*nb(=i)*....	*r*	*ỉꜣm*
AUX	send.PST	1SG	majesty	GEN	Merenre	lord=1SG....	to	Iam

The majesty of Merenre, my lord, sent me.... to Iam....
Urk. I, 124.9-11
6th dynasty, Merenre & Pepy II

The overlap in usage of the past *sḏm=f* and *(iw) sḏm.n=f*, beginning in the 5th dynasty, shows the linguistic characteristic of layering within the development of the past construction, in which older forms, or layers, are not discarded as new forms emerge, but remain to coexist and interact with the newer forms (Hopper 1991:22).

By no later than the First Intermediate Period (Loprieno 1995:78), the auxiliary *iw* before *sḏm.n=f* in initial main clauses could be replaced by an alternative auxiliary or particle.

(24)

ˁḥˁ.n	*rdi.n=f*	*n(=i)*	*nn*
AUX	give.PST=3MSG	DAT=1SG	these

Then he gave these to me....
BM EA 614, 6 (Gardiner 1957:392)
11th dynasty, Intef II & Intef III

[25] Bybee et al. use the word 'anterior' to express what Egyptologists have regularly labelled as the perfect, that is, a construction which 'signals that the situation occurs prior to reference time and is relevant to the situation at reference time' (Bybee et al. 1994:54).

(25) *ḏr.n*[26] *ḏd.n=f* *n=sn*
AUX say.PST=3MSG DAT=3PL
Finally he said to them.
P. Prisse, 2.4 (Gardiner 1957:394)
12th dynasty

(26) *mk* *grt* *rdi.n=i* *int=sn* *t3* *ipt*
PART PART cause.PST=1SG bring.FUT=3PL this oipe_scoop
Now look, I have caused that they bring this oipe scoop....
Hekanakht Letter 3, 5-6
12th dynasty, Senwosret I

The replacement of the past *sḏm=f* as the most common linguistic form of the past construction by (*iw*) *sḏm.n=f* in the 6th dynasty marked an increase in the analyticity of the past construction. This was due to the greater quantity of elements within (*iw*) *sḏm.n=f* in comparison to the past *sḏm=f*, from the additional presence of *iw* and *.n*. The autonomy of *iw* in (*iw*) *sḏm.n=f*, which may be seen in its separability from remainder of the construction (Ex.27-28), also ensured that (*iw*) *sḏm.n=f* had a greater level of autonomy than the past *sḏm=f*, which did not have an additional element able to be separated from the content verb and subject.

(27) *iw* *gr* *ḥ3b.n* *w(i)* *ḥm=f* *m-ḫmt-nw* *zp* *r* *i3m*
AUX PART send.PST 1SG majesty=3MSG third time to Iam
His majesty sent me to Iam a third time.
Urk. I, 125.13
6th dynasty, Merenre & Pepy II

(28) *iw* *grt* *mr* *mšʿ* *n* *iwnit* *ii.y*
AUX PART overseer army GEN Armant come.STV
The general of Armant came....
Ankhtifi, II.ε.1 (Doret 1986:146)
10th dynasty

Furthermore, although the verb ending *.n* in the linguistic form (*iw*) *sḏm.n=f* was inseparable from the verb, in the written form it regularly followed any determinative of the verb stem (Gardiner 1957:325), showing a level of independence from the verb itself. Although this is an orthographic issue which simply indicates that *.n* was viewed as an ending by language users, this shows that it was viewed as a identifiably distinct part of the construction, with an intact morpheme boundary between this and the content verb it provided an ending for. Since the past *sḏm=f* did not have a verb ending it did not exhibit this minor increased autonomy, again ensuring that (*iw*) *sḏm.n=f* was more autonomous.

[26] Auxiliaries of this structure, such as *ḏr.n* and *ʿḥʿ.n*, derived from the grammaticalization of *sḏm.n=f* forms of particular verbs, such as *ḏr* and *ʿḥʿ* (Loprieno 1995:186).

Thus the increased analyticity of the past construction was due to an increase in its quantity of elements and level of autonomy.

2.a.ii. First Syntheticisation ((*iw*) *sḏm.n=f* ≈> *sḏm=f*)

The use of (*iw*) *sḏm.n=f* as the most common form of the past construction continued throughout Middle Egyptian. Consequently, no changes to the analyticity or syntheticity of the construction occurred during this stage.

(29) *iw* *ir.n=i* *ꜣgb* *wr*
AUX make.PST=1SG inundation great
I made the great inundation....
CT VII, 463c[B1Bo]
Late 11th-early 12th dynasty

(30) *iw* *di.n* *ṯw* *ḥm=i* *r* *smr*
AUX cause.PST 2MSG majesty=1SG to companion
iw=k *m* *ḥwn* *n* *rnpt* *26*
CIRC=2MSG as young_man GEN year 26
My majesty caused you to be a companion when you were a young man of 26 years.
Lesestücke, 70.22-23
12th dynasty, Senwosret III

(31) *ḥꜥ.n* *in.n=f* *nꜣ* *n* *mw* *n* *pꜣ* *š* *r* *ḥꜥw=sn*
AUX bring.PST=3MSG the GEN waters in this lake to positions=3PL
Then he brought the waters in this lake to their positions....
P. Westcar, 6.12-13
Second Intermediate Period

(32) *iw* *grt* *ḫrp.n* *n=f* *ḥm=i* *mnw* *ꜥšꜣ* *wrt*
AUX PART provide.PST DAT=3MSG majesty=1SG monument many very
My majesty provided very many monuments for him....
Urk. IV, 173.6 (Gardiner 1957:188)
18th dynasty, Thutmose III

The increase in syntheticity of the past construction began in early Late Egyptian, when the past *sḏm=f* became the most common linguistic form used to express the past construction.

(33) *ḏꜣy=sn* *tꜣ* *mšdt* *nty* *ḥr* *rsy* *n* *ḳdš*
cross.PST=3PL the ford REL on south GEN Kadesh
They crossed the ford which is south of Kadesh....
K*RI* II, 118.8-9 (Neveu 2015:65)
19th dynasty, Ramesses II, year 5

(34) *sš=w* *ꜥn*
pass.PST=3PL again
They passed again.
RAD, 53.4
20th dynasty, Ramesses III, year 29

(35) ꜥḥꜥ.n ḏd n=f ỉst
AUX say.PST DAT=3MSG Isis
Then Isis said to him....
LES, 43.16
20th dynasty, Ramesses V

The multiple possible ways in which the Late Egyptian past *sḏm=f* may have developed are still under debate, due to a lack of firm empirical evidence. Černý & Groll have said:

> 'It certainly seems probable the Late Egyptian *stp.f* had been influenced by Middle Egyptian *iw stp.n=f*, but it is difficult to say in what way this happened, whether, as it fell into disuse, *iw stp.n=f* passed on its past function or whether it gradually merged into *stp.f* by absorption of the characteristic formatives *iw* and *n*' (Černý & Groll 1993:210).

It is possible that the later Egyptian past *sḏm=f* developed through the loss of *iw,* due to its change in function from initial main clause marker to circumstantial marker between the end of the 17th dynasty and reign of Amenhotep II (Kruchten 1999:72-73 & 89), and the loss of *.n,* from *(iw) sḏm.n=f*. The spread of past construction main clause forms without the verb ending *.n* has been determined to have taken place around the late 17th dynasty (Kruchten 1999:6-20 & 48).

It is also possible that the later Egyptian past *sḏm=f* was simply the Old Egyptian past *sḏm=f* regaining popularity. This would make the development from *(iw) sḏm.n=f* to *sḏm=f* the only example of syntheticisation by replacement, rather than through the adaptation of the existing form, within Egyptian verbal constructions. The Old Egyptian past *sḏm=f* did survive in written texts throughout Middle Egyptian, although its use was extremely rare and may have been an archaism, and examples from late Middle Egyptian (Ex.39) may show early examples of the Late Egyptian past *sḏm=f*.

(36) ꜥḥꜥ.n rdi=f wỉ m r=f
AUX place.PST=3MSG 1SG in mouth=3MSG
Then he placed me in his mouth....
MES, 43.14
12th dynasty

(37) ḥs w(i) ḥm=f ḥr=f r-ꜣt wrt
praise.PST 1SG majesty=3MSG on_account_of=3MSG greatly very
His majesty praised me very greatly on account of it.
BM EA 828, 8 (Gardiner 1957:366)
12th Dynasty, Amenemhat II, year 3

(38) *iw.in* *rf* *sḫty* *pn* *r* *spr....* *ḏd=f*
come.PST PART peasant this PURP appeal.INF.... say.PST=3MSG
Then this peasant came to appeal.... and he said....
Peasant B1, 84
12th dynasty, c. Amenemhat III

(39) *iw* *ḥms=tw* *ḥr* *dmi* *n* *ḥwt-wˁrt*
AUX sit.PST=IMPRS upon town GEN Avaris
One besieged the town of Avaris....
Urk. IV, 3.7 (Gardiner 1957:385)
18th dynasty, early Thutmose III & Hatshepsut

The use of both (*iw*) *sḏm.n=f* and the past *sḏm=f* in an identical context may be seen in Middle Egyptian (compare Ex.37 and Ex.40).

(40) *iw* *ḥs.n=f* *w(i)* *ḥr=f* *r-ˁɜt* *wrt*
AUX praise.PST=3MSG 1SG on_account_of=3MSG greatly very
He praised me very greatly on account of it.
BM EA 828, 5 (Gardiner 1957:157)
12th dynasty, Amenemhat II, year 3

While the replacement of (*iw*) *sḏm.n=f* as the most common form of the past construction caused a significant decrease in its usage, it is still possible to find rare traces of *sḏm.n=f* during the 19th dynasty (Neveu 2015:52). *sḏm.n=f* was no longer required to be used with an auxiliary or particle in initial main clauses, as it had been in earlier stages of the language. This was particularly the case with the previously most commonly used auxiliary, *iw*, due to its change in function to a circumstantial marker.

(41) *sḏm.n=i* *nɜ* *mdwt* *ˁḥɜ* *(i-)hɜb=k* *n=i* *ḥr=w*
hear.PST=1SG the matters opposition REL-write.PST=2MSG DAT=1SG about=3PL
I heard the controversies which you had written to me about.
K*RI* III, 505.3-4 (Neveu 2015:52)
19th dynasty, Ramesses II

(42) *ir.n=f* *n=i* *sbɜyt*
make.PST=3MSG DAT=1SG lesson
He taught me a lesson.
K*RI* III, 772.6-7
19th dynasty, Ramesses II, mid reign

The layering of the past *sḏm=f* and (*iw*) *sḏm.n=f*, as seen in Old Egyptian[27], may have continued throughout Middle Egyptian, although the evidence of the past *sḏm=f* during this time is too rare for the existence of such layering to be certain. However, the 19th dynasty examples of *sḏm.n=f* (Ex.41-42) show that if layering did continue throughout Middle Egyptian it spanned at least from the 5th to 19th dynasties.

[27] See pg.36.

The past *sḏm=f* continued to be the most common linguistic form used to express the past construction throughout Late Egyptian and into Demotic. During Demotic it was used alongside the linguistic form *ir=f sḏm*, which was first attested in Late Egyptian, as discussed in 2.a.iii. below.

(43)

iry	*pȝ*	*ḥry*	*mḏȝy*	*ꜥnḫ*	*n*	*nb*	*ꜥ.w.s.*
make.PST	the	chief	police	oath	GEN	lord	l.p.h.

The chief of police made an oath of the lord l.p.h.....
K*RI* VI, 139.15-16
20th dynasty, Ramesses IV, year 4

(44)

ḫr	*ptr*	*di=k*	*iry*	*pȝy*	*nṯr*	*ꜥȝ*
PART	look	cause.PST=2MSG	spend.FUT	this	god	great

pȝy	*hrw*	*29*	*iw=f*	*mni*	*<m>*	*tȝy=k*	*mr*
this	day	29	CIRC=3MSG	moor.INF	in	POSS=2MSG	harbour

Now look, you have caused that this great god spend these 29 days moored in your harbour....
LES, 69.11-12
21st dynasty

(45)

ṯ=w	*n=f*	*gsṯ*
take.PST=3PL	DAT=3MSG	palette

They took a palette to him....
Onchsheshonqy, 4.15 (Johnson 1976:199)
Late Ptolemaic

(46)

ḥwy=s	*pȝy=s*	*šlf*	*r-ḥȝt*	*n-im=s*
throw.PST=3FSG	POSS=3FSG	mane	before	in=3FSG

She threw her mane before her.
Mythus, 12.15-16 (Johnson 1976:188)
c.100-199CE

The development in the past construction from (*iw*) *sḏm.n=f* to *sḏm=f*, either through direct development or replacement, increased the syntheticity of the construction. The absence of *iw* and *.n* shows a reduction in the quantity of elements within the construction. Furthermore, the interdependency of the construction increased, since in (*iw*) *sḏm.n=f* the element *iw* had been separable from the rest of the construction (Ex.27-28), while *.n* was also viewed as a distinct part of the construction, and consequently the loss of these elements reduced the overall level of autonomy.

2.a.iii. Second Analyticisation (*sḏm=f* > *ir=f sḏm*)

The linguistic form *ir=f sḏm*, which would later replace the past *sḏm=f* as the main expression of the past construction, is first attested from Late Egyptian. The earliest examples of *ir=f sḏm* in the corpus used for this thesis date to the 19th dynasty.

(47) *iry=f* *sḫwꜣ=f* *m-di=i*
AUX.PST=3MSG deny.INF=3MSG to=1SG
He denied it to me.
K*RI* IV, 80.6 (Neveu 2015:65)
19th dynasty, Merenptah, year 3

As can be seen in the content verbs in Ex.47-51, within Late Egyptian and pre-Roman period Demotic *ir=f sḏm* was syntactically restricted to use with content verbs of four or more consonants, and foreign loan words (Neveu 2015:41 & Johnson 1976:178).

(48) *m* *dy* *ḥꜣty=k* *m-sꜣ* *pꜣ* *ṯs* *prt*
NEG.IMP give.IMP heart=2MSG after the order seed
iry=i *smtr=f*
AUX.PST=1SG examine.INF=3MSG
Don't worry about the order of seed, I have examined it.
K*RI* IV, 80.16-81.2 (Neveu 2015:51)
19th dynasty, Merenptah, year 3

(49) *iry=f* *ḳnḳn=i*
AUX.PST=3MSG beat.INF=1SG
He beat me.
P. Salt 124, 2.18
Late 19th – early 20th dynasty

(50) *iry* *ṯꜣty* *nꜣ* *srw* *wdpw* *smtr* *r=f*
AUX.PST vizier the officials butlers inquire.INF about=3MSG
The vizier, the officials and the butlers inquired about it.
KRI VI, 471.12-13
20th dynasty, Ramesses IX, year 16

(51) *ir* *irṯ=s* *rḥrḥ* *n* *styt*
AUX.PST eye=3FSG glow.INF as fire
Her eye glowed as fire.
Mythus, 12.17 (Johnson 1976:188)
c.100-199CE

The restriction of *ir=f sḏm* to use with content verbs of 4 or more consonants ensured that it was frequently found in the same texts as the past *sḏm=f*, which was used for all other categories of content verb, showing the layering of these two linguistic forms.

(52) *ḏd=s* *ir* *ink* *ink* *nmḥ*
say.PST=3FSG as_for 1SG 1SG free_woman
She said, as for me, I am a free woman....
Naunakhte, 2.1
20th dynasty, Ramesses V, year 3

(53) *iry=i* *sḫpr* *pꜣy* *8* *bꜣk*
AUX.PST=1SG bring_up.INF these 8 servant
I brought up these 8 servants....
Naunakhte, 2.2
20th dynasty, Ramesses V, year 3

(54) *ḥbs* *pȝ* *tw* *ḥr=f*
cover.PST the mountain face=3MSG
The mountain covered its face.
Mythus, 12.28 (Johnson 1976:199)
c.100-199CE

(55) *ir=s* *bwbw* *n-im=s* *tr=s*
AUX.PST=3FSG gleam.INF in=3FSG entirety=3FSG
She gleamed in her entirety.
Mythus, 12.19 (Johnson 1976:188)
c.100-199CE

Throughout Demotic the syntactic restriction on *ir=f sḏm* was gradually relaxed, leading to a cycle between increased popularity and the relaxation of restrictions, in that because the restrictions were relaxed *ir=f sḏm* could be used more widely and frequently, and because of its increased use its restrictions were lifted further, and so on. By the Roman period the restrictions on *ir=f sḏm* appear to have been entirely relaxed (Johnson 1976:178), and the replacement of the past *sḏm=f* by *ir=f sḏm* as the most common linguistic form of the past construction certainly occurred prior to the Coptic language stage. Johnson (1976:178 n.101) has also suggested that the past *sḏm=f* linguistic form may have been lost from speech entirely by the Roman period, remaining in use in writing for a short time.

The linguistic form *ir=f sḏm* shows the auxiliarification of the past construction. This occurred through the addition of the verbal lexeme *ir*, 'to do', as an auxiliary, which took the place previously occupied by the content verb, while the content verb subsequently appeared after the subject in an infinitive form. The appearance of the subject between the auxiliary and content verb in *ir=f sḏm* shows a change in word order of the construction from the content verb followed by the subject (VS), in the past *sḏm=f*, to the subject followed by the content verb (SV).

The fact that *ir* was used as an auxiliary in this construction, alongside its continued use as a lexeme (Ex.43 and Ex.56-60) shows that *ir* was subject to divergence, in which the original lexical form of a grammaticalised item remains as an autonomous lexical element and is changed in the same ways as other lexical items (Hopper 1991:24-25). The use of *ir* in the auxiliarification of numerous other verbal constructions[28], which will be discussed throughout chapter 2, shows that this divergence was particularly widespread.

The auxiliarification of *ir* and its divergence from its lexical origins can be examined further using the verb-to-TAM chain proposed by Heine (1993:53-65). The verb-to-TAM chain

[28] Habitual, negative habitual, causative imperative, negative causative imperative, causative infinitive, finalis, terminative, not yet, temporal.

shows the development from a verbal lexeme to a purely grammatical marker, and has been separated into seven stages, labelled A-G (Heine 1993:59-65). Heine details four linguistic shift chains as causing the changes along the verb-to-TAM chain, namely desemanticisation, decategorialisation, cliticisation and erosion[29] (Heine 1993:53-56). Each of these details a grammaticalisation process involved in the initial reanalysis of a lexeme as an auxiliary[30], or in its subsequent further grammaticalisation.

Desemanticisation has been defined as the 'loss of semantic substance' (Norde 2012:74). This process has also been referred to as 'semantic bleaching', although it has been noted that the term 'bleaching' is inappropriate (Traugott & König 1991:190) since it focuses solely on the semantic loss, and does not take into account the grammatical meaning which is added. Consequently, a more accurate definition of the process of desemanticisation is one which takes this into account, such as Sweetser's assertion that, instead of simply the loss of lexical meaning, this process involves the exchange of a concrete domain of meaning for a more abstract and possibly more subjective domain (Sweetser 1988:392). Heine (1993:54) splits the desemanticisation chain into three stages, covering the progression from the verb in question expressing a lexical concept to it having a solely grammatical function.

Decategorialisation, a term coined by Hopper & Thompson (1984), has been defined as 'loss of the morphosyntactic properties characteristic of source forms' (Haselow 2014:210), leading to the form in question to 'become disconnected from instances of the same noun or verb used in other contexts' (Bybee 2015:129), that is to say, causing divergence. Decategorialisation from a major to minor category is regularly involved in the grammaticalisation of a lexical item to a grammatical item (Hopper & Traugott 2003:139), as occurs in auxiliarification. Heine (1993:55) splits this chain into five stages, ranging from the verb exhibiting a fully verbal morphosyntax, to the full loss of its verbal properties.

The cliticisation chain shows the stages of development of the process more typically termed morphologisation (Hopper & Traugott 2003:140-159; Joseph 2003), by which linguistic elements which are independent words become morphological (Joseph 2003:472). Within this thesis the term 'cliticisation' is used, following Heine's terminology in the context of the verb-to-TAM chain. Heine (1993:55-56) separates the cliticisation

[29] For each case of auxiliarification explored in this thesis the discussion of the auxiliary in the context of the verb-to-TAM chain is followed by a table summarising the stages reached in each chain. For example, see table 2 (pg.47) for a summary of the auxiliarification of *ir* in this context.
[30] See 3.a.ii.

chain into three stages, covering the verb's status as an independent word, clitic and affix respectively. Within the verb-to-TAM chain context, the cliticisation chain is similar to Hopper & Traugott's verb-to-affix cline: Full Verb > Auxiliary > Verbal Clitic > Verbal Affix (Hopper & Traugott 2003:111).

The final linguistic shift chain, erosion, has been described as a 'loss of phonetic substance' (Heine 2014:76), in which 'the phonetic substance of a grammaticalized form tends to become reduced and/or assimilated to its environment' (Heine et al. 1991:214). This is triggered by the grammaticalised form containing less information than its lexical source, and having a higher frequency of use. Heine (1993:56) splits the erosion chain into three stages, ranging from the verb its full phonological form to a phonologically reduced form unable to carry tone or stress.

It can be seen that the past auxiliary *ỉr* in the linguistic form *ỉr=f sḏm* has reached the final stage of the desemanticisation chain, and the third stage of the decategorialisation chain, while the verbal lexeme *ỉr* may be categorised in the initial stage of these two chains. In terms of desemanticisation, while the lexeme *ỉr* was used to express a lexical concept, typical of stage one of the desemanticisation chain (Heine 1993:54), the past auxiliary *ỉr* had lost its lexical meaning and acquired a grammatical function, typical of stage three of desemanticisation (Heine 1993:54).

The desemanticisation of the past auxiliary *ỉr*, as well as its consequential divergence from the lexeme *ỉr*, can be exemplified in the use of the lexeme *ỉr* as the content verb of *ỉr=f sḏm*.

(56)

ỉr	*pꜣy=s*	*mꜣkʿyṯ*	*ỉr*	*lhb*	*n*	*styt*
AUX.PST	POSS=3FSG	skin	make.INF	smoke	GEN	fire

Her skin made smoke of fire.
Mythus, 12.16 (Johnson 1976:188)
c.100-199CE

If the auxiliarified form of *ỉr* had retained its lexical meaning, it would not be necessary for *ỉr* to appear again as the content verb of the construction, thus this illustrates the desemanticisation of the auxiliary *ỉr*. Ex.56 also exemplifies the different semantic and syntactic roles of *ỉr* as a past auxiliary and as a verbal lexeme, showing the divergence between these two forms of *ỉr*.

Within the decategorialisation chain, the verbal lexeme *ỉr* may be categorised in stage one, having a fully verbal morphosyntax, and with the nucleus of the complement being a noun phrase (Heine 1993:55).

(57) *pȝ* *ỉr=f* *m* *pr* *ptḥ*
the do.PST.REL =3MSG in temple Ptah
....that which he did in the temple of Ptah....
P. Salt 124, 1.14
Late 19th dynasty – early 20th dynasty

(58) *ỉry=w* *ʿnḫ* *ʿȝy*
swear.PST=3PL oath great
They swore a great oath....
RAD, 53.1
20th dynasty, Ramesses III, year 29

(59) *ỉw=tw* *ỉrt* *n=ỉ* *sbȝyt* *nbt* *bin*
AUX.FUT=PASS do.INF DAT=1SG punishment any wretched
....any wretched punishment may be done to me.
P. BM EA 10052, 9.4
20th dynasty, Ramesses XI, year 19

(60) *ỉ-ỉr* *st*
IMP-do 3SG
Do it!
LRL, 20.2 (Černý & Groll 1993:344)
20th dynasty, Ramesses XI, year 28

As illustrated by the examples above, the verbal lexeme *ỉr* is able to use a noun phrase as its complement (Ex.58-60), to be passivised (Ex.59), nominalised (Ex.57), form imperatives (Ex.60), be governed by auxiliaries (Ex.59), and inflect for tense (Ex.57-58), each of which is a morphosyntactic category characteristic of verbs (Heine 1993:50). The past auxiliary *ỉr*, on the other hand, had begun to lose these characteristics, and thus had begun to progress along the decategorialisation chain. Since the only possible complement found with the auxiliary *ỉr* in the linguistic form *ỉr=f sḏm* was an infinitive, this form of *ỉr* has reached stage three of the decategorialisation chain, in which 'it may no longer have a noun as its complement nucleus'. However, within *ỉr=f sḏm* it remains possible to view this form of *ỉr* as having been conjugated in the past *sḏm=f*, thus it retained some verbal properties and had not progressed beyond stage three of this chain.

While the past auxiliary *ỉr* in *ỉr=f sḏm* had clearly begun to advance along the desemanticisation and decategorialisation chains, it had not yet progressed along the other two linguistic shift chains which Heine details. In terms of cliticisation, the lexeme and past auxiliary forms of *ỉr* both remain in stage one, with neither showing evidence of progression from the status of independent word (Heine 1993:55). However, the past

auxiliary *ir* and its complement have developed into 'a tight syntactic unit' (Heine 1993:56), showing a slight development and divergence from the verbal lexeme *ir*.

Within the erosion chain both the past auxiliary *ir* and the verbal lexeme *ir* remain in stage one, each retaining their full phonological forms (Heine 1993:56). This marks the only chain in which the auxiliary and lexeme forms of *ir* show no divergence.

The stages occupied by the verbal lexeme and past auxiliary forms of *ir* in these four individual chains aid in placing each within stages A-G of the overall verb-to-TAM chain. Since the lexeme *ir* is in stage one of each of the four chains of linguistic shifts, it is in stage A of the verb-to-TAM chain, which is characterised by the verb having its full lexical meaning (Heine 1993:59). The past auxiliary form of *ir*, on the other hand, may be categorised in stage D of the verb-to-TAM chain, although it exhibits some characteristics of stage E. Since the past auxiliary form of *ir* is only able to take an infinitive as its complement, it may be classed as a stage D, in which the items undergoing auxiliarification are only used with one type of non-finite verb form (Heine 1993:61). The loss of many of its verbal properties, but its retention of the ability to be conjugated shows that the past auxiliary *ir* exhibits a property of stage E, in which items no longer retain many of their verbal properties, although some such properties still remain, and in the item being auxiliarified exhibits characteristics of both its verbal lexemes and grammatical markers (Heine 1993:63). However, since the past auxiliary *ir* has not begun the processes of cliticisation and erosion, both of which are likely to be triggered in stage E (Heine 1993:63), it has not yet fully progressed into stage E of the verb-to-TAM chain. This analysis illustrates the stage of divergence which the past auxiliary and lexeme forms of *ir* had reached, showing that the two forms had developed different syntactic and semantic roles. However, the written language reveals no evidence of morphological or phonological divergence at this stage.

	Desemanticisation	Decategorialisation	Cliticisation	Erosion	Verb-to-TAM
ir – verbal lexeme	1	1	1	1	A
ir – past auxiliary	3	3	1	1	D/E

Table 2 – Stages reached by each form of ir in each of the four linguistic shift chains and overarching verb-to-TAM chain.

Since the auxiliarification of *ir* involved the addition of a new element to the past construction, this increased the quantity of elements within the construction, and thus increased its analyticity. Furthermore, the auxiliarification of the past construction caused an increase in the autonomy of the content verb of the construction, since the subject was no longer dependent upon it, and it was no longer inflected for past tense but appeared in a tenseless infinitive form, with the auxiliary having taken on its earlier grammatical functions.

2.a.iv. Second Syntheticisation (*ir=f sḏm* > ⲁⲣⲥⲱⲧⲙ)

By the Coptic language stage the past construction was written as ⲁⲣⲥⲱⲧⲙ.

(61) ⲁ-ⲓ-ⲥⲉⲧⲡ-ⲧⲏⲩⲧⲛ
AUX.PST-1SG-choose.INF-you.PL
....I chose you....
John, 15.19 (Layton 2000:129)
c.400-499CE

(62) ⲁ-ⲣ-ⲡⲱⲧ ⲛⲥⲱ-ⲟⲩ ⲉⲃⲟⲗ ϩⲙ-ⲡ-ⲧⲟⲟⲩ
AUX.PST-3MSG-run.INF after-3PL from in-the-monastery
....he chased them from the monastery....
Antony, 68
822-823CE

ⲁⲣⲥⲱⲧⲙ makes visible the phonological reduction of *ir* to ⲁ. It is likely that this occurred at an earlier stage, however the foregrounding of consonants in, and conservative nature of, pre-Coptic Egyptian scripts prevented this from being visible from the written language any earlier. The regular use of vowels in the Coptic writing system enabled the erosion of *ir* to ⲁ to be visible in Coptic. This erosion removed any morphological or phonological ambiguity between the past auxiliary and the verbal lexeme *ir*, which itself was written ⲉⲓⲣⲉ in its Coptic infinitival form[31] (Černý 1976:48).

Ex.63 illustrates the advanced divergence of the past auxiliary and the lexeme it originated from through the use of ⲉⲓⲣⲉ as the content verb in the ⲁⲣⲥⲱⲧⲙ construction, as they retained their previous separate syntactic and semantic roles (Ex.56), but by Coptic had clearly developed distinct morphology and phonology.

[31] As with many other Coptic verbs, ⲉⲓⲣⲉ exhibits distinctive pre-noun and pre-pronoun forms of the infinitive, these being ⲣ- and ⲁⲁ⁄ respectively, with the latter of these being the most comparable to the auxiliary ⲁ, as well as a distinct stative form ⲟ. These variations were not visible in earlier stages, with *ir* being the written form used for all three.

(63) ⲛⲧⲉⲣⲉ-ⲟ-ϯⲟⲩⲱ ⲇⲉ ⲛⲟⲓ-ⲡⲉ-ⲭⲟⲣⲧⲟⲥ
AUX.TEMP-3MSG-bloom.INF PART SBJ-the-plant
ⲁⲩⲱ ⲁ-ⲟ-ⲉⲓⲣⲉ ⲛ-ⲟⲩ-ⲕⲁⲣⲡⲟⲥ
and AUX.PST-3MSG-make.INF OBJ-a-fruit
When the plant bloomed and it made a fruit....
Matt., 13.26
c.750-799CE

Within the verb-to-TAM and linguistic shift chains, the past auxiliary ⲁ shows further development along several chains from the position it occupied as *ir*. This auxiliary had already reached the final stage of the desemanticisation chain as *ir*, so could not progress any further along it. However, it was able to progress further along the decategorialisation chain, in which the past auxiliary *ir* had reached stage three of the five possible stages. Within ⲁⲟⲥⲱⲧⲙ, it is clear that the past auxiliary is no longer conceivable as being conjugated in any construction, as the earlier auxiliary *ir* had been[32]. Consequently, it is clear that ⲁ had lost all of its remaining verbal properties, and had subsequently reached the final stage of the decategorialisation chain (Heine 1993:55).

Furthermore, while the auxiliary *ir* provides no orthographic evidence of progression along the cliticisation chain, ⲁ shows evidence of having reached stage three, in which the auxiliarified item and its complement merge into a single word unit, in which the auxiliary is an affix and its complement the main verb stem (Heine 1993:56). When used with a pronominal subject, ⲁⲟⲥⲱⲧⲙ constitutes an inseparable single word unit in which the element ⲁ is an affix, and while forms with nominal subjects did not form such an inseparable unit, as discussed below, the element ⲁ still belongs to the category of affix in such uses. Thus it is clear that ⲁ has reached the final stage of the cliticisation chain.

That the cliticisation of this auxiliary began only after it had become a grammatical element, having undergone desemanticisation and decategorialisation, is commensurate with the findings of typological studies. It has been established that it is only in the stage that has been labelled 'secondary grammaticalisation' (Traugott 2002:27), which refers to the movement from a less grammatical to a more grammatical status, that a grammatical morpheme first becomes bound (Norde 2012:83). In its earlier development from lexical to grammatical item, labelled 'primary grammaticalisation' (Traugott 2002:26), the grammatical morpheme remains a free morpheme (Norde 2012:83), as occurred in the development of *ir* from lexeme to auxiliary, with it remaining an independent word within *ir=f sḏm*.

[32] See pg.46.

ⲁ shows movement along the erosion chain, having been reduced from *ir* to ⲁ. While the past auxiliary *ir* remained in stage one of the chain, ⲁ reached stage three, the final stage, in which the auxiliary has lost the ability to carry stress (Heine 1993:56). This may be seen in the fact that Coptic verbal prefixes were never stressed (Reintges 2004:34).

These progressions along the decategorialisation, cliticisation and erosion chains moved the past affix ⲁ further along the overarching verb-to-TAM chain, with it reaching stage G. In this final stage 'the verb is now purely a grammatical marker reduced typically to a monosyllable affix unable to carry distinctive tone or stress' (Heine 1993:65). The earlier past auxiliary *ir* had already become a grammatical marker through desemanticisation, but the progression of this element along the cliticisation chain converted it into an affix, while its progression along the erosion chain caused it to become the monosyllabic ⲁ, which was unable to carry stress. Consequently, the past affix ⲁ can be categorised in stage G of the verb-to-TAM chain.

These developments illustrate the continued divergence of the past auxiliary from the verbal lexeme, with there being visible differences between these in terms of phonology, morphology, syntax and semantics, illustrating the separate paths of development of the past auxiliary and lexeme.

	Desemanticisation	Decategorialisation	Cliticisation	Erosion	Verb-to-TAM
ir – verbal lexeme	1	1	1	1	A
ir – past auxiliary	3	3	1	1	D/E
ⲁ – past affix	3	5	3	3	G

Table 3 – Stages reached by each form of ir and ⲁ in each of the four linguistic shift chains and overarching verb-to-TAM chain.

The linguistic form ⲁⲫⲥⲱⲧⲙ also shows the result of coalescence, the conjoining of previously independent elements. It is probable that this was caused, at least in part, by the continued auxiliarification of *ir*, since as grammaticalised items are phonologically and semantically reduced, they become increasingly dependent on surrounding elements, to which they begin to attach (Bybee et al. 1994:6).

In forms with pronominal subjects, the subject was already affixed to the auxiliary, due to its historic form as a suffix pronoun, which by definition must be suffixed to a preceding

word (Gardiner 1957:39), in this case the auxiliary. Subsequently, coalescence at this stage occurred between the auxiliary-subject group and the content verb, preventing elements external to the construction from separating them, as illustrated by the position of the particle ⲇⲉ in Ex.64.

(64)

ⲁ-ϥ-ⲉⲓ	ⲇⲉ	ⲉⲃⲟⲗ
AUX.PST-3MSG-come.INF	PART	away

He came away.
AP48
c.300-499CE

Since both the auxiliary and pronominal subject were non-root morphemes, each being an affix, while the content verb contained a root morpheme, this coalescence involved the process of affixation. Affixation is the process through which a function word becomes part of another word (Hein & Reh 1984:35). The linguistic units involved in affixation are of differing morphosyntactic status (Heine & Reh 1984:32), with at least one being a root morpheme, and at least one being a non-root morpheme. Root morphemes are content words, such as nouns, verbs, and adjectives, while non-root morphemes are function words, such as prepositions, pronouns, and demonstratives (Hopper & Traugott 2003:4).

Pre-coalescence, in forms of the past construction with nominal subjects, the subject was separable from the element it followed, as can be seen in *(iw) sḏm.n=f* (Ex.27 and Ex.32) and *sḏm=f* (Ex.35). However, as a result of coalescence, in ⲁϥⲥⲱⲧⲙ the noun phrase which provided the subject was inseparable from the auxiliary, although it remained possible for the content verb of the construction to be separated from this auxiliary-subject group by external elements such as particles and prepositional phrases (Ex.65-66).

(65)

ⲁ-ⲡⲉ-ϥ-ϩⲏⲧ	ⲇⲉ	ⲉⲓ	ⲉⲣⲟ-ϥ
AUX.PST-POSS-3MSG-mind	PART	come.INF	to-3MSG

But his mind came to him.
AP48
c.300-499CE

(66)

ⲁ-ϩⲟⲓⲛⲉ-ϭⲉ	ⲛ-ⲛ-ⲁⲣⲓⲁⲛⲟⲥ	ⲛⲛ-ⲟⲩ-ϩⲟⲟⲩ	ⲃⲱⲕ	ⲯⲁⲣⲟ-ϥ
AUX.PST-some-PART	GEN-the-Arian	for-a-day	come.INF	to-3MSG

Then some Arians came to him for a day.
Antony, 68
822-823CE

Since the past auxiliary may be classified as a non-root morpheme, while the noun phrase of the subject always contains a root morpheme, this coalescence again involved affixation.

The continued separability of the content verb in forms with nominal subjects shows that the coalescence of the past construction cannot be focussed around this element, but was instead focussed around the auxiliary. In this process of clustering, the auxiliary acts as the nucleus, the element 'which is most informationally important' (Myhill 1988:261). Myhill (1988) presents the process of clustering around verbs and nouns, which typically contain more lexical information than the satellites they attract. However, in the Egyptian past construction, the clustering of the subject and verb around the auxiliary shows that in this case it was the element containing the most *grammatical* information which acted as the nucleus.

Croft has stated that coalescence should be considered as continuum from independent word to fusion (Croft 2003:256), and it is clear that the past construction has begun on this path with the process of affixation. However, the final stage of coalescence, fusion, in which word-internal morpheme boundaries are lost (Croft 2003:256), is not evident in this construction. The boundaries between auxiliary, subject and content verb are evident through the variability of the subject (Ex.67-68) and content verb (Ex.69-70).

(67)

ⲁ-ⲩ-ⲉⲓ	ⲉⲃⲟⲗ	ϩⲛ-ⲧ-ⲉⲩⲛⲟⲩ	ⲉⲧ-ⲙⲙⲁⲩ	ϩⲛ-ⲧ-ⲉⲕⲕⲗⲏⲥⲓⲁ
AUX.PST-3MSG-come.INF	out	in_the_hour	REL-there	from-the-church

He came out from the church in that hour.
Antony, 2
822-823CE

(68)

ⲁ-ⲩ-ⲉⲓ	ⲉ-ⲧ-ⲉⲕⲕⲗⲏⲥⲓⲁ
AUX.PST-3PL-come.INF	to-the-church

....they came to the church....
Antony, 70
822-823CE

(69)

ⲁ-ⲩ-ⲕⲁⲁ-ⲩ	ϩⲛ	ⲧ-ⲡⲓ	ⲛ-ⲁⲡⲁ	ⲙⲁⲕⲁⲣⲓⲟⲥ
AUX.PST-3MSG-leave.INF-3MSG	in	the-cell	GEN-father	Macarius

He left him in the cell of father Macarius.
AP224
c.300-499CE

(70)

ⲁ-ⲩ-ⲃⲱⲕ	ⲉ-ⲡ-ⲟⲩⲉ
AUX.PST-3MSG-go.INF	to-the-distance

He went to the distance.
AP224
c.300-499CE

This variability is a permanent feature of the past construction and thus it is impossible for the construction to have experienced fusion and completed the coalescence continuum.

While it is clear that the affixation discussed above had certainly occurred by Coptic, it is possible that this occurred earlier in the development of the past construction. However, it is unclear from written evidence whether the elements which were inseparable in the linguistic form ⲁⲣϥⲥⲱⲧⲙ were already inseparable within *ir=f sḏm* in earlier stages.

The process of affixation increased the syntheticity of the past construction, since it reduced the separability and increased the interdependency of its elements. Furthermore, the erosion of *ir* to ⲁ added to the increase in syntheticity in multiple ways. The resultant form of the phonological reduction, ⲁ, was shorter than the form it originated from, and this shorter form was thus more synthetic. Furthermore, as part of erosion, the element being eroded tends to 'become more dependent on surrounding phonetic material' (Heine 1993:106), as evidenced by its cliticisation and subsequent status as an affix, and thus the interdependency of the past construction was increased.

2.a.v. Conclusions

As illustrated by the evidence of the two analyticisation and two syntheticisation stages, the past construction exhibits the linguistic cycle pattern twice throughout its development, adding to proof of the ability of this pattern to be repeated[33] within the development of a single construction. Furthermore, an exploration of the processes which caused the various increases in analyticity and syntheticity in the past construction reveals that the analyticity of the construction was increased on two occasions through the presence of additional elements in comparison to the preceding linguistic form, while syntheticisation occurred first through loss or the rejuvenation of an older form, and later through erosion and coalescence.

The development of the past construction also shows the possibility for synchronic variation in analyticity and syntheticity. This is exhibited by *iw sḏm.n=f* and *sḏm.n=f*, which were simply variations of the most common linguistic form of the past construction throughout late Old and Middle Egyptian, used in initial and non-initial contexts respectively. The different levels of analyticity and syntheticity caused by the presence or absence of *iw* in these variant forms shows that synchronic paradigmatic variations in analyticity and syntheticity were possible.

[33] Two previously noted examples of the repetition of the linguistic cycle from other languages will be discussed in chapter 6.

2.b. Perfect

w3ḥ=f sḏm > ϩⲁⲫⲥⲱⲧⲙ > (ϩ)ⲁⲫⲟⲩⲱ ⲉⲫⲥⲱⲧⲙ

In the earlier stages of Egyptian the perfect tense, which expressed an action that had been completed prior to the reference time and is relevant to the situation at reference time, was predominantly expressed by the past construction. The sole exception to this occurred in the 5th dynasty, with *(iw) sḏm.n=f*, which was initially used only to express the perfect. However, by the 6th dynasty *(iw) sḏm.n=f* had gained the ability to express the simple past[34], and subsequently the perfect was once again expressed by the past construction. This remained the case until the emergence of a separate perfect construction within the Demotic language stage. The initial linguistic form of this construction, *w3ḥ=f sḏm*, was used to describe 'an action which had already taken place and was commonly used to provide background information' (Johnson 1976:205), and provided an alternative means of expressing the perfect to the contemporary past *sḏm=f*.

2.b.i. Development of a Separate Perfect Construction (*w3ḥ=f sḏm*)

The emergence of *w3ḥ=f sḏm*, which is first attested from mid Demotic (Richter 1997/1998:67), caused morphological and phonological distinctions between the past and perfect. The formation of *w3ḥ=f sḏm* involved the auxiliarification of the past *sḏm=f*, with the verbal lexeme *w3ḥ*[35], which in Demotic meant 'to put' or 'to stop', grammaticalised as an auxiliary.

(71) *w3ḥ=s* *ms=n*
AUX.PRF=3FSG bear.INF=1PL
She had born us.
Michaelides, 8 (Johnson 1976:208)
Late Ptolemaic

(72) *w3ḥ* *p3* *wyn* *ḫpr*
AUX.PRF the light come_into_being.INF
Has the light come into being?
Magical, 17.12
c.200-299CE

Within the verb-to-TAM chain proposed by Heine[36] (1993:53-65), the lexeme *w3ḥ* may be categorised in stage A (Heine 1993:59), having experienced no desemanticisation, decategorialisation, cliticisation or erosion. In contrast, *w3ḥ* as an auxiliary shows some

[34] See pg.35-36.
[35] For examples of the lexeme usage of *w3ḥ* see Ex.172 (pg.98), Ex.231 (pg.121), Ex.311 (pg.164) and Ex.413 (pg.214).
[36] See pg.43-45 for a full description of this chain.

development along two of these linguistic shift chains, desemanticisation and decategorialisation.

In terms of desemanticisation, the auxiliary *wꜣḥ* was no longer the fully lexical concept it had been as a lexeme, but had reached the third and final stage of this chain, in which 'the subject is no longer associated with willful/human referents, and the verb acquires a grammatical function' (Heine 1993:54). The use of *wꜣḥ=f sḏm* with a non-human subject may be seen in Ex.72.

The auxiliary *wꜣḥ* may also be categorised within stage three of the decategorialisation chain. Within this stage the complement may no longer have a noun phrase nucleus (Heine 1993:55), and this is reflected in the fact that the auxiliary *wꜣḥ* only took infinitival complements. However, since within *wꜣḥ=f sḏm* it is possible to regard *wꜣḥ* as being conjugated in the past *sḏm=f*, it is clear that this form of *wꜣḥ* retained some verbal properties, and thus may not be categorised within any further stage of the decategorialisation chain.

Despite its advancements along the desemanticisation and decategorialisation chains, the writing of the auxiliary *wꜣḥ* does not exhibit any evidence of cliticisation or erosion at this stage, being an independent word in its full phonological form (Heine 1993:55-56), and thus remaining in stage one of each of these chains. This ensured that there was no external difference between the verbal lexeme and the grammaticalised auxiliary form (Sethe 1915:114).

As a result of its progression along the desemanticisation and decategorialisation chains, and lack thereof along the cliticisation and erosion chains, the auxiliary *wꜣḥ* in *wꜣḥ=f sḏm* may be classed in stage D of the overarching verb-to-TAM chain, showing its divergence from the lexeme *wꜣḥ*, which remained in stage A. The auxiliary *wꜣḥ* also shows some properties of stage E, in that it exhibits the characteristics of both verbal lexemes and grammatical markers (Heine 1993:63). However, the lack of cliticisation and erosion, each of which is likely to be triggered in stage E (Heine 1993:63), ensures that *wꜣḥ* may not yet be categorised as fully within this stage.

	Desemanticisation	Decategorialisation	Cliticisation	Erosion	Verb-to-TAM
wꜣḥ – verbal lexeme	1	1	1	1	A
wꜣḥ – perfect auxiliary	3	3	1	1	D/E

Table 4 – Stages reached by each form of wꜣḥ in each of the four linguistic shift chains and verb-to-TAM chain.

The categorisation of the auxiliary *wꜣḥ* within each chain is identical to the categorisation of the auxiliary *ỉr* within the auxiliarification of the past construction[37], showing a significant similarity in the initial stage of auxiliarification in these two constructions. The auxiliarification of the perfect construction also shows a change in word order between the past *sḏm=f* and *wꜣḥ=f sḏm*[38] from VS to SV.

wꜣḥ=f sḏm was more analytic than the past *sḏm=f*, which may be seen as its semantic predecessor and provided its syntactic structure. This greater analyticity was caused in multiple ways by the process of auxiliarification. Firstly, since auxiliarification involved the addition of the new auxiliary, *wꜣḥ*, this increased the quantity of elements in the construction. Furthermore, the content verb became more autonomous through no longer being inflected to express any grammatical information, and the subject no longer being dependent on it, increasing the autonomy of the construction as a whole. Moreover, the content verb could be further separated from the auxiliary and subject by the use of a circumstantial clause as the complement of the auxiliary (Ex.73-74), as opposed to the infinitive alone.

(73)

wꜣḥ=w	*ỉw=w*	*sḥ=k*				
AUX.PRF=3PL	CIRC=3PL	register.INF=2MSG				
r	*[tꜣ*	*ḥ]wly*	*m-bꜣḥ*	*pꜣ*	*[ḥry]*	*ntrw*
in	the	register	before	the	chief	gods

You have been registered in the register before the chief of gods.
P. Petese Tebt. A, 2.24 (Grossman 2009:98)
c.75-125CE

[37] See pg.43-48.
[38] See 3.a.iv.1.

(74) *w3ḥ=f* *iw=f* *ir*
AUX.PRF=3MSG CIRC=3MSG make.INF
n *n3y=f* *swšyw* *n3y=f* *ʿbyw*
OBJ POSS=3MSG burnt_offerings POSS=3MSG offerings
He has made his burnt offerings and his offerings.
P. Carlsberg 207, x+2.18 (Grossman 2009:99)
c.100-199CE

w3ḥ=f iw=f sḏm has not been found in texts prior to the 2nd century CE (Quack & Ryholt 2000:150), and likely shows a predecessor of the linguistic form ⲉⲁⲭⲟⲩⲱ ⲉⲭⲥⲱⲧⲙ, discussed in 2.b.iii.

2.b.ii. Syntheticisation (*w3ḥ=f sḏm* > ⲉⲁⲭⲥⲱⲧⲙ)

By early Coptic the perfect construction was written ⲉⲁⲭⲥⲱⲧⲙ.

(75) ⲉⲁ-ⲓ-ⲥⲉϩⲧ ⲛⲁ-ⲕ ⲉⲧⲃⲉ-ⲡⲁⲓ
AUX.PRF-1SG-write.INF DAT-2MSG about-this
ⲭⲉ(-ⲉ)-ⲕ-ⲉ-ⲕⲱ ⲛⲁ-ⲓ ⲉⲃⲟⲗ ⲛ-ⲁ-ⲛⲟⲃ[ⲉ]
so_that-AUX.FUT-2MSG-AUX.FUT-put.INF OBJ-1SG out POSS-1SG-sin
I have written to you about this so that you may forgive me my sins.
Meletian Letter, 24 (Johnson 1976:212)
c.300-349CE

(76) ⲉⲧⲃⲉ-ⲡⲉⲓ ⲉⲁ-ⲟⲩ-ⲗⲁⲯⲓ ⲛ-ⲛⲉ-ⲩ-ⲙⲁⲑⲏⲧⲏⲥ ⲯⲉ ⲛⲁ-ⲩ
because_of-this AUX.PRF-a-enough GEN-POSS-3MSG-disciple go.INF DAT-3PL
Because of this, enough of his disciples had gone to them.
John, 6.66 (Fayumic) (Johnson 1976:212)
c.300-399CE

Within ⲉⲁⲭⲥⲱⲧⲙ the auxiliary, now written ⲉⲁ, shows the result of its progression along the cliticisation chain, having become an affix and thus reached the third and final stage of this chain (Heine 1993:56). This development from independent word to affix also helps illustrate the progression of ⲉⲁ to stage five of the decategorialisation chain since, as an affix, ⲉⲁ could no longer be viewed as being conjugated at all, thus showing the loss of its remaining verbal properties.

ⲉⲁ also shows progression along the erosion chain, due to the erosion of the phonological substance (Heine 1993:56) of *w3ḥ*. Furthermore, as with all Coptic verbal prefixes (Reintges 2004:34), ⲉⲁ was unable to carry stress, and thus it may be categorised in stage three of the erosion chain (Heine 1993:56).

As a consequence of its progression to the final stage of each linguistic shift chain (having already reached the final stage of desemanticisation as *w3ḥ*), ⲉⲁ may also be categorised in the final stage of the verb-to-TAM chain (Heine 1993:65).

	Desemanticisation	Decategorialisation	Cliticisation	Erosion	Verb-to-TAM
w3ḥ – verbal lexeme	1	1	1	1	A
w3ḥ – perfect auxiliary	3	3	1	1	D/E
ⲉⲁ – perfect affix	3	5	3	3	G

Table 5 – Stages reached by each form of w3ḥ and ⲉⲁ in each of the four linguistic shift chains and verb-to-TAM chain.

Within Coptic the verbal lexeme which had earlier been written *w3ḥ* was written ⲟⲩⲱⲉ for the meaning 'to put' (Černý 1976:222), and ⲟⲩⲱ for the meaning 'to finish' (Černý 1976:210), showing clear orthographic differentiation between these. Furthermore, the morphological and phonological difference between these and the perfect auxiliary ⲉⲁ shows their advanced divergence, and that the earlier (and continued) syntactic and semantic differences of the verbal lexeme *w3ḥ* and auxiliary *w3ḥ* were enough to ensure that they developed separately and differently.

As with the initial stage of auxiliarification of this construction, this stage of auxiliarification which resulted in the linguistic form ⲉⲁⲣⲥⲱⲧⲙ shows a strong similarity to the auxiliarification of the past construction, specifically in the development from *ir=f sḏm* to ⲁⲣⲥⲱⲧⲙ[39]. This stage of auxiliarification in each construction shows identical developments along each linguistic shift chain, and along the verb-to-TAM chain. Subsequently, within the past and perfect constructions, each stage of auxiliarification of *w3ḥ* and *ir* involved the same linguistic shifts[40].

Also similar to ⲁⲣⲥⲱⲧⲙ, ⲉⲁⲣⲥⲱⲧⲙ shows the effects of coalescence[41]. In forms of the construction used with pronominal subjects, the subject was already inseparable from the auxiliary, due to the historic use of suffix pronouns to express pronominal subjects ensuring that these were suffixed to the auxiliary. Subsequently, the coalescence visible from ⲉⲁⲣⲥⲱⲧⲙ involved the affixation of the auxiliary-subject group and content verb. This

[39] See pg.49-50.
[40] Compare table 5 (pg.58) with table 3 (pg.50).
[41] See pg.50-53.

affixation led to the inseparability of all elements of the construction, with external elements appearing outside of the single prosodic unit ⲉⲁϥⲥⲱⲧⲙ.

(77) ⲉⲁ-ϥ-ⲥⲟⲧⲙ ⲇⲉ ⲛⲟⲏ-ⲉⲏⲣⲱⲇⲏⲥ
AUX.PRF-3MSG-hear.INF PART SBJ-Herod
Herod heard[42]....
Matt., 2.3 (Oxyrhynchitic)
c.300-499CE

When the subject was nominal the auxiliary and subject had previously been separable, but in the coalescence of this construction these were affixed together. The content verb was not involved in this coalescence, and remained separable from the auxiliary-subject group by external elements.

(78) ⲉⲑⲁ[43]-ⲣⲟⲩⲉ ⲇⲉ ⲱⲟⲡⲉ
AUX.PRF.REL-evening PART come_into_being.INF
When[44] evening had come to be...
Matt., 14.15 (Oxyrhynchitic)
c.300-499CE

Similar to the past construction[45], the coalescence of the perfect construction did not involve the process of fusion, in which word-internal morpheme boundaries are lost (Croft 2003:256), since the boundaries between ⲉⲁ, the subject and content verb are discernible. Thus ⲉⲁϥⲥⲱⲧⲙ did not complete the final stage of the coalescence continuum.

The developments which led to the linguistic form ⲉⲁϥⲥⲱⲧⲙ caused an increase in the syntheticity of the perfect construction. The erosion of the auxiliary caused this element, and consequently the entire construction, to be reduced in length. Furthermore, the coalescence of various elements increased the interdependency of the construction.

2.b.iii. Analyticisation (ⲉⲁϥⲥⲱⲧⲙ > (ⲉ)ⲁϥⲟⲩⲱ ⲉϥⲥⲱⲧⲙ)

Within early Coptic, the distinction between the perfect and past constructions was retained, with ⲁϥⲥⲱⲧⲙ being used for past narration and ⲉⲁϥⲥⲱⲧⲙ used to give background information (Johnson 1976:211), as in Ex.78. However not long into the Coptic language stage, the distinction in meaning and usage between the perfect ⲉⲁϥⲥⲱⲧⲙ and the past ⲁϥⲥⲱⲧⲙ was predominantly neutralised (Grossman 2009:82), leading to confusion

[42] See 2.b.iii. for the use of ⲉⲁϥⲥⲱⲧⲙ as a simple past tense.
[43] ⲉⲑⲁ- = ⲉⲧ-ⲉⲁ-.
[44] Since ⲣⲟⲩⲉ is indefinite, the relative form here acts as a circumstantial.
[45] See pg.52.

between these two forms (Johnson 1976:212). As a result, ⲉⲁⲩⲥⲱⲧⲙ and ⲁⲩⲥⲱⲧⲙ could each be used to express both the past and perfect.

In some dialects, such as Sahidic, in which the phoneme represented by ⲉ was very weak (Worrell 1934:37), ⲁⲩⲥⲱⲧⲙ was more commonly used for expressing both the past and perfect than ⲉⲁⲩⲥⲱⲧⲙ. However, texts from other dialects, such as Oxyrhynchitic, show the use of ⲉⲁⲩⲥⲱⲧⲙ to express both the past and perfect, rather than ⲁⲩⲥⲱⲧⲙ (contrast Ex.79 and Ex.80).

(79)

ⲁⲩⲱ	ⲉⲁ-ⲩ-ⲥⲟⲧⲙ	ⲛⲟⲏ-ⲛⲉ-ⲧ-ⲙⲁⲑⲏⲧⲏⲥ			
and	AUX.PRF-3PL-hear.INF	SBJ-POSS-3MSG-disciple			
ⲉⲁ-ⲩ-ⲫⲏⲓⲉ	ⲉϫⲛ	ⲡⲉ-ⲩ-ⲉⲁ			
AUX.PRF-3PL-fall.INF	upon	POSS-3PL-face			
ⲉⲁ-ⲩ-ⲉⲣⲉⲁⲧⲉ	ⲉⲙⲁϣⲁ	ⲉⲁ-ⲧ-ⲉⲓ	ⲛⲟⲏ-ⲓⲏⲥ		
AUX.PRF-3PL-be_afraid.INF	very	AUX.PRF-3MSG-come.INF	SBJ-Jesus		
ⲉⲁ-ⲧ-ⲭⲉϩ	ⲉⲣⲁ-ⲩ	ⲉ-ⲧ-ⲭⲱ	ⲙⲙⲁ-ⲥ	ⲭⲉ	
AUX.PRF-3MSG-touch.INF	OBJ-3PL	CIRC-3MSG-say.INF	about-3FSG	PART	
ⲧⲟⲩⲛ	ⲧⲏⲛⲟⲩ	ⲙⲡⲣ-ⲉⲣⲉⲁⲧⲉ			
rise_up.IMP	2PL	AUX.NEG.IMP-be_afraid.INF			
ⲉⲁ-ⲩ-ⲧⲓ	ⲇⲉ	ⲛ-ⲛⲉ-ⲩ-ⲃⲉⲗ	ⲉϩⲣⲏⲓ		
AUX.PRF-3PL-lift.INF	PART	OBJ-POSS-3PL-eye	up		
ⲙⲡ-ⲟⲩ-ⲛⲉ	ⲉ-ϩⲓ	ⲁⲙⲙⲏⲧⲓ	ⲓⲏⲥ	ⲟⲩⲁⲉⲧ-ⲧ	
AUX.NEG.PST-3PL-see.INF	OBJ-anyone	except	Jesus	self-3MSG	

And his disciples heard, and they fell on their faces, and they were very afraid. Jesus came and he touched them, saying 'Raise yourselves up, and don't be afraid'. They lifted up their eyes, and they did not see anyone but Jesus himself.
Matt., 17.6-8 (Oxyrhynchitic)
c.300-499CE

(80)

ⲁ-ⲧ-ⲥⲱⲧⲙ	ⲇⲉ	ⲛⲟⲓ-ⲙ-ⲙⲁⲑⲏⲧⲏⲥ			
AUX.PST-3PL-hear.INF	PART	SBJ-the-disciple			
ⲁ-ⲩ-ϩⲉ	ⲉϩⲣⲁⲓ	ⲉϫⲙ-ⲡⲉ-ⲩ-ϩⲟ			
AUX.PST-3PL-fall.INF	down	upon-POSS-3PL-face			
ⲁⲩⲱ	ⲁ-ⲩ-ⲣϩⲟⲧⲉ	ⲉⲙⲁⲧⲉ	ⲁ-ⲧ-†ⲡⲉϥⲟⲩⲟⲓ	ⲛⲟⲓ-ⲓⲥ	
and	AUX.PST-3PL-be_afraid.INF	very	AUX.PST-3MSG-advance.INF	SBJ-Jesus	
ⲁ-ⲧ-ⲭⲱϩ	ⲉⲣⲟ-ⲟⲩ	ⲉ-ⲧ-ⲭⲱ	ⲙⲙⲟ-ⲥ	ⲭⲉ	
AUX.PST-3MSG-touch.INF	OBJ-3PL	CIRC-3MSG-say.INF	about-3FSG	PART	
ⲧⲱⲟⲩⲛ	ⲙⲡⲣ-ⲣϩⲟⲧⲉ				
rise_up.IMP	AUX.NEG.IMP-be_afraid.INF				
ⲁ-ⲩ-ⲧⲓ	ⲇⲉ	ⲛ-ⲛⲉ-ⲩ-ⲃⲁⲗ	ⲉϩⲣⲁⲓ		
AUX.PST-3PL-lift.INF	PART	OBJ-POSS-3PL-eye	up		
ⲙⲡ-ⲟⲩ-ⲛⲁⲩ	ⲉ-ⲗⲁⲩ	ⲉⲓⲙⲏⲧⲉⲓ	ⲓⲥ	ⲙⲁⲩⲁⲁ-ⲧ	
AUX.NEG.PST-3PL-see.INF	OBJ-anyone	except	Jesus	self-3MSG	

But his disciples heard, and they fell down on their faces, and they were very afraid. Jesus advanced and he touched them, saying 'Rise up, and don't be afraid'. They lifted up their eyes, and they did not see anyone but Jesus himself.
Matt., 17.6-8 (Sahidic)
c.750-799CE

It is possible that the confusion between ⲉⲁⲫⲥⲱⲧⲙ and ⲁⲫⲥⲱⲧⲙ came about due to a similar pronunciation of the two forms. These are particularly likely to have had very similar pronunciations since the weakness or absence of ⲉ was a general tendency across multiple dialects (Worrell 1934:110). Thus the weakness of the initial ⲉ in ⲉⲁⲫⲥⲱⲧⲙ would have led to it having a very similar pronunciation to ⲁⲫⲥⲱⲧⲙ in such dialects. This, combined with the historical tendency in Egyptian to use the same form to express both the past and perfect and the crosslinguistically evidenced close link between past and perfect forms through their similar meanings and functions (Bybee et al. 1994:81), led to the confusion and consequent semantic merging of ⲉⲁⲫⲥⲱⲧⲙ and ⲁⲫⲥⲱⲧⲙ. This merger ensured that after early Coptic ⲉⲁⲫⲥⲱⲧⲙ only differed from ⲁⲫⲥⲱⲧⲙ morphologically, and there was no semantic difference between the two forms (Richter 1997/1998:74). However, use of ⲉⲁⲫⲥⲱⲧⲙ was considerably rarer than ⲁⲫⲥⲱⲧⲙ when all dialects are considered (Johnson 1976:213). Use of ⲉⲁⲫⲥⲱⲧⲙ occurred more frequently in the Oxyrhynchitic (Ex.77-79) and Fayumic (Ex.81) dialects.

(81)

ⲉⲁ-ⲩ-ⲉⲓⲧ-ⲫ	ⲉⲃⲁⲗ	ⲁⲩⲱ	ⲉⲁ-ⲫ-ⲥⲱⲧⲙ	ⲛⲭⲓ-ⲓⲥ
AUX.PRF-3PL-cast.INF-3MSG	out	and	AUX.PRF-3MSG-hear.INF	SBJ-Christ

ⲭⲉ	ⲉⲁ-ⲩ-ⲉⲓⲧ-ⲫ	ⲉⲃⲁⲗ
that	AUX.PRF-3PL-cast.INF-3MSG	out

They had cast him out and Christ had heard that they had cast him out.
John, 9.35 (Fayumic) (Johnson 1976:213)
c.300-399CE

The semantic merging of ⲉⲁⲫⲥⲱⲧⲙ and ⲁⲫⲥⲱⲧⲙ and the consequent fact that any construction which could be used to express the perfect could also express the past left an opening for a form which could solely express the perfect.

A new linguistic form which fulfilled this role was (ⲉ)ⲁⲫⲟⲩⲱ ⲉⲫⲥⲱⲧⲙ. This involved ⲁⲫⲥⲱⲧⲙ or, less frequently, ⲉⲁⲫⲥⲱⲧⲙ, with the verbal lexeme ⲟⲩⲱ, 'to finish', the Coptic successor of the verbal lexeme *w3ḥ* which provided the source of the auxiliary in *w3ḥ=f sḏm*, taking the place of the content verb. This was followed by a circumstantial present, the content verb of which provided the content verb for the whole construction, as in the earlier *w3ḥ=f iw=f sḏm*. Initially (ⲉ)ⲁⲫⲟⲩⲱ ⲉⲫⲥⲱⲧⲙ was grammaticalised as a completive construction, however it was later in the process of being grammaticalised into a perfect (Grossman 2009:83).

(82) ⲉⲁ-ⲩ-ⲟⲩⲱ ⲉ-ⲩ-ⲉⲣ-ⲛⲁⲉⲓⲕ
AUX.PRF-3MSG-AUX.COMPL/PRF CIRC-3MSG-commit_adultery.INF
ⲉⲣⲁ-ⲥ ⲙ-ⲡⲉ-ⲩ-ⲭⲏⲧ
in_respect_to-3FSG in-POSS-3MSG-heart
He has already committed adultery in respect to her in his heart.
Matt., 5.28 (Oxyrhynchitic) (Grossman 2009:86)
c.300-499CE

(83) ⲁ-ⲭⲏⲗⲓⲁⲥ ⲟⲩⲱ ⲉ-ⲩ-ⲉⲓ
AUX.PST-Elijah AUX.COMPL/PRF CIRC-3MSG-come.INF
Elijah has already come.
Matt., 17.12 (Grossman 2009:85)
c.750-799CE

Within the Coptic language stage, (ⲉ)ⲁⲩⲟⲩⲱ ⲉⲩⲥⲱⲧⲙ shows ongoing reanalysis from a biclausal construction into a monoclausal tripartite construction (Uljas 2019:83-9). It also shows some features of the early stages of grammaticalisation into a perfect, such as restrictions on the paradigms used to past auxiliaries such as ⲁ- and ⲉⲁ-, the use of the present circumstantial only for the complement, excluding all other converted patterns, and restrictions on the form of the content verb, which could only appear in the infinitive (Grossman 2009:94-96). However, the grammaticalisation of (ⲉ)ⲁⲩⲟⲩⲱ ⲉⲩⲥⲱⲧⲙ was not particularly advanced, and in each example this form retains its completive sense, even in examples in which it may also be read as a perfect. Furthermore, within this linguistic form, (ⲉ)ⲁⲩⲟⲩⲱ and ⲉⲩⲥⲱⲧⲙ remained separable by external elements, as in Ex.84, showing 'that the main and subordinate clauses were morpho-phonologically still quite apart from each other' (Uljas 2019:84).

(84) ⲁ-ⲩ-ⲟⲩⲱ ⲅⲁⲣ ⲉ-ⲩ-ⲥⲉⲁⲓ ⲙ-ⲡⲉ-ⲕ-ⲣⲁⲛ
AUX.PST-3PL-AUX.COMPL/PRF PART CIRC-3PL-come.INF OBJ-POSS-2MSG-name
For they have already written your name....
Phoibamon, fol.15v.col.1.9-10 (Uljas 2019:84)
822-914CE

The grammaticalisation of (ⲉ)ⲁⲩⲟⲩⲱ ⲉⲩⲥⲱⲧⲙ into a completive and later a perfect involved the auxiliarification of ⲟⲩⲱ. This auxiliarification is particularly evident from the obligatory co-referential subjects of (ⲉ)ⲁⲩⲟⲩⲱ and ⲉⲩⲥⲱⲧⲙ (Uljas 2019:86). Within (ⲉ)ⲁⲩⲟⲩⲱ ⲉⲩⲥⲱⲧⲙ, ⲟⲩⲱ has undergone desemanticisation, having acquired the grammatical function of expressing a completive and/or a perfect, and being able to be associated with non-human referents (Heine 1993:54).

(85) ⲛⲉ-ⲁ-ⲧ-ϫⲉⲙⲧⲥ-ⲟⲩⲱ ⲉ-ⲥ-ⲯⲱⲡⲓ ⲡⲉ
IMPF-AUX.PST-the-darkness-AUX.COMPL/PRF CIRC-3FSG-come_into_being.INF COP
ⲛⲉ-ⲙⲡⲁⲧⲉ-ⲓⲏⲥ ⲓ
IMPF-AUX.NY-Jesus come.INF
The darkness had already come to be, and Jesus had not yet come.
John, 6.17 (Boharic) (Grossman 2009:95)
c.300-399CE

The auxiliary ⲟⲩⲱ also shows progression along the decategorialisation chain, since its restriction to use as the content verb of ⲁⲫⲥⲱⲧⲙ or ⲫⲁⲫⲥⲱⲧⲙ shows that it has lost verbal properties such as being able to form an imperative, or be nominalised, while the restriction of its complement to the circumstantial present with an infinitive content verb (Grossman 2009:95), shows that ⲟⲩⲱ may no longer take a noun phrase as its complement. However, since the complement is clausal ⲟⲩⲱ may be categorised as no further along the decategorialisation chain than stage two.

ⲟⲩⲱ shows no progression along the cliticisation and erosion chains, remaining an independent word with its full phonological form (Heine 1993:55-56).

Within the overarching verb-to-TAM chain, ⲟⲩⲱ may be categorised in stage B, since it had lost several of its verbal properties, acquired a grammatical function, and its complement consisted of a clausal construction (Heine 1993:59). Within (ⲫ)ⲁⲫⲟⲩⲱ ⲉⲫⲥⲱⲧⲙ, ⲟⲩⲱ does show some characteristics of stage C, in that subject identity between ⲟⲩⲱ and its complement was required (Heine 1993:61). However, since in stage C the complement may not be clausal (Heine 1993:61), ⲟⲩⲱ cannot be categorised as fully within this stage.

	Desemanticisation	Decategorialisation	Cliticisation	Erosion	Verb-to-TAM
w3ḥ – verbal lexeme	1	1	1	1	A
w3ḥ – perfect auxiliary	3	3	1	1	D/E
ⲉⲁ – perfect affix	3	5	3	3	G
ⲟⲩⲱ – verbal lexeme	1	1	1	1	A
ⲟⲩⲱ – completive/ perfect auxiliary	3	2	1	1	B/C

Table 6 – Stages reached by each form of w3ḥ, ⲉⲁ and ⲟⲩⲱ in each of the four linguistic shift chains and verb-to-TAM chain.

(ⲉ)ⲁⲭⲟⲩⲱ ⲉⲭⲥⲱⲧⲙ had a higher level of analyticity than ⲉⲁⲭⲥⲱⲧⲙ. This is primarily due to the increased quantity of elements within the construction, through the additional auxiliary ⲟⲩⲱ, circumstantial marker ⲉ, and repetition of the subject within (ⲉ)ⲁⲭⲟⲩⲱ ⲉⲭⲥⲱⲧⲙ. Furthermore, (ⲉ)ⲁⲭⲟⲩⲱ ⲉⲭⲥⲱⲧⲙ shows a greater level of autonomy, due to the separability of (ⲉ)ⲁⲭⲟⲩⲱ and ⲉⲭⲥⲱⲧⲙ.

2.b.iv. Conclusions

The Egyptian perfect construction provides evidence that it is possible for the linguistic cycle to be formed in a much shorter time span than that of the full attested history of the Egyptian language. A distinct construction to express the perfect is attested from no earlier than middle Demotic, and between this time and the end of the active use of the language this construction experienced analyticisation twice and syntheticisation once, showing that a long time span is not a requirement for the formation of the linguistic cycle pattern and it may be observed over a shorter period of time.

Furthermore, the grammaticalisation of the perfect construction shows several similarities to that of the past construction. The auxiliarification of *w3ḥ* in *w3ḥ=f sḏm*, and later ⲉⲁⲭⲥⲱⲧⲙ, shows strong similarities with the auxiliarification of *ir* in the past forms *ir=f sḏm* and ⲁⲭⲥⲱⲧⲙ, reaching the same stages of each linguistic shift chain and the verb-to-TAM chain in each stage of auxiliarification. Within its syntheticisation, the perfect construction can also be seen to have undergone coalescence and erosion in the

development of ⲉⲁⲭⲥⲱⲧⲙ, similar to the development of ⲁⲭⲥⲱⲧⲙ in the past construction. Thus the first analyticisation and syntheticisation of the perfect construction were very similar to the second analyticisation and syntheticisation of the past construction. However, the analyticisation and syntheticisation of the perfect show very little similarity to the first analyticisation or syntheticisation of the past construction, with the only possible similarity being the additional presence of elements which were not an auxiliary, from the additional circumstantial converter and subject in (ⲉ)ⲁⲭⲟⲩⲱ ⲉⲭⲥⲱⲧⲙ, and the additional verb ending *.n* in the past (*iw*) *sḏm.n=f*.

2.c. Negative Past

n sḏm=f >> *bwpw=f sḏm* > *bnpw=f sḏm* > ⲙⲡⲉϥⲥⲱⲧⲙ

(*n pꜣ=f sḏm* >)

2.c.i. Analyticisation (*n sḏm=f* >> (*n pꜣ=f sḏm* >) *bwpw=f sḏm*)

Within early Old Egyptian, the linguistic form *n sḏm=f* is attested as an expression of the negative past, formed with the negative marker *n*, followed by the contemporary expression of the affirmative past[46], involving the content verb, inflected for past tense, followed by the subject.

(86)

n	*gm(=i)*	Ø	*ir.y*	*in*	*ky*	*mrt(y=i)*
NEG	find.PST=1SG		do.STV	by	other	like=1SG

I did not find that (it) had been done by another like me.
Hatnub, Gr.8, 4 (Edel 1955/1964:561)
6th dynasty, Pepy II

(87)

n	*ḏd=s*	*tz*	*šnᶜ*	*ib(=i)*
NEG	say.PST=3FSG	utterance	offend.PST.PTCP	heart=1SG

She did not speak an utterance which offended my heart.
Urk. I, 116.17 (Doret 1986:28)
6th dynasty, Pepy II

The linguistic form *n sḏm=f* was the most common expression of the negative past through to early Late Egyptian.

(88)

n	*ir(=i)*	*ḫt*	*n*	*šrr*	*ir.n(=i)*	*ḫt*	*n*	*ḥꜣty-ᶜ*
NEG	do.PST=1SG	things	for	little	do.PST=1SG	things	for	prince

I did not do things for a little man; I did things for the prince....
BM EA 1372, bottom text, 1 (Gardiner 1957:80)
11th dynasty

(89)

n	*ḫpr*	*nhw*	*m*	*mšᶜ=i*
NEG	occur.PST	loss	in	army=1SG

Loss did not occur in my army.
Beni Hasan I, 8.B.10-11 (Gardiner 1957:80)
12th dynasty, Senwosret I

(90)

mk	*n*	*wḏ=tw*	*ir.t(w)*	*mnt*	*iry*
PART	NEG	command.PST=IMPRS	do.FUT.PASS	like	thereof

Look, never has one commanded that the like thereof be done....
P. Westcar, 8.17 (Gardiner 1957:375)
Second Intermediate Period

[46] See pg.33.

(91) *n* *ms* *ḫd=tw* *r* *[kb]ny* *min*
NEG PART travel_northwards.PST=IMPRS to Byblos today
Indeed no one has travelled northwards to Byblos today.
Ipuwer, 3.6-7
19th dynasty

However, an alternative linguistic form of the negative past, *n pȝ=f sḏm*, is attested from the 9th-10th dynasties within the corpus used for this thesis. This is attested significantly less frequently than *n sḏm=f*.

(92) *n* *pȝ* *sp=s* *ỉwt*
NEG AUX.PST time=3FSG come.INF
Its time had not come.
Siut, 4.15 (Gardiner 1908:74)
9th-10th dynasties

(93) *n* *pȝ=Ø* *ḫpr* *ḏr* *rk* *rˁ*
NEG AUX.PST happen.INF since time Re
(It) had not happened since the time of Re
Ankhtifi, VI.y.x+8 (Edel 1955/1964:457)
10th dynasty

n pȝ=f sḏm shows the auxiliarification of *n sḏm=f*, with the verbal lexeme *pȝ*, 'to do in the past'[47], inserted into the content verb position of *n sḏm=f* as an auxiliary, and the content verb appearing as the complement of *pȝ*.

The use of *pȝ* as an auxiliary is attested earlier, from the 6th dynasty, within the similar linguistic form *n-zp pȝ=f sḏm*.

(94) *n-zp* *pȝ* *mrtw(=ỉ)* *sḏm* *sšt3*
NEG AUX.PST like=1SG hear.INF secret
n *ỉpt* *nswt* *ḏr-bȝḥ*
of women's_apartments royal before
Never had my like heard a secret of the royal women's apartments before.
Urk. I, 101.4 (Gardiner 1908:74)
6th dynasty

(95) *n-zp* *pȝ* *kw* *tp-ˁw* *ỉrt* *ỉm*
NEG AUX.PST other predecessor construct.INF there
No other predecessor had ever built there.
Urk. I, 222.17
6th dynasty Pepy II

n-zp pȝ=f sḏm shows the auxiliarification of *n-zp sḏm=f*. This linguistic form included the negative marker *n-zp*, which was used to explicitly provide the meaning of 'never' (Gardiner

[47] Although *pȝw* is unattested as a verbal lexeme, this probable lexical meaning has been established. See 3.a.iii.2. for further discussion.

1957:81). Thus *n-zp sḏm=f* was more semantically specialised than *n sḏm=f*, expressing the meaning of 'he had never heard'.

(96) *n-zp* *iry(=i)* *ḫt* *nb(t)* *ḏw(t)* *r* *rmṯ* *nb*
NEG do.PST=1SG thing any bad to person any
I have never done anything bad to any person.
Urk. I, 40.4
5th dynasty, Sahure

(97) *n-zp* *gmy(=i)* Ø *ir(.w)* *(i)n* *smr* *mr-ꜥw* *nb*
NEG find.PST=1SG do.STV by companion caravan_leader any
I have never found that (it) had been done by any companion or caravan leader.
Urk. I, 125.10
6th dynasty, Pepy II

The auxiliarification of *n-zp sḏm=f* to *n-zp p3=f sḏm* shows a parallel process to the auxiliarification of *n sḏm=f* to *n p3=f sḏm*. However, the linguistic forms *n-zp sḏm=f* and *n-zp p3=f sḏm*, while used within Middle Egyptian, had no successors in Late Egyptian (Neveu 2015:70 n.153), whereas successive forms of *n sḏm=f* and *n p3=f sḏm* may be found in Late Egyptian.

An examination of the auxiliarification which resulted in the linguistic form *n p3=f sḏm* using the framework of the verb-to-TAM chain (Heine 1993:53-65) shows the extent to which it occurred. Of the four individual linguistic shift chains, the auxiliary *p3* had completed one, the desemanticisation chain. *p3* can be categorised in the third and final stage of the desemanticisation chain since it had no lexical meaning, but did have a grammatical function expressing past tense, and the subject was not required to be a willful or human referent (Heine 1993:54), as in Ex.92 and Ex.98.

(98) *n* *p3* *ḥr* *n* *rmṯw* *ḫpr*
NEG AUX.PST preparation GEN people come_to_pass.INF
The preparation of people has not come to pass.
P. Prisse, 6.9-10 (Gunn 1924:95)
12th dynasty

The auxiliary *p3* had also begun to progress along the decategorialisation chain. It is clear that *p3* lacked several verbal properties, such as being unable to form imperatives, or take a noun phrase complement. However, as there are no attestations of *p3* as the content verb of any construction, there is no evidence as to which verbal properties it contained as a lexeme.

The lack of evidence of *p3* with any complement other than the infinitive indicates that it had reached at least stage three of the decategorialisation chain (Heine 1993:55). However,

pꜣ exhibited some verbal properties in its ability to be conjugated in several different constructions. As shown by Gardiner (1908), in addition to the negative past construction *pꜣ* is attested as a past auxiliary within the main clauses *iw pꜣ.n=f sḏm* (Ex.103) and *iw pꜣ=f sḏm* (Ex.101), the relative clause *pꜣ.n=f sḏm* (Ex.100), and a participial construction *pꜣ* (+ participial ending) *sḏm* (Ex.99, Ex.102 and Ex.104), as well as the previously discussed *n-zp pꜣ=f sḏm* (Ex.96-97), although it is possible that this is not the full extent of the constructions in which *pꜣ* was used. These constructions in which *pꜣ* was used are attested at intermittent intervals from the Old Kingdom to the Ptolemaic period (Gardiner 1908:74), although later examples, especially from the Ptolemaic period, represent Middle Egyptian as understood by later Egyptian language users, rather than the contemporary language. In each construction the content verb appears as an infinitival complement.

(99) *iḫ ḏd=i n=f mdw sḏmyw*
PART say.FUT=1SG DAT=3MSG words judges
sḫrw imyw-ḫꜣt pꜣw sḏm n nṯrw
plans ancestors AUX.PST.PTCP listen.INF DAT gods
Then may I say to him the words of the judges, the plans of the ancestors, who had listened to the gods.
P. Prisse, 5.3 (Gardiner 1908:76)
12th dynasty

(100) *n ḫpr mitt n bꜣkw pꜣ.n nb=sn ḥst st*
NEG happen.PST like DAT servants AUX.PST.REL lord=3PL praise 3PL
The like had never happened to servants who their lord had previously praised.
Beni Hasan I, 25.110-113 (Gardiner 1908:75)
12th dynasty, Senwosret I

(101) *iw pꜣ=n sḏm mitt*
AUX AUX.PST=1PL hear.INF like
We have heard the like.
Sinai, 90.10-11 (Gardiner 1908:79)
12th dynasty, Amenemhat III

(102) *sʿḥʿ(=i) n=k ỉwnn m kꜣt nḥḥ*
erect.PST=1SG DAT=2MSG sanctuary as work eternity
sꜣww swsḫ r pꜣt ḫpr
lengthen.PRS.PTCP.PASS widen.PRS.PTCP.PASS than AUX.PST.PTCP.NOM exist.INF
I erected for you a sanctuary as a work of eternity, which is lengthened and widened more than that which has previously existed.
Urk. IV, 618.12-13 (Gardiner 1908:76)
18th dynasty, Thutmose III

(103) *iw pꜣ.n=f wp r=f r ḏd*
AUX AUX.PST=3MSG open.INF mouth=3MSG to speak.INF
He had opened his mouth to speak.
L*D* III, 256a.4 (Gardiner 1908:75)
22nd dynasty

(104) *bḥdt=k{t}* *st* *wrt* *pꜣwt* *ḏd* *bḥdw* *m* *rn=f*
Edfu=2MSG seat great AUX.PST.PTCP call.INF Behedu as name=3MSG
Your Edfu is the great seat, which was called Behedu as its name.
Edfou, 18.41 (Gardiner 1908:75)
Ptolemy IV

In contrast to the desemanticisation and decategorialisation chains, *pꜣ* had not begun to progress along the cliticisation and erosion chains. In terms of cliticisation, *pꜣ* may be classed as an independent word, particularly due to its ability to be conjugated in various constructions. Furthermore, the expression of negation was able to be marked on both *pꜣ* and its infinitival complement, as shown in Ex.105 by the use of the negative verb *tm* as the complement, a feature possible in stage one of the cliticisation chain (Heine 1993:56).

(105) *n* *pꜣ* *sp=f* *tm* *ỉw*
NEG AUX.PST time=3MSG NEG.INF come.NEG.COMP
His time has never previously not come.
P. Prisse, 14.11-12 (Gardiner 1908:74)
12th dynasty

Within the erosion chain, *pꜣ* also remained within the initial stage, apparently retaining its full phonological form (Heine 1993:56). That *pꜣ* is the full phonological form of the original verbal lexeme can be established, despite the lack of evidence of the lexeme, through the nominalised participle *pꜣyt*[48] or *pꜣwt* (Ex.104) which was more commonly written *pꜣt* (Gardiner 1908:77) (Ex.102). Gardiner stated that the participial form of this verb as *pꜣyt* or *pꜣwt* proves 'that it belongs to the class of the 3ae infirmae' (Gardiner 1908:77), with the verb being *pꜣw* or *pꜣy*, while Allen (2010:413) noted that *pꜣ* in *n pꜣ=f sḏm* appears in the perfective[49], in which verbs of the 3ae infirmae class appear without the final weak consonant (Allen 2010:300). Thus within *n pꜣ=f sḏm*, *pꜣ*, rather than *pꜣw* or *pꜣy*, is the full phonological form of the verb.

The varying levels of progression, or lack thereof, along each of the four linguistic shift chains allow the auxiliary *pꜣ* to be placed within stage D of the overall verb-to-TAM chain, with some qualities of stage E exhibited. *pꜣ* must be classified as having reached stage D since it was only associated with a single type of non-finite verb form as its complement (Heine 1993:61), namely the infinitive, with no surviving evidence of *pꜣ* with any other complement. However, the auxiliary *pꜣ* also exhibits the feature of stage E that it combines the characteristics of verbal lexemes and grammatical markers (Heine 1993:63), since it is used as a grammatical marker of past tense, but may still be identified as being conjugated

[48] See *Amonstempels*, 46.12.
[49] In this thesis referred to as the past *sḏm=f*.

within *n sḏm=f*. Despite this, *pꜣ* is prevented from fitting fully into stage E due to its lack of cliticisation and erosion, which Heine (1993:63) has noted are typically triggered in this stage. Since neither of these chains has been triggered for *pꜣ*, it remains more characteristic of stage D.

	Desemanticisation	Decategorialisation	Cliticisation	Erosion	Verb-to-TAM
pꜣ – negative past auxiliary	3	3	1	1	D/E

Table 7 – Stages reached by pꜣ in each of the four linguistic shift chains and overarching verb-to-TAM chain.

The classifications of *pꜣ* in each chain in this initial stage of auxiliarification shows strong similarities to the categorisations of *ir* in the past construction and *wꜣḥ* in the perfect construction[50]. A further similarity can be seen in the change of word order of the negative past construction from VS in *n sḏm=f* to SV in *n pꜣ=f sḏm*.

Use of *n pꜣ=f sḏm* continued throughout Middle Egyptian (Ex.106-108), alongside the more common *n sḏm=f* (Ex.88-91), showing the layering of these two linguistic forms.

(106) *n* *pꜣ* *ḏꜣyt* *mni* *sp=s*
NEG AUX.PST wrongdoing moor.INF deed=3FSG
Wrongdoing has never moored its deed.
P. Prisse, 6.6 (Gardiner 1957:395)
12th dynasty

(107) *sp* *ḳn* *n* *pꜣ=tw* *sḏm=f* *ḏr* *h<ꜣ>w* *rmṯw* *nṯrw*
deed mighty NEG AUX.PST=PASS hear.INF=3MSG since time humans gods
A mighty deed: it has not been heard since the time of humans and gods.
Amonstempels, 43.14-44.3 (Gardiner 1908:75)
18th dynasty, Thutmose I & III

(108) *n* *pꜣ* *ḫpr* *mit[t* *ḏr* *pꜣt]*
NEG AUX.PST happen.INF like since primeval_time
The like had not happened since the primeval time.
Urk. IV, 837.14 (Gardiner 1908:76)
18th dynasty, Thutmose III, year 24

n pꜣ=f sḏm was more analytic than *n sḏm=f*, particularly because of the greater quantity of elements in *n pꜣ=f sḏm*, caused by the use of *pꜣ* as an auxiliary. Furthermore, the autonomy of the content verb in *n pꜣ=f sḏm* was greater than that in *n sḏm=f*, since the subject of the construction was no longer dependent on it, and it was no longer inflected. However, *n*

[50] See tables 2 and 4 (pg.47 & 56).

sḏm=f remained the most common form of the construction, and thus the analyticity of the past construction was not increased.

While *n pꜣ=f sḏm* remained rare in comparison to *n sḏm=f*, its successor, *bwpw=f sḏm*, became the most common expression of the negative past within early Late Egyptian. *bwpw=f sḏm* was more synthetic than *n pꜣ=f sḏm*, as will be discussed below[51], but it remained more analytic than *n sḏm=f* and its Late Egyptian orthography *bw sḏm=f* due to its higher quantity of elements. Consequently, the replacement of *n sḏm=f* by *bwpw=f sḏm* as the most common linguistic form of the negative past construction was part of the analyticisation process. However, the increase in syntheticity in the development from *n pꜣ=f sḏm* to *bwpw=f sḏm* shows a part of the process of syntheticisation, subsequently showing that within the development of the negative past construction, syntheticisation began before analyticisation was completed.

2.c.ii. Syntheticisation ((*n pꜣ=f sḏm* >) *bwpw=f sḏm* > *bnpw=f sḏm* > ⲙⲡⲉϥⲥⲱⲧⲙ)

Within the corpus used for this thesis, the linguistic form *bwpw=f sḏm* is first attested in writing from the 18th dynasty (Ex.109), albeit in a converted circumstantial form, while the last Late Egyptian attestation of *n pꜣ=f sḏm* dates from the 19th dynasty (Ex.110), showing an overlap in their usage.

(109)

iw	*b[wpw]y*	*šˁt*	*[sp]r*	[....]
CIRC	AUX.NEG.PST	letter	arrive.INF	

....as a letter did not arrive....
P. Mond 2, 8 (Winand 1992:202 n.80)
18th dynasty

(110)

n	*pꜣ=tw*	*mꜣ*	*mitt=f*	*ḏr*	*rk*	*imyw-ḫꜣt*
NEG	AUX.PST=PASS	see.INF	like=3MSG	since	time	ancestors

Its like had not been seen since the time of the ancestors....
K*RI* I, 207.6 (Gardiner 1908:75)
19th dynasty, Seti I

The use of the writing *bwpꜣ=f sḏm* can be seen within Amarna Boundary Stela K (Ex.111), showing a likely intermediate writing between *n pꜣ=f sḏm* and *bwpw=f sḏm*. This would suggest that, of the processes of change discussed below, the orthographic change of the negative marker from *n* to *bw* occurred before the slight phonological reduction of the

[51] See pg.76.

auxiliary *pꜣ*. However, *bwpꜣ=f sḏm* is not well attested, with Ex.111 showing the only two examples within this corpus.

(111) *bwpꜣy sr mtr=i r=s*
AUX.NEG.PST official instruct.INF=1SG about=3FSG
bwpꜣ[y s nb m] tꜣ r-ḏr[=f mtr]=i r=s
AUX.NEG.PST man every in land entire=3MSG instruct.INF=1SG about=3FSG
No official instructed me about it, no man in the entire land instructed me about it....
Amarna Boundary Stela K, XX
18th dynasty, Akhenaten, year 5

The orthographic successor of *n sḏm=f*, *bw sḏm=f*, is attested in non-literary texts until the reign of Ramesses IV in the 20th dynasty (Winand 1992:198), and in literary texts until the end of the 20th dynasty (Winand 1992:199). The data from tables 8 and 9 shows that in early Late Egyptian *bw sḏm=f* is attested more frequently than *bwpw=f sḏm*, continuing the higher frequency of attestations of *n sḏm=f* than *n pꜣ=f sḏm*. However, this changed throughout the course of the New Kingdom, with *bwpw=f sḏm* exhibiting more frequent use than *bw sḏm=f* within the mid to late 19th dynasty in non-literary texts, and by the beginning of the Third Intermediate Period in literary texts (Winand 1992:198-200). Neveu has suggested that the decreasing usage of *bw sḏm=f* in Late Egyptian was due to risk of confusion between the negative past *bw sḏm=f* and the morphologically imilar negative habitual *bw sḏm=f*[52] (Neveu 2015:53). These two *bw sḏm=f* writings appear to be identical with many content verbs, however, as pointed out by Winand, the writings of the irregular verb *ỉi* show two morphologically distinct forms with each *bw sḏm=f* construction (Winand 1992:238). Within the negative past *bw sḏm=f* the writing *ỉy* was used (Ex.112).

(112) *ỉw bw ỉy wʿ ỉm=tn r sḏd*
CIRC NEG come.PST one among=2PL PURP recount.INF
wpwt=f m pꜣ tꜣ n kmt
mission=3MSG in the land GEN Egypt
...as no one among you has come to recount his mission in the land of Egypt.
K*RI* II, 61.13 (Winand 1991:366)
19th dynasty, Ramesses II, year 5

Within the negative habitual *bw sḏm=f* the writing *ỉw* was used (Ex.113).

(113) *bw ỉw=k n=i <r> smy*
NEG come.HBT=2MSG DAT=1SG PURP report.INF
You don't come to me to report.
P. Anastasi I, 27.2 (Winand 1991:370)
19th dynasty

[52] See Ex.242-244 (pg. 129).

Furthermore, the negative habitual *bw sḏm=f* developed from its predecessor[53] *bw sḏm.n=f*, while the negative past *bw sḏm=f* shows the orthographic development of *n sḏm=f*, thus these are not the same linguistic form, despite being morphologically similar.

The combination of the data from tables 8 and 9 in table 10 shows that overall the replacement of *bw sḏm=f* by *bwpw=f sḏm* as the most common linguistic form used to express the negative past occurred within the 19th dynasty in the written language, although this may have occurred earlier within the spoken language. The lack of attestations of *bw sḏm=f* from the end of the New Kingdom shows that *bwpw=f sḏm* was the sole linguistic form used for the negative past in writing by the Third Intermediate Period, although again this may have occurred earlier within the spoken language.

Non-literary	*bw sḏm=f*		*bwpw=f sḏm*	
18th dynasty – Ramesses II	6	55%	5	45%
Merenptah-Saptah	5	33%	10	67%
20th dynasty	5	3%	150	97%
3rd Intermediate Period	-	-	21	100%

Table 8 – Attestations of bw sḏm=f and bwpw=f sḏm in non-literary texts. From Winand 1992:199.

Literary	*bw sḏm=f*		*bwpw=f sḏm*	
18th dynasty – Ramesses II	20	87%	3	13%
Merenptah-Saptah	6	60%	4	40%
20th dynasty	10	91%	1	9%
3rd Intermediate Period	-	-	3	100%

Table 9 – Attestations of bw sḏm=f and bwpw=f sḏm in literary texts. From Winand 1992:200.

Non-literary + Literary	*bw sḏm=f*		*bwpw=f sḏm*	
18th dynasty – Ramesses II	26	76%	8	24%
Merenptah-Saptah	11	44%	14	56%
20th dynasty	15	9%	151	91%
3rd Intermediate Period	-	-	24	100%

Table 10 – Attestations of bw sḏm=f and bwpw=f sḏm in both non-literary and literary texts.

The development of *bwpw=f sḏm* from *n pȝ=f sḏm* shows the orthographic change of *n* to *bw*. Clère (1956) has demonstrated that around the time of the development from *n pȝ=f sḏm* to *bwpw=f sḏm*, the writings of *n* and *b*(*w*) had the same phonological value, showing that the development in the writing of the negative past construction from *n* to *bw* does not reflect any phonological change, only orthographic change. This orthographic change

[53] See pg.128-129.

from *n* to *bw* can also be seen in the development of *n sḏm=f* to *bw sḏm=f*. El-Hamrawi has dated these replacements of *n* by *bw* in written texts to the beginning of the reign of Akhenaten, at which stage the non-literary dialect was frequently used to write non-literary texts (El-Hamrawi 2007:45). Use of *bw* in place of *n* increased in frequency throughout the Amarna period.

bwpw=f sḏm also shows a slight phonological reduction from *pꜣ* to *pw*, indicating some movement along the erosion chain for this auxiliary, since *pw* is no longer in its full phonological form (Heine 1993:56).

(114)

bwpwy[=i]	*ptr[=f]*	*r-šꜣʿ*	*pꜣ*	*hrw*
AUX.NEG.PST=1SG	see.INF=3MSG	until	the	day

I have not seen him until today.
LEM, 75.12 (Groll 1970:12)
19th dynasty, Seti II

Furthermore, the lack of any examples of *bwpw=f sḏm* in which the elements *bw* and *pw* are separated suggests that they had undergone coalescence by this stage, while the change of *pꜣ* to *pw* and the absence of the writing *pꜣ* in this form after the 18th dynasty also correlate with coalescence having occurred. It is unclear precisely when this coalescence would have occurred, with it being possible for the elements *n* and *pꜣ* to have become inseparable at some stage during the use of *n pꜣ=f sḏm*. However, it can be determined that *n* and *pꜣ* were initially inseparable, since *pꜣ* was conjugated within content verb position of *n sḏm=f*, in which the negative marker and content verb could be separated by external elements, as in Ex.91.

Since *bw* and *pw*, marking negation and past tense respectively, may both be classed as non-root morphemes, the coalescence of these elements involved the process of compounding, which occurs when the units involved are of the same morphosyntactic status (Heine & Reh 1984:32). This compounding resulted in *pw* no longer being an independent word, and the form used in the negative past construction no longer being able to be conjugated within other verbal constructions. *pw* may consequently be categorised in stage two of the cliticisation chain (Heine 1993:56).

The loss of the ability to be conjugated also shows the loss of the verbal properties which remained in the earlier auxiliary *pꜣ*. Furthermore, the compounding of *bw* and *pw* merged these elements into a single grammatical marker of negative past, ensuring that *pw* was not a grammatical marker in itself, but was a distinct component of a grammatical marker, with no independent existence outside the grouping of *bwpw*. This shows that *pw* in Late

Egyptian has reached the final stage of the decategorialisation chain, in which 'the verb loses virtually all remaining verbal properties' (Heine 1993:55).

The developments along the cliticisation, decategorialisation and erosion chains allow *pw* to be categorised in stage F of the overarching verb-to-TAM chain, since it had become a clitic, was firmly morphologically and syntactically established as a grammatical item, and its complement was considered the main verb (Heine 1993:64). This shows an intermediate stage not visible in the auxiliarification of the past or perfect constructions.

	Desemanticisation	Decategorialisation	Cliticisation	Erosion	Verb-to-TAM
pꜣ – negative past auxiliary	3	3	1	1	D/E
pw – negative past clitic	3	5	2	2	F

Table 11 – Stages reached by pw in each of the four linguistic shift chains and overarching verb-to-TAM chain.

The compounding of *bw* and *pw*, and the development of *pw* from independent word to clitic, shows an increased level of interdependency, and thus an increase in syntheticity, in *bwpw=f sḏm* from *n pꜣ=f sḏm*. However, as mentioned previously, *bwpw=f sḏm* was more analytic than *n sḏm=f*, which it replaced as the most common linguistic form of the negative past construction. Consequently, *bwpw=f sḏm* was involved in both the final stage of analyticisation and the first stage of syntheticisation.

Within Late Egyptian, several different orthographic variations of the element *bwpw* within *bwpw=f sḏm* were in use. As far as can be established from the written language, each of these were phonologically identical, and thus this variation had no impact on the syntheticity of the construction. The earliest orthographic variations of *bwpw* date from the reign of Ramesses III (Winand 1992:208). During the reigns of Ramesses III and Ramesses IV, the use of the writings *mbwpw* (Ex.115-116) and *mpwy* (Ex.117-118) in place of *bwpw* can be found.

(115) *ḫr-iw* *mbwpwy=st* *ḳrs* *pȝy=st* *it*
although AUX.NEG.PST=3PL bury.INF POSS=3PL father
ḫr *mbwpwy* *nȝy=s* *ḫrdw* *ḳrs*
and AUX.NEG.PST POSS=3FSG children bury.INF
Although they[54] did not bury their father, nor did her children bury (her)....
P. Boulaq 10, 7-8 (Winand 1992:204)
20th dynasty, Ramesses III

(116) *mtw=i* *dit* *ḫpr=Ø* *r-šȝ*ˁ *šmw* *m* *ȝbd* *4* *šmw*
CONJ=1SG let.INF happen.FUT until summer in month 4 summer
iw *mbwpw=i* *dit* *tȝy* *2*
CIRC AUX.NEG.PST=1SG give.INF these 2
....and if I let (it) happen until summer, in month 4 of summer, without having given these 2....
K*RI* VI, 251.3-4 (Winand 1992:204)
20th dynasty, Ramesses V, year 3

(117) *inn* *mpwy=k* *{ḥr}* *sš* *ḥr* *pȝ* *ḏmˁ*
COND AUX.NEG.PST=2MSG write.INF upon the papyrus_roll
im *in.tw=f* *n=i*
cause.IMP bring.FUT.PASS=3MSG DAT=1SG
If you did not write on the papyrus roll, cause that it be brought to me.
K*RI* V, 564.13-14 (Winand 1992:204)
20th dynasty, Ramesses III

(118) *mtw=i* *dit* *ˁḳ* *ˁrḳ* *n* *ȝbd* *3* *šmw*
AUX.CONJ=1SG allow.INF enter.FUT last_day GEN month 3 summer
iw *mpwy=i* *dit* *20* *n* *dbn* *n* *ḥmt* *n* *imn-m-ipt*
CIRC AUX.NEG.PST=1SG give.INF 20 GEN deben GEN copper DAT Amenemipet
....and if I allow the last day of month 3 of summer to enter without me having given 20 deben of copper to Amenemipet....
K*RI* V, 573.12-13 (Winand 1992:204)
20th dynasty, Ramesses III

Within the reigns of Ramesses IX to Ramesses XI (Winand 1992:208), the writing *bpy* is attested.

(119) *bpy=i* *ptr* *ḥḏ*
AUX.NEG.PST=1SG see.INF silver
I did not see the silver.
P. BM EA 10052, 11.6
20th dynasty, Ramesses XI, year 19

(120) *ˁḏȝ* *bpy=i* *ptr=f* *bpy=i* *šm* *irm=f*
false AUX.NEG.PST=1SG see.INF=3MSG AUX.NEG.PST=1SG go.INF with=3MSG
False! I did not see him. I did not go with him.
P. Mayer A, 5.18-19 (Neveu 2015:65)
20th dynasty, Ramesses XI, year 19-20

[54] In this period the 3rd person feminine singular writing *st* was frequently used for the 3rd person plural *sn* (Janssen & Pestman 1968:141). Within the wider context of this passage the translation of this as the 3rd person feminine singular does not make sense.

(121) *bpy=i* *ptr* *p3* *ḫpr* *m-di=f*
AUX.NEG.PST=1SG see.INF the happen.PST.PTCP to=3MSG
I did not see what happened to it.
K*RI* VI, 834.3 (Neveu 2015:116)
20th dynasty, Ramesses XI, year 20

bpy is not attested during the 21st dynasty, but was later used from the 22nd-25th dynasties (Winand 1992:208). This replaced the orthography *bwpw*, which is not attested after the 21st dynasty (Winand 1992:203).

From the 25th dynasty (Winand 1992:205), the orthography *bnpw* can be seen.

(122) *iw* *bnp[w]* *p3* *i-iry* *ii* *r* *th3* *rḫ*
CIRC AUX.NEG.PST the AUX.PST.PTCP come.INF PURP do_wrong.INF be_able.INF
ḫnḫn *[r=s]*
approach.INF to=3FSG
...as the one who came to do wrong was not able to approach her.
Urk. VI, 75.4 (Winand 1992:205)
25th dynasty

(123) *bnpw=f* *nw* *r* *rmṯ* *iw=f* *ʿḥʿ*
AUX.NEG.PST=3MSG look.INF at person CIRC=3MSG stand.INF
He did not look at a person, while he was standing.
P. Vandier, 5.10 (Winand 1992:205)
26th dynasty

Within the 25th dynasty, use of *bnpw* was limited (Winand 1992:205), however by Demotic this had become the sole orthography used in the negative past construction (Johnson 1976:195).

(124) *bnpw=w* *ṯ* *n=f* *ḏmʿ*
AUX.NEG.PST=3PL take.INF DAT=3MSG papyrus_roll
They did not take a papyrus roll to him.
Onchsheshonqy, 4.15 (Johnson 1976:199)
Late Ptolemaic

(125) *bnpw=y* *int=f* *n=k*
AUX.NEG.PST=1SG bring.INF=3MSG DAT=2MSG
I did not bring it to you.
Mythus, 2.20 (Johnson 1976:194)
c.100-199CE

(126) *bnpw=f* *swn* *t3* *pt*
AUX.NEG.PST=3MSG recognise.INF the heaven
He did not recognise heaven.
Mythus, 12.29 (Johnson 1976:199)
c.100-199CE

bnpw=f sḏm exhibited the same level of syntheticity as the earlier *bwpw=f sḏm* and other orthographic variations, with the same quantity of elements and level of interdependency

between them, thus showing that purely orthographic changes have no impact on a construction's level of analyticity or syntheticity.

Within the Coptic language stage, the negative past construction was written ⲙⲡⲉⲣⲥⲱⲧⲙ.

(127)

ⲡⲛⲟⲩⲧⲉ	ⲙⲡⲉ-ⲗⲁⲁⲩ	ⲛⲁⲩ	ⲉⲣⲟ-ⲥ	ⲉⲛⲉϩ
god	AUX.NEG.PST-anyone	see.INF	OBJ-3MSG	ever

God, no one has ever seen him.
John, 1.18 (Layton 2000:259)
c.400-499CE

(128)

ⲉⲧⲃⲉ-ⲡⲁⲓ	ⲙⲡ-ⲓ-ϭⲙϭⲟⲙ	ⲉⲣⲟ-ⲕ
because_of-this	AUX.NEG.PST-1SG-find_strength.INF	against-2MSG

Because of this I could not find strength against you.
AP102
c.300-499CE

As with all verbal prefixes in Coptic (Reintges 2004:34), ⲙⲡⲉ could not carry stress. This shows that ⲡⲉ, the descendant of the earlier auxiliary *p3/pw*, had reached stage three of the erosion chain, in which the auxiliarified element has lost any ability to carry stress (Heine 1993:56). Furthermore, the development from *pw* to ⲡⲉ shows a slight phonological reduction from the weak consonant *w* to the vowel ⲉ. The development of the negative marker from *bn* to ⲙ most likely shows orthographic change, which would have written *bn* as ⲛ, as occurred in the negative present construction[55]. This would have subsequently undergone labial assimilation, in which 'the coronal nasal ⲛ /n/ is realised as the bilabial nasal ⲙ /m/ in the context of an adjacent bilabial stop ⲡ /p/ or nasal ⲙ /m/' (Reintges 2004:35). Such assimilation occurred in a variety of verbal and non-verbal contexts, across all Coptic dialects (Till 1928:42).

ⲙⲡⲉⲣⲥⲱⲧⲙ also shows that the negative past construction has undergone further coalescence which, as with the coalescence of the past and perfect constructions visible from their linguistic forms attested in Coptic[56], occurred differently for forms which took pronominal subjects and those which took nominal subjects. For the form of the negative past with a pronominal subject, coalescence occurred between the content verb and the auxiliary-subject group, which were already inseparable due to the historic use of suffix pronouns to refer to pronominal subjects, making the entire construction inseparable.

[55] See pg.114.
[56] See pg.50-53 & 58-59.

(129) ⲙⲡ-ⲫ-ⲣ-ⲗⲗⲁⲩ ⲇⲉ ⲛ-ⲟⲟⲙ
AUX.NEG.PST-3MSG-do.INF-any PART GEN-mighty
But he did not do anything mighty....
Mark, 6.5 (Layton 2000:129)
c.450-499CE

(130) ⲙⲡⲉ-ⲫ-ⲕⲟⲓⲛⲱⲛⲉⲓ ⲇⲉ ⲙⲛ-ⲙ-ⲙⲉⲗⲓⲧⲓⲁⲛⲟⲥ
AUX.NEG.PST-3MSG-communicate.INF PART with-the-Melitians
But he did not communicate with the Melitians....
Antony, 68
822-823CE

Since the auxiliary and pronominal subject may be classed as non-root morphemes, while the content verb contained a root morpheme, this coalescence involved affixation (Heine & Reh 1984:32).

The coalescence which occurred in forms with nominal subjects also involved affixation, since it occurred between the auxiliary, a non-root morpheme, and the subject, which as a noun phrase contained a root morpheme. This process of affixation ensured that the auxiliary and nominal subject were inseparable, while the content verb was not coalesced and remained separable from this group.

(131) ⲥⲁⲟⲩⲗ ⲛⲉ-ⲫ-ⲕⲱⲧⲉ ⲛⲥⲱ-ⲫ ϩⲛ-ϩⲟⲟⲩ ⲛⲓⲙ
Saul IMPF-3MSG-seek.INF OBJ-3MSG during-day every
ⲙⲡⲉ-ⲡ-ⲭⲟⲉⲓⲥ ⲇⲉ ⲧⲁⲗ-ⲫ ϩⲣⲁⲓ ⲉ-ⲧⲟⲟⲧ-ⲫ
AUX.NEG.PST-the-lord PART place.INF-3MSG down into-hand-3MSG
Saul was seeking him every day, but the lord did not place him into his hand.
1 Sam., 23.14
892-893CE

Since it remained possible to establish the word internal morpheme boundaries of ⲙⲡⲉⲫⲥⲱⲧⲙ, appearing between ⲙ, ⲡⲉ, ⲫ and ⲥⲱⲧⲙ[57] in both forms with pronominal and nominal subjects, the coalescence of this construction did not progress as far along the coalescence continuum as to involve fusion (Croft 2003:256).

The process of affixation allowed the negative past auxiliary to complete the cliticisation chain, with ⲡⲉ having become an affix in all cases, and having become a single word unit with its complement (Heine 1993:56) in forms with pronominal subjects. The completion of this chain being visible in the form of the construction attested in Coptic shows a similarity with the past and perfect constructions, each of which shows the completion of the cliticisation chain at the same time. Furthermore, the status of ⲙ and ⲡⲉ as a prefixal marker of negative past, ⲙⲡⲉ, ensures that ⲙⲡⲉⲫⲥⲱⲧⲙ is commensurate with typological

[57] Additional morpheme boundaries could occur within the expression of the subject or content verb.

studies regarding negation crosslinguistically, since in morphological negation constructions the expression of negation is almost exclusively achieved using affixation (Dahl 1979:81).

The completion of the cliticisation chain by ⲡⲉ ensured that it progressed into stage G of the verb-to-TAM chain, (Heine 1993:65), since ⲡⲉ remained a grammatical marker with the complement having become the main verb, as in *bwpw=f sḏm*, but by Coptic had also been reduced to an unstressed monosyllabic affix (Heine 1993:65), marking its progression to stage G.

	Desemanticisation	Decategorialisation	Cliticisation	Erosion	Verb-to-TAM
pꜣ – negative past auxiliary	3	3	1	1	D/E
pw – negative past clitic	3	5	2	2	F
ⲡⲉ – negative past affix	3	5	3	3	G

Table 12 – Stages reached by ⲡⲉ in each of the four linguistic shift chains and overarching verb-to-TAM chain.

Throughout its syntheticisation, the negative past construction consistently maintained the same quantity of elements, and the elements of the linguistic form attested in Coptic, ⲙ, ⲡⲉ, ⲫ and ⲥⲱⲧⲙ, can be equated back to the Old Egyptian *n*, *pꜣ*, *f* and *sḏm* respectively. The increase in syntheticity in the negative past construction was instead caused by intermittent increases in the interdependency of the elements of the construction, produced by the compounding of *bw* and *pw*, and the later affixations of the content verb and the auxiliary-pronominal subject group or nominal subject and the auxiliary.

2.c.iii. Conclusions

Within the development of the past construction, it can be seen that the auxiliarified form which would replace the earliest linguistic form of the construction only did so once it had begun the first stages of syntheticisation, since it was not *n pꜣ=f sḏm* which replaced *n sḏm=f* as the most common form, but *bwpw=f sḏm*. *bwpw=f sḏm* shows a higher level of syntheticity than *n pꜣ=f sḏm*, due to the compounding of the first two elements, but remained more analytic than *n sḏm=f*, since *bwpw=f sḏm* contained a higher quantity of

elements. Thus the development of the negative past construction shows that it is possible for analyticisation and syntheticisation to overlap.

Furthermore, the lack of effect of the various orthographic changes during the development of the negative past construction on the level of analyticity or syntheticity shows that Schwegler's suggestion that 'every innovation, no matter how minute or insignificant it might be in the overall picture of language development, ultimately affects the direction a speech unit takes on the analytic/synthetic axis' (Schwegler 1990:190) is not fully accurate, and that orthographic innovation has no such effect.

The process of auxiliarification within the negative past construction shows strong similarities to the auxiliarification which occurred within the past and perfect constructions, with the initial and final stages of the auxiliarification of *p3* placing it in identical stages of the linguistic shift and verb-to-TAM chains as *ir* and *w3ḥ* in their initial and final stages of auxiliarification[58]. However, once auxiliarification had begun, the development of the negative past construction involved a greater number of linguistic forms than the past and perfect constructions, and it subsequently exhibits an intermediate stage of auxiliarification which is not visible in either the past or perfect construction.

[58] See tables 3, 5 and 12 (pg.50, 58 & 81).

2.d. Present

(Subject) *sḏm=f* > (*iw*) (Subject) *sḏm=f* >> *iw=f ḥr sḏm* > *sw ḥr sḏm* > *iw=f sḏm* > ϥⲥⲱⲧⲙ

The heading 'present' here is used to categorise the present (Subject) *sḏm=f* and its successors via direct development or replacement. Each of these forms expressed present tense, providing either progressive, gnomic, or both meanings, at various stages. For the distinctions in the expression of progressive and gnomic meaning the diachronic variation originally outlined by Vernus (1990:183-191), illustrated in table 13 below, is followed.

As with elsewhere in this thesis, meaning is not prioritised here, and the forms discussed are categorised into the chains of development which exhibit the linguistic cycle through changes of form, rather than those which expressed identical progressive or gnomic meaning throughout the development of the Egyptian language. Consequently 2.f. will separately discuss the development from *ḫr sḏm=f* to ⲉⲩⲁϥⲥⲱⲧⲙ, each form of which was used for gnomic meaning.

2.d.i. Analyticisation ((Subject) *sḏm=f* > (*iw*) (Subject) *sḏm=f* >> *iw=f ḥr sḏm*)

The earliest attested linguistic form in this developmental cycle centred on the expression of the present tense was (Subject) *sḏm=f*[59].

(132)

zšš=s	*wꜣḏ*	*n*	*ḥwt-ḥr*	*m*	*pḥw*	*ḥnꜥ*	*mwt=s*
tear_out.PRS=3FSG	papyrus	DAT	Hathor	in	marshland	with	mother=3FSG

mꜣꜣ=sn	*ḫt*	*nb(t)*	*nfrt*	*ntt*	*m*	*mḥt*
see.PRS=3PL	thing	every	good	REL	in	Delta_marshes

She tears out papyrus for Hathor in the marshland with her mother. They see every good thing which is in the Delta marshes.
Mersyankh, pl.4 & fig.4, boating scene, 1-5
4th dynasty

(133)

šm	*tti*	*pn*	*ḥnꜥ*	*rꜥ*	*iw*	*tti*	*pn*	*ḥnꜥ*	*rꜥ*
go.PRS	Teti	this	with	sun	come.PRS	Teti	this	with	sun

This Teti goes with the sun. This Teti comes with the sun.
PT314d[T] (Allen 2013:136)
6th dynasty, Teti

Within early Old Egyptian, the present *sḏm=f* with no preceding subject expression was used to express gnomic meaning, whilst *sḏm=f* preceded by an expression of the subject was used for progressive meaning (Allen 2013:135-136, following Vernus 1990:183).

[59] Henceforth referred to as the present (Subject) *sḏm=f* to avoid confusion with other *sḏm=f* forms, such as the past *sḏm=f* (see 2.a.i. and 2.a.ii.) and the future *sḏm=f* (see 2.h.i).

(134) *mk* *tti* *iw=f*
PART Teti come.PRS=3MSG
Look, Teti is coming.
PT333a^{T} (Allen 2013:136)
6th dynasty, Teti

Similar to the past *sḏm=f*, the present (Subject) *sḏm=f* exhibited paradigmatic variation in Old Egyptian, using the form (Subject) *sḏm=f* with transitive verbs and intransitive verbs of motion, and the stative with other intransitive verbs (Doret 1986:117). However, within the *Pyramid Texts* both intransitive and transitive verbs are attested in the form (Subject) *sḏm=f* in dramatic passages in religious texts (Allen 1984:190).

(135) *gp* *pt* *iḥii* *sbꜣw* *nmnm* *pḏwt*
cloud.PRS sky darken.PRS stars quake.PRS arcs
sdꜣ *ḳsw* *ꜣkrw* *gr* *r=sn* *gnmw*
tremble.PRS bones earth_gods be_still.PRS PART move.PRS.PTCP.NOM
The sky clouds. The stars darken. The arcs quake. The bones of the earth gods tremble. The things which move are still.
PT393a-394a^{W} (Allen 1984:190)
5th dynasty, Unis

A further linguistic form capable of expressing the present tense, *iw=f ḥr sḏm*, is first attested from the 5th dynasty (Edel 1955/1964:471), although it is not attested within the *Pyramid Texts* (Allen 1982:20). *iw=f ḥr sḏm* was used alongside the present (Subject) *sḏm=f*, showing their layering.

(136) *iw* *ḥr(y)-ḥb(t)* *ḥr* *irt* *ḫt*
AUX lector_priest AUX.PRS do.INF thing
The lector priest is doing things.
Mereruka, pl.109.A.1 (Vernus 1990:174)
6th dynasty

Within the 5th and 6th dynasties, *iw=f ḥr sḏm* became the predominant expression of progressive meaning with transitive verbs (Vernus 1990:183), but at this stage could not express gnomic actions, for which the present *sḏm=f* was used. The diachronic treatment of the expression of gnomic and progressive meaning originally outlined by Vernus (1990:183-191), as shown in table 13, is followed in this thesis.

	Gnomic	Progressive
Early Old Egyptian	*sḏm=f*	Subject *sḏm=f*
Late Old Egyptian	*sḏm=f*	Subject *sḏm=f* *iw=f ḥr sḏm*[60]
First Intermediate Period – Early 12th dynasty	*sḏm=f* Subject *sḏm=f*	Subject *sḏm=f* *iw=f ḥr sḏm*
Late 12th dynasty	Subject *sḏm=f* *iw=f ḥr sḏm*[61]	*iw=f ḥr sḏm*
Late 12th dynasty – New Kingdom	Subject *sḏm=f* *iw=f ḥr sḏm*	*iw=f ḥr sḏm*

Table 13 – Historical development of forms used for gnomic and progressive meaning. Adapted from Allen 2013:138.

Various auxiliaries or particles could appear in the initial position of *iw=f ḥr sḏm*, including the non-enclitic particles *mk* (Ex.137) and *mṯn* (Ex.138), and the auxiliaries *iw* (Ex.136-137) and *wn* (Ex.139).

(137) *mk* *i(w)=s* *ḥr* *iṯṯ* *ḫtw* *nb*
PART AUX=3FSG AUX.PRS take.INF servants all
Look, she is taking all the servants.
L to D, pl.1.7 (Edel 1955/1964:472-473)
6th dynasty

(138) *ir* *ḳ3t* *iḳr* *mṯn* *sr* *ḥr* *ḥzt=ṯn*
do.IMP work excellent PART official AUX.PRS praise.INF=2PL
Do excellent work! Look, the official is praising you.
Meir V, pl.17 (Edel 1955/1964:472)
6th dynasty

(139) *wn(=i)* *ḥr* *ip* *n=f* *i[š]wt=f* *nb(t)*
AUX=1SG AUX.PRS count.INF DAT=3MSG possessions=3MSG all
....I was counting all his possessions for him....
Urk. I, 216.16 (Edel 1955/1964:473)
6th dynasty

The use of an auxiliary or particle was required before both pronominal and nominal subjects in Old Egyptian, and was only absent when *nty* or *ntt* was used as the subject (Edel 1955/1964:471).

(140) *ḏ3ḏ3t* *ntt* *ḥr* *zš* *m* *rḫt* *irp*
assessors REL AUX.PRS record.INF from amount wine
The assessors who record the amount of wine.
*L*D II, 61a (Edel 1955/1964:471)
5th dynasty

The source construction for *iw=f ḥr sḏm* was the non-verbal location pattern, used with the preposition *ḥr*, 'upon'. In this non-verbal construction the subject was followed by a

[60] With transitive verbs.
[61] With transitive verbs.

prepositional phrase, within which the preposition used took a noun phrase as its complement (Ex.141-142). In the verbal *iw=f ḥr sḏm*, this nominal complement was replaced by the content verb in an infinitive form.

(141) *ḥfȝ* *irf* *ḥr* *tȝ*
snake PART upon earth
The snake is upon the earth.
Urk. I, 23.13
4th dynasty

(142) [....] *rn* *nsw[t bity* *mn-kȝw-rˁ]* *ḥr* *bnbnt* *tn*
name dual_king Menkaure upon pyramidion this
....the name of the dual king Menkaure is upon this pyramidion.
Urk. I, 276.2
6th dynasty, Merenre

As can be seen in Ex.141, a nominal subject of this non-verbal construction was not required to be preceded by an auxiliary or particle as it was in the verbal derivative. Pronominal subjects in the location pattern are mostly attested as preceded by a supporting word (Edel 1955/1964:464), although there are exceptions to this. In such cases the independent pronoun was used to express the subject (Edel 1955/1964:465).

As with the present (Subject) *sḏm=f*, *iw=f ḥr sḏm* showed paradigmatic variation. In this case, when the content verb was a verb of motion, *ḥr* could not be used, and the preposition *m* was used in its place (Edel 1955/1964:474).

(143) *sk* *bȝk* *im* *ḥr* *mdt* *m* *dbḥw* *ḫˁḥw*
PART servant there AUX.PRS speak.INF against requirements districts
sk *(i)r(y)-mḏȝt* *m* *iwt* *r* *r-ȝw*
PART letter_carrier AUX.PRS come.INF to Tura
Look, the servant there is speaking against the requirements of the districts. Look, the letter carrier is coming to Tura.
Protest, 4-5 (Edel 1955/1964:474)
6th dynasty

The consistent use of an infinitive as the complement of *ḥr* indicates that it had begun to be auxiliarified in the present construction, since 'the moment a verb [or adposition] is given an infinitive complement, that verb [or adposition] starts down the road of auxiliariness' (Bolinger 1980:297). The auxiliarification of the present construction differs from that of the constructions considered so far, since it was a preposition rather than a verb which was auxiliarified. Consequently, rather than progressing along the verb-to-TAM chain, the auxiliarification of *ḥr* involved progression along the adposition-to-TAM chain, a

development which is not frequently found crosslinguistically (Heine 1993:77), although this occurred in five Egyptian verbal constructions[62].

Three of the linguistic shift chains involved in the verb-to-TAM chain, desemanticisation, cliticisation and erosion, may be applied to the adposition-to-TAM chain with minimal alterations, since the lexical category of the word being auxiliarified is not central to the developments involved in each of them. However, the decategorialisation chain defines the gradual loss of properties inherent to the category of verbs, which are largely different to the properties of adpositions, and thus must be altered to investigate properties which are present in the adposition category. For Egyptian prepositions these involved the abilities to form compound prepositions, to combine with verbs to form prepositional verbs, and to form adjectives through the addition of *i* or *y* (Edel 1955/1964:146 & Gardiner 1957:61). Furthermore, prepositions could be followed by a variety of complements, including noun phrases, infinitives and finite verb forms, which in Old Egyptian included the future or nominal *sḏm=f*, *sḏmw=f* and *sḏm.t=f* (Edel 1955/1964:386-387), although within the location pattern, the source construction of *iw=f ḥr sḏm*, the complement of the preposition was required to be a noun phrase (Gardiner 1957:91). Many prepositions, including *ḥr*, also exhibited orthographic variation between the forms used before nominal and pronominal complements.

As with the verbal lexemes which the previously discussed past, perfect and negative past auxiliaries developed from, the prepositional lexeme *ḥr* can be categorised in stage one of each of the four linguistic shift chains. The lexeme *ḥr* is in the initial stage of the desemanticisation chain, since it expressed a lexical concept (Heine 1993:54), and its noun phrase complement, which the location pattern exclusively used, expressed a concrete location (Heine 1993:54), although it was also possible for *ḥr* to appear before finite and non-finite verb forms.

This form of *ḥr* is also in stage one of the decategorialisation chain, since it contained all of the prepositional properties detailed above. *ḥr* was used to form a number of compound prepositions such as *ḫft-ḥr* 'in front of', *m-ḥr-ib* 'in the middle of' and *ḥr-tp* 'on behalf of' (see Edel 1955/1964:397-405 and Gardiner 1957:133-135 for more), was used in prepositional verbs such as *sbi ḥr* 'watch over' and *ir ḥr* 'steer to', and with the addition of *y* formed the adjective *ḥry*, 'above' or 'who is upon' (Gardiner 1957:62).

[62] Present, negative present, future, negative future, conjunctive.

The prepositional lexeme *ḥr* also exhibited two orthographic variations, one in which the sign D2 is either found alone  or followed by a singular stroke[63] (Z1) , and another in which D2 is followed by D21 as a phonetic complement . In Middle Egyptian the form used before nouns was , or more rarely alone, and that used before suffix pronouns was (Gardiner 1957:127). In Old Egyptian this distinction was less well established, and variations can be seen across genres and dynasties. Edgerton (1947:15) noted that in the *Pyramid Texts*, only 6.4% of cases of *ḥr* before nouns exhibit the phonetic complement, while Edel (1955/1964:392-393) noted that before nouns 'in der Gräbern der 4 Dyn. überwiegt die Schreibung über die Schreibung , in der 5. Dyn. ist die Schreibung doppelt so stark vertreten wie , während in der 6. Dyn. in den Privatgräbern dasselbe Verhältnis herrscht wie in den gleichzeitig niedergeschreiben PT'. Edgerton (1947:15) further established that within the *Pyramid Texts* the phonetic complement was used in 61.3% of cases before bi- or triconsonantal suffix pronouns, and in 99.2% of cases before monoconsonantal suffixes, while Edel (1955/1964:393) noted that while *ḥr* was typically written with its phonetic complement before suffix pronouns, there are exceptions in which *ḥr* has no phonetic complement before suffix pronouns. This data shows a more consistent preference as to which epigraphic form of *ḥr* was used before suffix pronouns than that used before nouns, particularly outside of the *Pyramid Texts*. The developments across the 4th to 6th dynasties show a transition in preference from *ḥr* with a phonetic complement () before nouns to *ḥr* alone (), which was then maintained in Middle Egyptian.

The lexeme *ḥr* may also be categorised in stage one of the cliticisation chain, since it was an independent word (Heine 1993:55), as well as stage one of the erosion chain, since it had its full phonological form (Heine 1993:56). Consequently, the lexeme *ḥr* sits in stage A of the adposition-to-TAM chain.

In contrast, the form of *ḥr* used in the present *iw=f ḥr sḏm* had progressed along two of the linguistic shift chains, showing its divergence from the prepositional lexeme *ḥr*. The auxiliary *ḥr* remained in stage one of both the cliticisation and erosion chains, being an independent word in its full phonological form (Heine 1993:55-56). The use of the infinitive of a verbal lexeme as the complement of *ḥr* allowed it to progress to stage two of the desemanticisation chain, since this verbal complement could 'express a dynamic situation' (Heine 1993:54). However, as each Old Egyptian example of *iw=f ḥr sḏm* in the corpus used for this thesis contains a human subject, *ḥr* may not yet be classed in the final stage of the

[63] Although this typically denotes an ideogram, it can be found after some phonetic signs (Sethe 1908:50).

desemanticisation chain, in which 'the subject is no longer associated with willful/human referents' (Heine 1993:54).

ḥr in *ỉw=f ḥr sḏm* also shows progression along the decategorialisation chain, due to the loss of several of its prepositional properties. The auxiliary *ḥr* was unable to take any complement other than the infinitive, to form compound prepositions, to be used in prepositional verbs, or to form an adjective through the addition of *y*. However, it still showed variation between the orthography of *ḥr* with or without a phonetic complement. It might be expected that the writing without the phonetic complement would be used before the infinitive, since this was predominantly the preferred writing before nouns, which the Egyptian infinitive, as 'ein Verbalnomen' (Edel 1955/1964:351) behaved similarly to. However, the writing  with a phonetic complement was also used in *ỉw=f ḥr sḏm* (Edel 1955/1964:471-472). The use of both orthographic variations within *ỉw=f ḥr sḏm* shows that *ḥr* still retained at least one of its prepositional properties. Furthermore, the later use of alternative predicates[64] in the present construction suggests that further prepositional properties were retained by *ḥr*. Consequently, *ḥr* in *ỉw=f ḥr sḏm* may be classed in stage three of the decategorialisation chain.

The position of *ḥr* in each linguistic shift chain allows it to be placed in stage B of the adposition-to-TAM chain, although it exhibits some characteristics of stage C. The use of an infinitive as the only possible complement of *ḥr* and the required subject identity between *ḥr* and its complement are characteristic of stage C (Heine 1993:61). However, within stage C the subject ayu express non-willful/human referents (Heine 1993:60), but since there is no evidence of this development having occurred in *ỉw=f ḥr sḏm* in Old Egyptian *ḥr* had not fully progressed to stage C.

	De-semanticisation	De-categorialisation	Cliticisation	Erosion	Adposition-to-TAM
ḥr – prepositional lexeme	1	1	1	1	A
ḥr – present auxiliary (Old Egyptian)	2	3	1	1	B/C

Table 14 – Stages reached by each form of ḥr in each of the four linguistic shift chains and overarching adposition-to-TAM chain.

[64] See pg.96-97.

The stages reached by *ḥr* in each chain reveal that the initial stage of auxiliarification in the present construction was less extensive than in any of the other constructions discussed so far, with the exception of the second auxiliarification in the perfect construction[65]. Within the initial stage of auxiliarification in the past and negative past constructions, and the first auxiliarification of the perfect, the desemanticisation chain was completed and stage three of the decategorialisation chain reached, allowing the auxiliary in question to be categorised in stage D/E of the verb-to-TAM chain. In contrast, *iw=f ḥr sḏm* in Old Egyptian shows a stage at which the desemanticisation chain remains uncompleted. However, as in the (first) auxiliarification of all constructions discussed so far, the initial stage of the auxiliarification of the present construction occurred concurrently with a change in word order from VS to SV[66].

Throughout Middle Egyptian, the present (Subject) *sḏm=f* remained the most common form of the present construction. Use of *iw=f ḥr sḏm* also continued, with this linguistic form having semantically broadened to express progressive meaning with all classes of verbs from the 11th dynasty (Vernus 1990:185), and gnomic meaning with transitive verbs from the late 12th dynasty to early 13th dynasty (Vernus 1990:185).

While in Old Egyptian the present (Subject) *sḏm=f* could be found alone in initial main clauses (Ex.132-134), in Middle Egyptian it was required to be preceded by an auxiliary or non-enclitic particle when used in an initial main clause.

(144) *iw* *r* *n* *s* *nḥm=f* *sw*
AUX mouth GEN man save.PRS=3MSG 3MSG
A man's mouth saves him.
MES, 42.5
12th dynasty

(145) *iw* *psḏ=i* *mɜ.[k]w* *rˁ* *nb*
AUX shine.PRS=1SG see.STV day every
I shine, as I am seen every day.
CT VII, 465b[B9C]
12th dynasty, Senwosret I – Amenemhat II

(146) *iw* *is* *[hɜ]b* *ṯw* *ḥm=i* *r* *irt* *nn*
AUX PART send.PRS 2MSG majesty=1SG PURP do.INF this
My majesty is indeed sending you to do this....
Lesestücke, 70.24
12th dynasty, Senwosret III

[65] See pg.62-64.
[66] See 3.a.iii.1. and 3.a.iv.1.

However, in a subordinate clause the present (Subject) *sḏm=f* was typically used alone[67].

(147) *n* *sḏm.n=f* *n=s* *st.n=f*
NEG listen.PRS=3MSG DAT=3FSG urinate.PST.CIRC=3MSG
wš *ib* *n* *wpwty*
be_destroyed.PRS.CONT heart GEN household
....he does not listen to her, after he has urinated, and the heart of the household is destroyed.
Man & Ba, 84-85
12th dynasty, Amenemhat III

While in Old Egyptian *iw=f ḥr sḏm* could only appear without an initial auxiliary or particle when the subject was *nty* or *ntt* (Edel 1955/1964:471), in Middle Egyptian nominal subjects could also be found without an introductory auxiliary or particle (Ex.148). This was particularly common in descriptive or narrative passages (Gardiner 1957:246). However, in initial main clauses nominal subjects are commonly attested following an auxiliary or particle (Ex.152), although exceptions can be seen (Ex.149). Pronominal subjects on the other hand remained in need of a preceding auxiliary or particle in all cases (Gardiner 1957:246) (Ex.150-151). Since forms of *iw=f ḥr sḏm* without an initial auxiliary or particle contained a lower quantity of elements, these were consequently more synthetic. Thus these variations caused paradigmatic variations in syntheticity within the construction.

(148) *ʿwn* *ibw* *s* *nb* *ḥr* *it̲t* *ḫwt* *snwy=fy*
greedy hearts man every AUX.PRS take.INF things companion=3MSG
Hearts are greedy and every man is taking his companion's things.
Man & Ba, 105-6
12th dynasty, Amenemhat III

(149) *ḫ3w* *n* *ʿḥʿw* *ḥr* *si3t* *n=f*
measurer GEN heaps AUX.PRS encroach.INF DAT=3MSG
The measurer of the heaps is encroaching for himself.
Peasant B1, 135-136 (Gardiner 1957:246)
12th dynasty, c. Amenemhat III

(150) *mk* *wi* *ḥr* *spr* *n=k*
PART 1SG AUX.PRS appeal.INF DAT=2SG
Look, I am appealing to you.
Peasant B2, 113-114
12th dynasty, c. Amenemhat III

(151) *iw=i* *ḥr* *irt* *imt-pr* *n* *ḥmt=i*
AUX=1SG AUX.PRS make.INF transfer_document DAT wife=1SG
I am making a transfer document for my wife....
Lesestücke, 90.21
12th dynasty, Amenemhat IV, year 2

[67] There were rare exceptions to this, for example *MES*, 7.13-14.

(152) *mk* *ḥm* *ꜣ=k* *ḥr* *wnm* *it=i*
PART PART donkey=2MSG AUX.PRS eat.INF barley=1SG
Look, your donkey is eating my barley.
Peasant R, 9.5-6
Early 13th dynasty

As in Old Egyptian, the variant *iw=f m sḏm* was used in Middle Egyptian with verbs of motion.

(153) *s* *10* *m* *iwt* *s* *10* *m* *šmt*
man 10 AUX.PRS come.INF man 10 AUX.PRS go.INF
10 men coming, 10 men going....
MES, 36.3 & 5
12th dynasty, Amenemhat III

(154) *mt* *wi* *m* *hꜣt* *r* *kmt*
PART 1SG AUX.PRS go_down.INF to Egypt
Look, I am going down to Egypt....
Peasant R, 1.2-3 (Gardiner 1957:253)
Early 13th dynasty

However, while in Old Egyptian *iw=f m sḏm* was always used when the content verb was a verb of motion, in Middle Egyptian *iw=f ḥr sḏm* could also be used with verbs of motion. Vernus has noted that *iw=f ḥr sdm* with a verb of motion is well established both in 11th dynasty texts, and in *P. Edwin Smith*, the language of which reflects an earlier stage of Egyptian than that of the date of its manuscript (Vernus 1990:184), following the spread of this construction as the expression of progressive meaning from transitive verbs (Vernus 1990:183) to all classes of verbs (Vernus 1990:185).

(155) *wnn* *nkt* *pw* *n* *wšwt* *nt* *ḳs* *ḥr* *iit*
AUX some COP GEN fragments GEN bone AUX.PRS come.INF
r *dmi* *r* *sšm*
PURP be_joined.INF to swab
It is that some fragments of the bone are coming to be joined to the swab....
P. Edwin Smith, 8.15-16 (Vernus 1990:160)
16th-17th dynasty

This development allowed *ḥr* and *m* to be used with the same content verb in the same context, as can be seen in the following parallel examples from the corresponding sections of the B1 and R manuscripts of the *Tale of the Eloquent Peasant*.

(156) *gm.n=f* *sw* *ḥr* *prt* *m* *sbꜣ* *n* *pr=f*
find.PST.CONT=3MSG 3MSG AUX.PRS come_out.INF from door GEN house=3MSG
....and he found him coming out from the door of his house....
Peasant B1, 65-6
12th dynasty, c. Amenemhat III

(157) *gm.n=f* *sw* *m* *prt* *m* *sbꜣ=f* *n* *mꜣꜥ*
find.PST.CONT=3MSG 3MSG AUX.PRS come_out.INF from door=3MSG to riverbank
....and he found him coming out from his door to the riverbank....
Peasant R, 12.6-7
Early 13th dynasty

Within the auxiliarification of *ḥr*, further developments along the desemanticisation and decategorialisation chains are evident in Middle Egyptian. In terms of desemanticisation, the subject of *iw=f ḥr sḏm* was no longer required to have a human referent (Ex.158-159), and thus *ḥr* moved into stage three of this chain (Heine 1993:54).

(158) *pḥty* *ḥr* *ꜣḳ* *n* *wrd* *ib*
strength AUX.PRS perish.INF because be_weary.PRS heart
Strength is perishing because the heart is weary.
P. Prisse, 4.4 (Gardiner 1957:246)
12th dynasty

(159) *in* *iw* *mḫꜣt* *ḥr* *rdit* *ḥr* *gs*
PART AUX balance AUX.PRS incline.INF upon side
Is the balance inclining to one side?
Peasant B1, 179-180 (Gardiner 1957:403)
12th dynasty, c. Amenemhat III

The auxiliary *ḥr* in *iw=f ḥr sḏm* in Middle Egyptian also progressed further along the decategorialisation chain, since it had lost another of the prepositional properties discussed above[68], in which it had been able to use orthographic variations. While in Old Egyptian *ḥr* in the present construction could be written either with or without the phonetic complement, in Middle Egyptian only the writing without the phonetic complement is attested. The prepositional lexeme *ḥr*, however, retained the use of different orthographic variations before nouns and pronouns (Gardiner 1957:127), showing further divergence between these two forms of *ḥr*.

The present auxiliary *ḥr* had not progressed any further along the cliticisation and erosion chains in Middle Egyptian, however its movement along the desemanticisation and decategorialisation chains allow it to be classed in stage D of the overall adposition-to-TAM chain, with it exhibiting some characteristics of stage E.

[68] See pg.87-89.

	De-semanticisation	De-categorialisation	Cliticisation	Erosion	Adposition-to-TAM
ḥr – prepositional lexeme	1	1	1	1	A
ḥr – present auxiliary (Old Egyptian)	2	3	1	1	B/C
ḥr – present auxiliary (Middle Egyptian)	3	4	1	1	D/E

Table 15 – Stages reached by each form of ḥr in each of the four linguistic shift chains and overarching adposition-to-TAM chain.

By Late Egyptian *ỉw=f ḥr sḏm* had replaced the present (*ỉw*) (Subject) *sḏm=f* as the main form of expressing the present. This occurred gradually throughout Middle Egyptian, with *ỉw=f ḥr sḏm* being used to express both progressive and gnomic meaning with all verbs from the 13th dynasty (Vernus 1990:188-190), and with the linguistic form Subject *sḏm=f* expressing the gnomic meaning until the Second Intermediate Period, after which it disappeared (Vernus 1990:190). This ended the ongoing layering between (*ỉw*) (Subject) *sḏm=f* and *ỉw=f ḥr sḏm*. The extensive length of the time over which the layering of (*ỉw*) (Subject) *sḏm=f* and *ỉw=f ḥr sḏm* was ongoing shows that the emergence of an auxiliarified form able to express similar semantics to an existing more synthetic form does not necessitate a quick replacement of the older linguistic form.

The replacement of (*ỉw*) (Subject) *sḏm=f* by *ỉw=f ḥr sḏm* caused an increase in the analyticity of the present construction. *ỉw=f ḥr sḏm* contained a greater quantity of elements than (*ỉw*) (Subject) *sḏm=f*, in particular due to the presence of *ḥr*, but also due to the use of an initial auxiliary or particle in more contexts than (*ỉw*) (Subject) *sḏm=f*. Furthermore, the use of the auxiliary *ḥr* to convey the grammatical information of the construction allowed the content verb to be uninflected, while the change in position of the subject ensured that it was no longer dependent on the content verb. Consequently the autonomy of the content verb, and construction as a whole, increased.

Despite the auxiliarification of the present construction being centred around an auxiliary of prepositional rather than verbal origin, the increases in analyticity that were caused through auxiliarification show similarities to that in the constructions discussed so far, in each of which auxiliarification also caused an increase in analyticity through an increased quantity of elements and an increase in the autonomy of the content verb. However, in the

present construction this was not caused by the direct development of the existing linguistic form, but through its replacement by an unrelated linguistic form.

2.d.ii. Syntheticisation (*iw=f ḥr sḏm* > *sw ḥr sḏm* > *iw=f sḏm* > ϥϲϣⲧⲙ)

The use of pronominal compounds used before an adverbial predicate as a replacement for the combination of an auxiliary or particle and pronominal subject is predominantly first attested from the 17th dynasty (Gardiner 1957:98), although one 13th dynasty example with the predicate *ḥr* + infinitive has been noted[69] (Cahail 2019). These were formed with *tw* followed by the appropriate suffix pronoun for the 1st and 2nd person, while the forms *sw*, *sy/st* and *st* were used for the 3rd person masculine singular, feminine singular and plural respectively. This also shows the loss of the initial auxiliary or particle from the construction.

(160)

sw	*ḥr*	*t3*	[*n*]	*ʿ3mw*	*tw=n*	*ḥr*	*kmt*
3MSG	under	land	GEN	Aamu	1PL	under	Egypt

He is under the land of the Aamu[70], we are under Egypt.
T. Carn., 7 (Gardiner 1957:98)
17th dynasty

As the issue of the development of the pronominal compound paradigm is ancillary to the primary topic of this thesis, it will not be discussed in great detail here, but instead the most important contributions noted. The earliest of these was Erman (1889:119), who suggested that this form developed from the construction of a preposition plus the nominalised relative adjective *ntt*, followed by a pronominal subject typically expressed as a dependent pronoun (Ex.162), although for the 2nd and 3rd person masculine singular the use of suffix pronouns was more common (Gardiner 1957:167) (Ex.161). This was later supported by Gardiner, who suggested that the 3rd person forms developed 'perhaps from **t.sw*, **t.sy*, **t.st* by assimilation of *t* to *s*' (Gardiner 1957:98).

(161)

ḏr-ntt=k	*iy.t(i)*	*m*	*ḥtp*
because=2MSG	come.STV	in	peace

....because you come in peace.
Stela of Abkau, 9 (Gardiner 1957:167)
12th dynasty

[69] This is also the only example of the pronominal compound with the predicate *ḥr* + infinitive attested from before the New Kingdom (Cahail 2019:32).
[70] *ʿ3mw* is believed to refer to the inhabitants of Syria-Palestine (Matić 2020:12).

(162) *ḫft-ntt* *wi* *tn.kw*
in_view_of_the_fact_that 1SG grow_old.STV
....in view of the fact that I am old.
Lesestücke, 90.6 (Gardiner 1957:167)
12th dynasty, Amenemhat III, year 39

However, more recently Stauder (2016) has suggested that these expressions of 1st and 2nd person pronominal subjects had different origins to the 3rd person forms, with which they came together in a common paradigm by the 17th dynasty (Stauder 2016:151). Stauder stated that the preposition + *ntt* source proposed by Erman and supported by Gardiner may be a viable source for the 1st and 2nd person forms, although forms such as *ḥr-ntt wi* and *ḏr-ntt wi* are too long morphologically, and have too specific semantics (Stauder 2016:145) to have been the main source. Stauder narrowed this main source down to *r-ntt*, which functions as a marker of initiality introducing reported speech (Stauder 2016:146). For 3rd person forms, Stauder proposed a chain of development which has its origins in a rare construction where the dependent pronoun was at the start of a dependent proposition and subsequently, via use in parenthetic propositions, the dependent pronoun was used in main propositions (Stauder 2016:146-151).

The pronominal compound was used in the present construction from Late Egyptian.

(163) *ḫr* *tw=tw* *ḥr* *ꜣs=n* *m* *šmt*
PART PASS AUX.PRS hasten.INF=1PL in go.INF
We are being hastened in going.
Paheri, pl.3 (Gardiner 1957:252)
18th dynasty, Thutmose III

(164) *tw=i* *ḥr* *ptr* *nꜣy=k* *tnr* *m-mnt*
1SG AUX.PRS watch.INF POSS=2MSG mighty_deeds daily
I have been watching your mighty deeds daily.
LES, 12.8-9
19th dynasty

The shorter form for the 3rd person, comprised of one morpheme as opposed to the two used in the 1st and 2nd person forms of the pronominal compound, ensured that the use of this subject paradigm resulted in a slight paradigmatic variation in the syntheticity of the linguistic form *sw ḥr sḏm*.

The pronominal compound paradigm was able to be used with a variety of predicates, which have consequently been classed as predicates of the present construction (Neveu 2015:56). These included adverbs and prepositional phrases, creating the Late Egyptian successor of the Middle Egyptian location pattern. This overlap with non-verbal predicates

shows that *ḥr* in the predicate *ḥr* + infinitive still contained some residual prepositional properties.

(165) *tw=i* *r* *gs=tn*
1SG at side=2PL
I am at your side.
K*RI* III, 436.11 (Neveu 2015:58)
19th dynasty, Ramesses II, year 34

(166) *st* *m-di* *t3y=f* *šrit*
3PL with POSS=3FSG daughter
....they are with his daughter.
K*RI* VI, 142.8
20th dynasty, Ramesses IV, year 5

(167) *r-nty* *tw=i* *m* *sšr* *tw=i* *<s>nb.k(w)*
quote 1SG in order 1SG be_healthy.STV
....I am all right. I am healthy.
LRL, 12.5-6 (Černý & Groll 1993:277)
20th dynasty, Ramesses XI, year 20 or later

As a verbal construction, the Late Egyptian present could take as its predicate *ḥr* + infinitive (Ex.169-170), *m* + infinitive (Ex.168), or the stative (Ex.171). As in earlier stages, the *m* + infinitive predicate was 'used exclusively with verbs of motion' (Neveu 2015:63), although verbs of motion could be expressed by other predicates.

(168) *y3* *sw* *m* *ḫd* *r* *p3* *ḥb-sd*
PART 3MSG AUX.PRS travel_north.INF for the festival-Sed
Indeed he is travelling north for the Sed festival.
K*RI* II, 383.15-16 (Neveu 2015:63)
19th dynasty, Ramesses II, year 30

(169) *p3* *wꜥb* *ḥr* *irt* *ḥnw*
the priest AUX.PRS do.INF services
The priest does services....
LEM, 84.17 (Neveu 2015:71)
19th dynasty, Merenptah, year 1

(170) *tw=i* *ḥr* *b3k* *m* *n3* *ḫrw* *n* *msw* *nsw*
1SG AUX.PRS work.INF on the tombs GEN children royal
I am working on the tombs of the royal children....
K*RI* V, 560.3-4 (Neveu 2015:60)
20th dynasty, Ramesses III

(171) *tw=n* *ḥḳr.n*
1PL hungry.STV
....we are hungry....
RAD, 52.15
20th dynasty, Ramesses III, year 29

Winand (1992:413-419) has established that during the course of Late Egyptian, *ḥr* was increasingly omitted from the writing of *sw ḥr sḏm* (tables 16 & 17). Within the 18th dynasty, *ḥr* was almost always present, but in the 22nd dynasty *ḥr* was definitively absent (Winand 1992:413). This orthographic evidence likely indicates that a shortened linguistic form with *ḥr* omitted was in use in the spoken language by this time.

(172) *tw=i* *wꜣḫ=k* *m-bꜣḥ* *ỉmn-ḥtp* *ꜥ.w.s.*
1SG put.INF=2MSG in_the_presence_of Amenhotep l.p.h.
I am putting you in the presence of Amenhotep l.p.h.
LRL, 28.4
20th dynasty, Ramesses XI, after year 25

(173) *yꜣ* *mꜣỉ* *mr* *ꜣḫwt=f*
PART lion love.INF things=3MSG
Indeed a lion loves his own things.
LES, 70.8-9
21st dynasty

	ḥr	Ø
18th dynasty	30	1
19th dynasty	406	113
20th dynasty	108	269
3rd Intermediate Period	8	227

Table 16 – Presence of ḥr in the Late Egyptian sw ḥr sḏm construction per dynasty. From Winand (1992:414).

	ḥr	Ø
18th dynasty	30	1
Seti I	28	4
Ramesses II	175	19
Merenptah	80	46
Amenemessu	12	4
Seti II	76	27
Saptah	13	10
Ramesses III	53	30
Ramesses IV	16	12
Ramesses V-VIII	18	22
Ramesses IX	4	19
Ramesses XI	10	184
21st dynasty	6	86
22nd-24th dynasties	-	72
25th dynasty	2	69

Table 17 – Presence of ḥr in the Late Egyptian sw ḥr sḏm construction per ruler. From Winand (1992:414).

ḥr was also increasingly omitted from the writing of the sequential construction *ỉw=f ḥr sḏm* throughout Late Egyptian (table 18). Having always been written in the 18th dynasty

(Winand 1992:449), like *ḥr* in the present construction, by the end of the 20th dynasty *ḥr* was always omitted from the writing of the sequential construction (Winand 1992:449).

(174) *iw* *dw3* *ḫpr* *iw=f* *h3b*
AUX.SEQ morning come_into_being.INF AUX.SEQ=3MSG send.INF
iw=f *it̲3y=i* *r-ḥry*
AUX.SEQ=3MSG take.INF=1SG up
And morning came, and he sent (word), and he took me up...
LES, 66.1-2
21st dynasty

	ḥr	Ø
18th dynasty	17	1
19th dynasty	492	80
20th dynasty	205	1130
3rd Intermediate Period	-	151

Table 18 – Presence of ḥr in the Late Egyptian sequential iw=f ḥr sḏm construction per dynasty. From Winand (1992:450).

Furthermore, the prepositional lexeme *ḥr* could also be frequently omitted in writing during Late Egyptian[71] (Černý & Groll 1993:110-111). This, alongside the increasing omission of *ḥr* from the sequential across Late Egyptian, shows that this process of loss was not unique to the present construction, but was spread across multiple contexts in which *ḥr* was present in early Late Egyptian, also occurring in the development of the negative present at this stage[72].

The process of loss such as that seen here may be considered as a special instance of erosion (Heine & Reh 1984:27), found at the extreme end of grammaticalisation (Hopper & Traugott 2003:172). This shows that the present auxiliary *ḥr* had, by the end of Late Egyptian, experienced a more extreme form of erosion than that involved in the erosion chain (Heine 1993:56), which *ḥr* in *sw ḥr sḏm* had not yet begun to progress along. Instead of following this erosion chain by the gradual erosion of its phonological substance (Heine 1993:56), *ḥr* was lost completely, with gradualness not being visible in the erosion itself, but in the spread of use of the new writing *sw sḏm* across the course of Late Egyptian. The continued absence of *ḥr* in writing in later language stages indicates that it was lost from the linguistic form of the present construction, not just its orthographic form. Thus in *sw sḏm*, where *ḥr* was omitted, *ḥr* may no longer be categorised within the adposition-to-TAM chain, since it does not exist.

[71] Although this may have been due to different reasons than the omission of the present auxiliary *ḥr* and sequential auxiliary *ḥr*.
[72] See pg.112.

	De-semanticisation	De-categorialisation	Cliticisation	Erosion	Adposition-to-TAM
ḥr – prepositional lexeme	1	1	1	1	A
ḥr – present auxiliary (Old Egyptian)	2	3	1	1	B/C
ḥr – present auxiliary (Middle and Late Egyptian)	3	4	1	1	D/E
sw sḏm	N/A	N/A	N/A	N/A	N/A

Table 19 – Stages reached by each form of ḥr in each of the four linguistic shift chains and overarching adposition-to-TAM chain.

The predicate *m* + infinitive also exhibits a similar loss of *m*[73]. However, the loss of *m* initially occurred only when the following infinitive began with a nasal consonant (Winand 1992:422), and is thus due to phonological reasons (Winand 1992:422), unlike the loss of *ḥr* (Winand 1992:413-419).

By the 22nd dynasty (Winand 1992:422), *m* + infinitive had disappeared entirely from the present construction, showing either the completion of the phonological loss of *m*, or a cessation in use of this form due to verbs of motion being able to be expressed by other predicates (Ex.155-156).

The loss of both *ḥr* and *m* from the infinitival predicates of the present construction ensured that by Demotic it was the infinitive alone which was used as a predicate of the present, alongside the stative, adverbs and prepositional phrases (Johnson 1976:49).

(175) *nʒy* *pʒ* *rmt* *rḫ* *st* *ḥe.ṯ.f*
those the person wise 3PL beside=3MSG
Those of the wise person, they are beside him.
Onchsheshonqy, 18.11 (Johnson 1976:50)
Late Ptolemaic

(176) *tw=s* *pʒ* *tʒ* *i.ir-ḥr=y* *m-ḳdy* *wꜥt* *ꜥftyt*
behold the land before=1SG like a chest
Behold the land is before me like a chest....
Mythus, 9.21-22 (Johnson 1976:50)
c.100-199CE

[73] Similar to *ḥr*, the prepositional lexeme *m* could also frequently be omitted in writing in Late Egyptian (Černý & Groll 1993:110-111).

(177) *nȝ iwtyw irm nȝ ḫmw st šll ḥr [pȝy=t] ʿš-sḥn*
the old and the young 3PL pray.INF on_account_of POSS=2FSG matter
The old and the young, they pray on account of your matter.
Mythus, 10.27 (Johnson 1976:55)
c.100-199CE

(178) *k(y) ḏmʿ ḏd*
another papyrus say.INF
Another papyrus says....
Magical, 14.28 (Johnson 1976:42)
c.200-299CE

Furthermore, beginning in Late Egyptian the stative experienced loss of subject agreement and by Demotic the endings simply served to identify the form as a stative, but no longer agreed with the subject (Johnson 1976:21), indicating that the Demotic stative expressed less grammatical information than the Old, Middle or Late Egyptian forms.

(179) *tw=i ir-rḫ=s*
1SG know.STV=3SG
I know....
Mythus, 15.25
c.100-199CE

The loss of *ḥr* and *m*, which had marked present tense, reduced the markedness of the present construction, since the surviving infinitive was uninflected. The loss of subject agreement of the stative, which reduced the grammatical information it contained, also reduced the markedness of the construction. The loss of markedness in a present tense construction is unsurprising when considered in a wider linguistic context, since more common forms are generally less marked or unmarked (VanPatten & Benati 2010:105). The present was one of the most commonly used Egyptian verbal constructions, and infinitives were by far the most common predicate used with this construction in Demotic (Johnson 1976:50). Bybee has also noted that it may be argued that high frequency concepts are expressed using the most economic expression (2011:143), suggesting a possible motivation for this loss of markedness.

The loss of *ḥr* and *m* also caused an increase in the syntheticity of the present construction when used with these predicates, since the quantity of elements was reduced.

In Demotic, the paradigmatic variation in syntheticity of the construction caused by the variation in the expression of different subjects was somewhat reduced. 3rd person singular subjects were written *iw=f* (Ex.182) and *iw=s* (Johnson 1976:32), showing a closer structure to the pronominal compound with *tw* than the Late Egyptian writings *sw* and *sy/st*. However, the 3rd person plural continued to be written *st* (Ex.180). Definite nouns

continued to appear with no required preceding element (Ex.181), although when a nominal subject was indefinite it was typically preceded by *wn* (Johnson 1976:37). This continued paradigmatic variation again may be due to the common usage of the present construction, since irregularities are retained more in high frequency paradigms than in low frequency paradigms (Bybee 2011:145 with reference to Hooper 1976 & Manczak 1980).

(180) *nʒy=k* *ḥrṯw* *st* *wḫʒ* *n-im=k*
POSS=2MSG children 3PL seek.INF OBJ=2MSG
Your children, they are seeking you.
Setne, 5.33 (Johnson 1976:58)
Ptolemaic

(181) *nʒ* *ḥrṯw* *n* *pʒ* *lh* *mšʿ* *n* *pʒ* *ḥyr*
the children GEN the fool walk.INF in the street
The children of the fool walk in the street.
Onchsheshonqy, 18.11 (Johnson 1976:50)
Late Ptolemaic

(182) *iw=f* *m-sʒ=y*
3MSG after=1SG
....he is after me.
Mythus, 9.5
c.100-199CE

(183) *tw=y* *nw* *r* *pʒ* *wyn*
1SG see.INF OBJ the light
I see the light....
Magical, 16.26 (Johnson 1976:55)
c.200-299CE

Further changes to the expression of pronominal subjects are evident from ϥⲥⲱⲧⲙ, the writing of the present construction attested in Coptic. In the 1st person singular and plural, and the 2nd person plural, the element *tw* underwent fusion with the pronoun which was suffixed to it, which involved the loss of the word-internal morpheme boundary and leading the two morphemes to become one (Croft 2003:256), with this possibly also indicating the occurrence of some erosion. This caused *tw=i*, *tw=n* and *tw=tn* to become ⲧ, ⲧⲛ and ⲧⲉⲧⲛ respectively. In the 2nd person masculine singular *tw* was lost, while in the 2nd person feminine singular the pronoun *t* was lost, resulting in ⲕ and ⲧⲉ respectively. In the 3rd person singular *iw* was lost, resulting in ϥ and ⲥ, and in the 3rd person plural *st* was eroded to ⲥⲉ. The expression of nominal subjects remained the same, save for the orthographic, and likely also phonological, development of *wn* to ⲟⲩⲟⲛ before indefinite nouns (Ex.185).

The present construction in Coptic continued to be unmarked, being associated with the specific time value of the present tense, but with this present tense reference having no morphological correlate (Reintges 2004:248).

(184) ⲧ-ⲁⲛⲁⲭⲱⲣⲉⲓ ⲙⲁⲩⲁⲁ-ⲧ
1SG-withdraw.INF self-1SG
....I am withdrawing....
AP48
c.300-499CE

(185) ⲟⲩⲟⲛ-ⲛⲓⲙ ⲛⲏⲩ ⲉⲣⲁⲧ-ⲩ
INDEF-every come.STV to-3MSG
....everyone is coming to him.
John, 3.26-27 (Layton 2000:243)
c.400-499CE

Similar to other Egyptian verbal constructions, the present exhibits the results of coalescence in Coptic. In forms with pronominal subjects the pronoun is bound to the content verb, with this group being inseparable by any external element (Layton 2000:244). Since the pronoun involved was a non-root morpheme, while any possible predicate contained a root morpheme, this development involved the process of affixation (Heine & Reh 1984:32).

(186) ⲧ-ϫⲱ ⲇⲉ ⲙⲙⲟ-ⲥ ⲛⲏ-ⲧⲛ
1SG-say.INF PART OBJ-3SG DAT-2PL
I am telling you....
Matt., 8.11 (Layton 2000:244)
c.750-799CE

(187) ϥ-ⲯⲟⲟⲡ ⲅⲁⲣ ⲛⲛ-ⲟⲩⲟⲉⲓⲯ-ⲛⲓⲙ ⲙⲛ-ⲡⲉ-ϥ-ⲉⲓⲱⲧ ⲛⲑⲓ-ⲡ-ⲗⲟⲅⲟⲥ
3MSG-exist.STV PART in-time-every with-POSS-3MSG-father SBJ-the-word
For the word always exists with its father.
Antony, 69
822-823CE

In contrast, in forms with nominal subjects the subject and content verb remain separable, with external elements able to appear between these elements of the present construction (Layton 2000:243), showing that no coalescence had taken place between nominal subjects and the content verb. This contrasts with the constructions discussed so far, in which coalescence *did* occur in forms with nominal subjects. However, in these other constructions coalescence occurred between the auxiliary and nominal subject, but since in the present ϥⲥⲱⲧⲙ the auxiliary had been lost, this could not happen.

(188) ⲁⲛⲟⲕ ⲟⲉ ⲧ-ⲟⲛϩ ⲁⲛ ⲡⲉ-ⲭⲥ ⲇⲉ ⲟⲛϩ ⲛϩⲏⲧ-Ø
1SG PART 1SG-live.STV NEG the-Christ PART live.STV in
Therefore I do not live, but Christ lives in (me).
Gal., 2.20 (Layton 2000:244)
c.500-599CE

(189) ⲡ-ⲛⲟⲩⲧⲉ ⲇⲉ ⲥⲟⲟⲩⲛ ⲛ-ⲛⲉ-ⲧⲛ-ϩⲏⲧ
the-God PART know.INF OBJ-the-2PL-heart
But God knows your hearts....
Luke 16.15 (Layton 2000:233)
c.450-499CE

However, the results of the coalescence of the present construction, that a pronominal subject and content verb were inseparable, but nominal subjects were separable from the content verb, is similar to other constructions discussed so far. This shows that despite the fact that the earlier auxiliary of the present construction had prepositional origins, in Coptic it was treated the same as constructions whose affixes had verbal origins. This suggests that some time after the loss of *ḥr* and *m* from the present construction, those using it were unaware of its origins.

ϥⲥⲱⲧⲙ shows an increase in the syntheticity of the present construction. The fusion, erosion and loss in the expression of pronominal subjects caused a reduction in the length of this elements, while the affixation of pronominal subjects to the content verb caused a decrease in separability, and consequently an increase in the interdependency of these elements. However, each of these changes occurred only in forms with pronominal subjects, and as such there was no change in the syntheticity of the form used with nominal subjects.

The level of syntheticity of the latest linguistic form of the present construction is identical to that of the earliest attested form of this cycle of analyticisation and syntheticisation, *sḏm=f*, when used to express gnomic meaning and thus not preceded by a subject expression. Both *sḏm=f* and **ϥⲥⲱⲧⲙ** contained the same quantity of elements, with these being the subject and content verb, and show the same level of separability, with pronominal subjects being affixed to the content verb, and nominal subjects being separable from it. The main differences between these earliest and latest forms of the present construction lay in the change in word order from VS to SV, and the contrast between the inflection of the present *sḏm=f* for present tense and the unmarked expression of present tense in **ϥⲥⲱⲧⲙ**.

2.d.iii. Conclusions

The development of the present construction shows the formation of the linguistic cycle involving the auxiliarification of a preposition, something which is not common crosslinguistically, but occurred in the developments of four other Egyptian verbal

constructions[74]. This development shows multiple similarities to the developments of constructions which involved the auxiliarification of an element with a verbal lexical origin, such as the overall pattern of analyticisation and syntheticisation, the desemanticisation and decategorialisation of the auxiliary, and the same resulting level of separability from affixation, visible in the written form used in Coptic, although this last process occurred several hundred years after the loss of *ḥr* from the construction, and it is highly likely that those using Coptic were unaware of the prepositional origins of the construction.

The present construction shows the greatest level of similarity between the earliest and latest attested forms of any Egyptian verbal construction, with both forms containing the same two elements and having the same level of separability between these. However, these forms exhibit several differences, most notably the contrast between the inflection of (Subject) *sḏm=f* for present tense and the unmarked expression of present tense in **ϥⲥⲱⲧⲙ**, as well as the change in word order from VS to SV. These differences show that while the linguistic cycle in the present construction eventually resulted in a form with the same apparent level of syntheticity as its earliest attested form, these two forms were far from identical.

The development of the present construction also shows the synchronic possibility for paradigmatic variations in analyticity and syntheticity, through its use of auxiliaries and particles before pronominal but not nominal subjects in Middle Egyptian, and the variation in the expression of pronominal subjects and indefinite nominal subjects in later Egyptian.

[74] Negative present, future, negative future, conjunctive.

2.e. Negative Present

n sḏm=f >> *n sḏm.n=f* >> *bn sw ḥr sḏm* (*iwn3*) > *bn iw=f sḏm in* > ⲛⲛⲥⲱⲧⲙ ⲁⲛ

(*nn sw ḥr sḏm* >)

As with the affirmative present, the negative present construction exhibits overlap between the expression of progressive and habitual meanings, particularly in the linguistic form *n sḏm.n=f*. The forms discussed here are those involved in the developments which resulted in the linguistic form ⲛⲛⲥⲱⲧⲙ ⲁⲛ, following the replacement of *n sḏm.n=f*. The direct development of *n sḏm.n=f*, resulting in the form ⲙⲉⲛⲥⲱⲧⲙ, is followed separately in 2.g.

2.e.i. Analyticisation (*n sḏm=f* >> *n sḏm.n=f* >> (*nn sw ḥr sḏm* >) *bn sw ḥr sḏm* (*iwn3*))

Throughout Old Egyptian the negative present could be expressed using the linguistic form *n sḏm=f* (Edel 1955/1964:561 & Satzinger 1968:4), formed from the negative marker *n* followed by the contemporary expression of the affirmative present, which contained the content verb, inflected for present tense, followed by the subject. As a negative present this typically expressed gnomic meaning, but the negation *n sḏm=f* was also used to negate the past and future in early Old Egyptian[75] (Allen 2013:130).

(190) [*i*]*šmw* *im* *n* *iw=sn*
go.PRS.PTCP.NOM there NEG return.PRS=3PL
Those who go there, they do not return.
PT2175b^{N} (Allen 2013:130)
6th dynasty, Pepy II

Despite the attestation of an alternative linguistic form to the present (Subject) *sḏm=f* in the affirmative present construction from the 5th dynasty, *iw=f ḥr sḏm*, within Old Egyptian no morphologically corresponding negation is concurrently attested.

By Middle Egyptian *n sḏm=f* was no longer used to express the negative present, and instead the linguistic form *n sḏm.n=f* was used for this purpose. *n sḏm.n=f* is attested within Old Egyptian, in which it could express gnomic meaning at least by the 5th dynasty[76] (Ex.191), whereas in Middle Egyptian *n sḏm.n=f* could express both gnomic (Ex.192) and progressive (Ex.193) meaning, negating both the present (Subject) *sḏm=f* and *iw=f ḥr sḏm* (Gardiner 1957:255 & 332-333).

[75] See pg.66 & 163.
[76] See also Ex.240 (pg.115).

(191) *n* *rḏi.n(=i)*
NEG allow.PRS=1SG
I do not allow....
Decree of Neferirkare, 1
5th dynasty, Neferirkare

(192) *n* *grt* *sḏm.n* *mr* *šnt* *iṯꜣ*
NEG PART judge.PRS overseer dispute thief
An overseer of disputes cannot judge a thief....
P. UC 32200, 11-12 (Gardiner 1957:231)
12th dynasty

(193) *mk* *wi* *ḥr* *spr* *n=k* *n* *sḏm.n=k* *st*
PART 1SG AUX.PRS appeal_to.INF DAT=2MSG NEG hear.PRS=2MSG 3SG
Look, I am appealing to you, but you are not hearing it.
Peasant B2, 113-4
12th dynasty, c. Amenemhat III

Within *n sḏm.n=f*, the verb ending *.n* was viewed as identifiably distinct from the content verb by language users[77]. Thus the presence of the verb ending *.n* ensured that *n sḏm.n=f* was more analytic than *n sḏm=f*, since it contained a greater quantity of elements. This increase in analyticity through the additional presence of *.n* is similar to that in the past construction in the replacement of *sḏm=f* by *(iw) sḏm.n=f*[78].

During Middle Egyptian, a negative morphological correlate of the affirmative present *iw=f ḥr sḏm* is first attested, written *nn sw ḥr sḏm*, although examples from Middle Egyptian are rare (Gardiner 1957:254). Although this could be used to express the negative present, its scarcity of use ensured that *n sḏm.n=f* also continued to negate both *iw=f ḥr sḏm* and the present (Subject) *sḏm=f*. The usage of both *nn sw ḥr sḏm* and *n sḏm.n=f* continued throughout Middle Egyptian, showing the layering of these linguistic forms.

The linguistic form *nn sw ḥr sḏm* was constructed through the addition of the negative marker *nn* to the affirmative present linguistic form *iw=f ḥr sḏm*. In forms with pronominal subjects, this replaced the required auxiliary or particle, ensuring that the paradigmatic variations in analyticity which existed in *iw=f ḥr sḏm*[79] did not occur in *nn sw ḥr sḏm*.

(194) *nn* *wi* *ḥr* *sḏm* *st*
NEG 1SG AUX.PRS hear.INF 3SG
I am not hearing it.
MES, 43.13
12th dynasty

[77] As in the past *(iw) sḏm.n=f*. See pg.37.
[78] See pg.37.
[79] See pg.91.

The linguistic form *nn sw ḥr sḏm* mirrors the negation of the location pattern, the source construction of *iw=f ḥr sḏm*. The negative marker *nn* was used to negate this non-verbal pattern (Gardiner 1957:97).

(195) *nn wi m-ḥr-ib=sn*
NEG 1SG in_the_middle_of=3PL
I was not in the middle of them.
MES, 45.8-9 (Gardiner 1957:97)
12th dynasty

(196) *nn mwt=k ḥnꜥ=k*
NEG mother=2MSG with=2MSG
Your mother is not with you.
M.und K., verso, 2.3 (Gardiner 1957:97)
18th dynasty

Since *nn sw ḥr sḏm* was formed through the simple addition of a negative marker to the corresponding affirmative form, which contained the auxiliary *ḥr*, the auxiliary *ḥr* in the negative present at this stage may be classed in the same stages in each linguistic shift chain as the contemporary *iw=f ḥr sḏm*[80].

	De-semanticisation	De-categorialisation	Cliticisation	Erosion	Adposition-to-TAM
ḥr – prepositional lexeme	1	1	1	1	A
ḥr – negative present auxiliary	3	4	1	1	D/E

Table 20 – Stages reached by each form of ḥr in each of the four linguistic shift chains and overarching adposition-to-TAM chain.

nn sw ḥr sḏm exhibits a higher level of analyticity than *n sḏm.n=f* . Both of these linguistic forms contained the same quantity of elements, however the elements in *nn sw ḥr sḏm* show a slight increase in size, with the fixed elements *nn* and *ḥr* each being slightly longer than the fixed elements *n* and *.n* from *n sḏm.n=f*. Furthermore, *nn sw ḥr sḏm* shows a greater level of autonomy than *n sḏm.n=f*. The use of dependent pronouns to express pronominal subjects, the use of an auxiliary rather than verb ending, and the form of the content verb as an infinitive with no other element dependent on it rather than as an inflected form with an affixed verb ending and affixed pronominal subject or dependent nominal subject, each increased the autonomy of *nn sw ḥr sḏm* in comparison to *n sḏm.n=f*.

[80] See table 15 (pg.94).

By Late Egyptian *n sḏm.n=f* was no longer used to express the negative present with progressive meaning, although its orthographic successor and successive linguistic forms continued to express the negative habitual[81]. Use of *nn sw ḥr sḏm* had become more common, and by Late Egyptian *bn sw ḥr sḏm*, showing the orthographic change of the negative marker, was the sole linguistic form used to express this construction.

(197) *yȝ* *tw=i* *ḥr* *bȝk* *r-ikr* *sp-sn*
PART 1SG AUX.PRS work.INF excellently PART
bn *tw=i* *ḥr* *nny*
NEG 1SG AUX.PRS be_idle.INF
Indeed I am working very excellently. I am not being idle.
O. OI 16991, verso, 5-6 (Allen 2013:146)
20th dynasty, late Ramesses III

(198) *ḫr* *ptr* *bn* *st* *ḥr* *irt-ḫrt=i* *gr-ink*
PART look NEG 3PL AUX.PRS look_after.INF=1SG in_my_turn
And look, they are not looking after me in my turn.
Naunakhte, 2.5
20th dynasty, Ramesses V, year 3

Several of the developments evident from *bn sw ḥr sḏm* reflect those which occurred concurrently in the affirmative present construction, such as the use of pronominal compounds with 1st and 2nd person subjects[82] (Ex.199) and the gradual loss of *ḥr*[83] causing its inclusion in the writing of the construction to be optional at this stage (Ex.200).

(199) *bn* *tw=k* *ḥr* *ḥȝb* *n=i* *nfr* *m-r-pw* *bin*
NEG 2MSG AUX.PRS send.INF DAT=1SG good or bad
You are not sending (anything) good or bad to me....
LEM, 67.15 (Neveu 2015:74)
19th dynasty, Seti II

(200) *bn* *ptḥ* *dit* *sḏm=tw* *nkt*
NEG Ptah allow.INF hear.FUT=IMPRS anything
r-ḥr *nȝy* *grgwty* *nty* *tw=tw* *ḥr* *sḏm=w*
before these rumours REL PASS AUX.PRS hear.INF=3PL
....Ptah does not allow that anyone hear anything before these rumours which are heard.
LEM, 46.6-7 (Winand 1992:405)
19th dynasty, Seti II, year 1

[81] See 2.g. For certain verbs, such as *rḫ*, the forms discussed in 2.g. were used as the standard negation for both gnomic and progressive meaning.
[82] See pg.95-96.
[83] See pg.98-99.

The negative present was also able to take the same range of predicates as the affirmative form, including *ḥr* + infinitive, *m* + infinitive, the stative[84], adverbs and prepositional phrases.

(201) *bn* *tw=k* *ḥḳr.tw* *<r>* *swr* *mw*
NEG 2MSG be_hungry.STV PURP drink.INF water
tw=k *ỉb.tw* *ỉ* *mt*
2MSG be_thirsty.STV to death
You are not hungry to drink water. You are thirsty to death.
O. DM 10248, 7-8 (Černý & Groll 1993:310)
20th dynasty, Ramesses IV, year 2

(202) *bn* *nꜣy=k* *i[ry]* *ỉm* *r-ḏr=w*
NEG POSS=2MSG companion there all=3PL
Not all of your companions are there.
K*RI* VI, 671.7 (Černý & Groll 1993:307)
20th dynasty, Ramesses IX

(203) *(ỉ)n* *bn* *tw=k* *m* *nʿy* *ỉrm* *nꜣ* *ḥbs*
PART NEG 2MSG AUX.PRS go.INF with the clothes
Are you not going with the clothes?
LRL, 46.10 (Neveu 2015:63)
20th dynasty, Ramesses XI, year 28

The reflection of changes in the affirmative present construction occurred since the negative present was an isomorphic negation (Groll 1970:92) in which the structure of the affirmative form is mirrored in the corresponding negative (Junge 2001:113). However, several changes did occur which were unique to the negative present construction, not occurring in the affirmative form.

One such development was the orthographic change of the negative marker from *nn* to *bn*. As noted in the earlier discussion of the negative past construction[85], Clère (1956) has demonstrated that the writings of *n* and *b* had the same phonological value, thus this development in the negative present construction did not involve any phonological change.

The linguistic form *bn sw ḥr sḏm* was also able to take an additional negative element after the predicate. This element was *ỉwnꜣ*, the earliest known meaning of which was 'indeed' or 'certainly' (Gardiner 1904:130-133). In Late Egyptian *ỉwnꜣ* is attested in the negative present when the predicate was a prepositional phrase or the stative, but there are no Late Egyptian attestations of *ỉwnꜣ* following a *ḥr* + infinitive predicate (Winand 1997:229).

[84] Previously, in Middle Egyptian, the form subject + stative had typically been negated with *n sḏm.n=f* (Gardiner 1957:254-255), like the *ỉw=f ḥr sḏm* form, although *nn* could be used, as in Man & Ba, 125-126.
[85] See pg.74.

(204) *y3 tw=n mt m-r-ꜥ bn tw=n ꜥnḫ.w iwn3*
PART 1PL be_dead.STV anyway NEG 1PL live.STV NEG
Indeed we are dead anyway, we are not alive at all.
K*RI* V, 560.12-13 (Winand 1997:226 n.17)
20th dynasty, Ramesses III, end of reign

(205) *y3 wn(=i) mr.k(w) m-di pḥ=i m-ḫt*
PART AUX=1SG be_ill.STV TEMP reach.FUT=1SG north
ḫr bn tw=i m p3y=i sḫr iwn3
PART NEG 1SG in POSS=1SG condition NEG
Indeed I was ill when I reached the north, and I am not in my (usual) condition.
LRL, 2.8-9 (Černý & Groll 1993:314)
20th dynasty, Ramesses XI, year 24 or later

Within Winand's study of the negation *bn....iwn3*, *iwn3* is only attested in 11 examples of the present construction, containing a prepositional phrase or stative, from the 19th dynasty to the Third Intermediate Period (Winand 1997:232). Other examples of the present construction with a prepositional phrase or stative predicate without *iwn3* can also be seen.

(206) *st iw n=tn bn st dy m-di=n*
3PL come.INF DAT=2PL NEG 3PL here with=1PL
They are coming to you. They are not here with us.
P. Leiden I 365, 7 (Černý & Groll 1993:309)
19th dynasty, Ramesses III

(207) *y3 bn sw m-di=f*
PART NEG 3MSG in_possession_of=3MSG
m wꜥ ipt r p3y=f ḥtpw nṯr m p3 [h]rw
namely one oipe for POSS=3MSG offerings god on the day
Indeed he is not in possession of it, namely one oipe, for his god's offerings today.
LRL, 58.15-16 (Černý & Groll 1993:275)
20th dynasty, Ramesses XI, year 20

The element *iwn3* was separable from the rest of the construction, and could occur after external elements, as in Ex.208.

(208) *iw bn sw mi-ḳd n3 mrw mꜥḥꜥwt n n3 srw*
CIRC NEG 3MSG like the pyramids tombs GEN the officials
nty tw=n šm r ṯ3t im=w m dwn sp-sn iwn3
REL 1PL go.INF PURP steal.INF from=3PL regularly PART NEG
....it not being like the pyramids and tombs of the officials which we go to steal from very regularly.
P. Leopold-Amherst, 2.6-7 (Černý & Groll 1993:313)
20th dynasty, Ramesses IX, year 16

bn sw ḫr sḏm (*iwn3*) shows a slight increase in analyticity from *nn sw ḫr sḏm*, due to the increased quantity of elements from the use of the pronominal compound and additional negative marker *iwn3*, which showed a high level of autonomy through its separability. However, each of these only occurred in certain contexts and thus this development caused

paradigmatic variations in the analyticity of the construction, with that caused by the use of the pronominal compound reflecting the paradigmatic variation in analyticity in the corresponding affirmative form. The orthographic change from *nn* to *bn* which also occurred at this stage of development had no effect on the analyticity of the construction.

2.e.ii. Syntheticisation (*bn sw ḥr sḏm* (*iwn3*) > *bn iw=f sḏm in* > ⲛⲟⲓⲥⲱⲧⲙ ⲁⲛ)

The development of the following linguistic form of the negative present construction, *bn iw=f sḏm in*, reflects the loss of *ḥr* and *m* from infinitival predicates and the changes in the expression of pronominal and indefinite nominal subjects which are visible in the affirmative present in Demotic[86]. The changes which were unique to the negative construction at this stage centre around the element which in Late Egyptian had been written *iwn3*, but by Demotic was written *in*. It is possible that *iwn3* was a group writing for *in*, and thus the development from *iwn3* to in simply shows orthographic change. However, it is also probable that this indicates that some erosion occurred in the development of *iwn3*, although from the written evidence it is not clear when this may have occurred.

(209) *m-s3-ḫpr* *bn* *[tw]=y* *šp-swn* *r-r=f* *in*
but NEG 1SG recgonise.INF OBJ-3MSG NEG
But I do not recognise him....
Petubastis, 16.5
c.0-99CE

(210) *bn* *tw=y* *sby* *n-im=k* *in*
NEG 1SG laugh.INF at=2MSG NEG
I am not laughing at you.
Setne, 3.11 (Johnson 1976:81)
Ptolemaic

(211) *bne* *st* *m* *sš* *n* *ir* *mlḫ* *irm=f* *in*
NEG 3SG in order to do.INF battle with=3MSG NEG
....it was not well to fight with him.
Raphia Decree, M25 (Simpson 1996:138)
217 BCE

Orthographic variations of *in* are attested in Demotic, particularly in *Mythus*, which shows the writing *3n* (Johnson 1976:81).

(212) *bn* *iw=f* *sše* *3n* *n* *p3* *nty* *ir* *wpt* *nbt*
NEG 3MSG be_despised.INF NEG APP the REL do.INF work any
He is not despised, the one who does any work....
Mythus, 5.28 (Johnson 1976:81)
c.100-199CE

[86] See pg.98-102.

The element *in* can also be seen to be undergoing the process of obligatorification, in which its use became increasingly compulsory (Heine & Kuteva 2007:34) and transparadigmatic variability reduced (Lehmann 1995:139). While in Late Egyptian *iwn3* was used optionally with non-verbal and stative predicates, in Demotic most examples of the negative present construction, with all predicates, feature *in* (Johnson 1976:84), and use of *in* was far more common than its omission (Johnson 1976:84). It did remain possible for the negative present to be expressed without *in*, showing that its obligatorification was not yet complete, although the most common form of the negative present was that in which *in* was written, and omissions of *in* such as in Ex.213 could be attributed to scribal error. The ongoing obligatorification of *in* shows a stage of the Jespersen cycle, which will be discussed further in 2.e.iii.

(213)

bn	*n3*	*ḥḥrdw*	*nty*	*tḥn*	*n*	*mfky*	*m3ʿ*	*mḥy*	
NEG	the	*ḥḥrdw*	REL	shine	as	turquoise	true	be_similar.INF	
r	*wʿ*	*wrs*	*n*	*it*	*n*	*p3y=f*	*gy*	*n*	*rdṯ*
to	a	plant	GEN	barley	in	POSS=3MSG	form	GEN	grow.INF
n	*n3y=t*	*kʿ3w*	*wt*						
in	POSS=2SG	high_grounds	green						

The *ḥḥrdw* which shine as true turquoise are not similar to a plant of barley in its form of growing in your green high grounds.
Mythus, 6.25-27 (Johnson 1976:83)
c.100-199CE

The Demotic element *in* was as separable from the rest of the construction as the Late Egyptian *iwn3*, as can be seen in Ex.209-211. However, Johnson (1976:81) remarked that 'if a sentence had several adverbials forming the predicate, especially if they were long ones, the *in* was often placed after the first adverbial, which avoided both confusion and the risk of forgetting the *in*', comparing Ex.214 and Ex.215 below.

(214)

bn	*mtw=tn*	*nw*	*r-ḥr=y*	*r-iw=y*	*in-iw.k*	*r-ḫn*	*r-ḥr=tn*	*3n*
NEG	2PL	see.INF	OBJ=1SG	CIRC=1SG	come.STV	inside	before=2PL	NEG

Do you not see me as I am coming inside before you?
Mythus, 16.21-22 (Johnson 1976:81-83)
c.100-199CE

(215)

bn	*n3*	*tww*	*ḫr*	*n3y=w*	*ḫprw*	*3n*					
NEG	the	mountains	under	POSS=3PL	wonders	NEG					
n	*p3*	*m3ʿ*	*n*	*p3*	*g3w*	*nty iw*	*bn*	*p3*	*nty*	*n3-sše=f*	
in	the	justification	GEN	the	food	REL	NEG	the	REL	be_nasty=3MSG	
r-r=f	*n*	*kmy*	*n*	*p3y=t*	*tš*						
than=3MSG	in	Egypt	in	POSS=2FSG	nome						

The mountains do not have their wonders in the justification of the food, which there is nothing more nasty than in Egypt and in your nome.
Mythus, 6.19-20 (Johnson 1976:83)
c.100-199CE

The form *bn iw=f sḏm in* shows an increase in syntheticity from its predecessor *bn sw ḥr sḏm* (*iwn3*) caused through the loss of *ḥr* and *m*, as occurred in the affirmative construction.

However, the ongoing obligatorification of *in* caused some loss of paradigmatic variation in syntheticity, with the majority of examples now containing this element. The obligatorification of *in* caused an increase in analyticity in the forms in which it had previously not been used, although in forms with infinitival predicates this was cancelled out by the loss of *ḥr* and *m*. This shows that increases in analyticity and syntheticity could occur concurrently, affecting different parts of the construction.

The linguistic form of the negative present attested in Coptic, ⲛⲉⲥⲱⲧⲙ ⲁⲛ, shows orthographic changes of both negative markers. The first of these, which in Demotic was written *bn*, was written ⲛ in Coptic.

(216) ⲛ–ϯ–ⲥⲟⲟⲩⲛ ⲁⲛ
NEG-1SG-know.INF NEG
....I do not know....
Antony, 65
822-823CE

When it appeared before an ⲙ or ⲡ, the negative marker ⲛ was written ⲙ, due to the labial assimilation, which was regularly visible in writing across Coptic in both grammatical and lexical contexts[87].

(217) ⲙ–ⲡ–ϫⲟⲉⲓⲥ ⲟⲩⲱ*ⲯ* ⲁⲛ ⲉ–ⲧⲣⲉ–ⲫ–ⲗⲟ
NEG-the-lord want.INF NEG for-AUX.CAUS_INF-3MSG-depart.INF
ⲙ–ⲡⲉⲓ–ⲙⲁ *ⲯ*ⲁ–ⲑⲁⲏ
from-this-place until-the_end
The lord does not want for it to depart from this place until the end....
Eud., 76.18 (Reintges 2004:344)
c.640-650CE

The final negative marker, which in Demotic was primarily written *in*, was written ⲁⲛ in Coptic. It is unclear what degree of phonological change occurred in this development.

Furthermore, by Coptic the obligatorification of ⲁⲛ can be seen to have been completed, as this element had become an indispensable negative marker (Layton 2000:243). In contrast, the negative marker ⲛ can be seen to have undergone the opposite process, becoming an optional part of the construction which may freely be omitted. This shows the continued progression of this negation along the Jespersen cycle[88].

[87] Such as the negative past construction. See pg.79.
[88] See 2.e.iii.

(218) ⲛⲧⲉⲣⲉ-ⲡ-ⲙⲏⲏⲩⲉ ⲟⲉ ⲛⲁⲩ ϫⲉ-ⲓⲥ ⲙⲙⲁⲩ ⲁⲛ
AUX.TEMP-the-crowd PART see.INF that-Jesus there NEG
Then when the crowd saw that Jesus was not there....
John, 6:24 (Layton 2000:243)
c.400-499CE

(219) ⲫ-ⲥⲩⲧϫⲱⲣⲉⲓ ⲁⲛ ⲛ-ⲛ-ⲕⲉ-ⲙⲟⲛⲁϫⲟⲥ
3MSG-allow.INF NEG DAT-the-other-monk
....he did not allow the other monks....
Pachomius, 138.16-17 (Reintges 2004:345)
c.800-899CE

As in earlier stages, the element ⲁⲛ remained separable from the rest of the construction, appearing after external elements such as dative clitics, pronominal objects, and enclitic function words and particles (Reintges 2004:346-347).

(220) ⲛ-ⲥⲉ-ϩⲉ ⲅⲁⲣ ⲁⲛ ⲉ-ⲗⲁⲁⲩ ⲛ-ⲧⲉⲓ-ⲙⲓⲛⲉ
NEG-3PL-find.INF PART NEG OBJ-any GEN-this-sort
For anything of this sort is not found....
Antony, 7
822-823CE

Ex.220 also demonstrates the inseparability of the remainder of the construction in forms with pronominal subjects. The affixation of the pronominal subject to the verb reflects that which occurred within the affirmative construction at this stage[89], while the inseparability of the negative marker ⲛ from the subject-verb group shows the additional affixation of this element. In forms with nominal subjects, the negative marker ⲛ was affixed to the subject, but the content verb remained separable, again reflecting a feature of the corresponding affirmative construction[90].

(221) ⲙ-ⲡⲉ-ⲕ-ϩⲏⲧ ⲅⲁⲣ ⲥⲟⲩⲧⲱⲛ ⲁⲛ
NEG-POSS-2MSG-heart PART be_right.STV NEG
For your heart is not right....
Acts, 8.21 (Layton 2000:243)
c.525-575CE

The development from *bn iw=f sḏm in* to ⲛⲫⲥⲱⲧⲙ ⲁⲛ caused an increase in the syntheticity of the negative present construction, since the affixation which occurred caused an increase in the interdependency of its elements. However, the Coptic form of the negative present construction is less synthetic than the majority of contemporary forms of other constructions[91], even those with the same quantity of elements, due to the

[89] See pg.102.
[90] See pg.102-103.
[91] Excluding the negative future ⲛⲫⲛⲁⲥⲱⲧⲙ ⲁⲛ, which also used ⲁⲛ, but contained a greater quantity of elements than the negative present ⲛⲫⲥⲱⲧⲙ ⲁⲛ.

separability of the negative marker ⲁⲛ. This autonomy of ⲁⲛ is unique in that it is the only element of any Coptic verbal construction with a pronominal subject which may be separated from the rest of the construction. The ongoing separability of ⲁⲛ also shows that it was unaffected by the syntheticisation which affected the rest of the construction, retaining its increased analyticity from earlier stages[92].

2.e.iii. Conclusions

Since its auxiliarification resulted in a linguistic form which was an isomorphic negation to the affirmative present construction, many aspects of the analyticisation and syntheticisation of the negative present construction reflect that of the affirmative present. However, the development of the negative present also shows the effects of additional processes on its levels of analyticity and syntheticity, including obligatorification. Obligatorification is not frequently attested across the developments of Egyptian verbal constructions, supporting Heine & Kuteva's assertion that it is 'not a *sine qua non* for grammaticalization to take place' (Heine & Kuteva 2007:34). The obligatorification of *ỉwn3* within the development of the negative present construction shows that this process caused a gradual increase in analyticity, beginning with the forms in which the additional element was initially able to be used, causing paradigmatic variations in syntheticity. This then spread to other forms, until it was an obligatory part of the construction, at which point the analyticity of each form of the paradigm of the construction had been increased, and the element involved no longer caused any paradigmatic variation.

This obligatorification within the development of the negative present construction also formed part of the Jespersen cycle of negation which is evident in the development of this construction. The Jespersen cycle, which is well attested crosslinguistically, shows a pattern in which

> 'the original negative adverb is first weakened, then found insufficient and therefore strengthened, generally through some additional word, and this in its turn may be felt as the negative proper and may then in course of time be subject to the same development as the original word' (Jespersen 1917:4).

This can be seen in the negative present construction, through the addition and gradual obligatorification of *ỉwn3* strengthening the negative marker *bn*, and the following weakening of ⲛ indicating that ⲁⲛ was considered to be the 'negative proper'.

[92] See pg.111 & 114.

The processes involved in the Jespersen cycle contributed to the analyticisation and syntheticisation of the negative present, with the addition and obligatorification of *iwn3* causing an increase in analyticity, and the later weakening of ꜥ causing an increase in syntheticity. This was not the only cause of the linguistic cycle in the negative present, however the majority of other processes which affected the analyticisation or syntheticisation of this construction mirrored processes which occurred in the affirmative present. Thus the processes involved in the formation of the Jespersen cycle were also the primary causes of the linguistic cycle which were unique to the negative present construction, and not caused by its status as an isomorphic negation. The only exception to this was the lengthening of the negative marker element of this construction from *n* to *nn*, which was caused during the auxiliarification of this construction due to the use of *nn* to negate the location pattern, the source construction for the auxiliarified present form. This development did not reflect any development in the affirmative present construction, nor did it form part of the Jespersen cycle.

2.f. Habitual

ḫr sḏm=f > *ḫr ir=f sḏm* > **ϣⲁⲣⲉϥⲥⲱⲧⲙ** > **ϣⲁϥⲥⲱⲧⲙ**

As mentioned in 2.d., in early Egyptian there was an overlap in the expression of the present tense between progressive and gnomic meaning, with the same linguistic forms being used to express both. Each form in the chain of development discussed under the label 'habitual' here was used to express gnomic meaning, but not progressive meaning. However, several were used at times when one or more forms discussed under the heading of 'present' could also be used to express gnomic meaning.

2.f.i. Analyticisation (*ḫr sḏm=f* > *ḫr ir=f sḏm*)

In previous studies relating to the habitual construction and in grammars of individual language stages in which this construction is discussed, the linguistic forms *sḏm.ḫr=f*, *ḫr=f sḏm=f* and *ḫr sḏm=f* are frequently considered to be connected in some way. This can be in relation to their semantics, but in many cases this connection is related to the diachronic development of these linguistic forms. For example, Green determined *sḏm.ḫr=f*, *ḫr=f sḏm=f* and *ḫr sḏm=f* to all be the ancestors of the Coptic **ϣⲁϥⲥⲱⲧⲙ** (Green 1987:9), Neveu stated that the Late Egyptian *ḫr sḏm=f* derived from the Middle Egyptian *sḏm.ḫr=f* and *ḫr=f sḏm=f* (Neveu 2015:72), and Vernus asserted that *ḫr*-headed constructions were the successors of *sḏm.ḫr=f* (Vernus 1990:71). However, an in-depth study by Clayton on these three linguistic forms has determined that 'it cannot be convincingly argued that the three main constructions: the *sḏm.ḫr=f*, *ḫr=f sḏm=f* and *ḫr sḏm=f* are variants of, or chronological developments of one another' (Clayton 2018:182). Clayton noted the different usages of each of these, stating that *sḏm.ḫr=f* is never linked with specific individuals, and functions predominantly to express generally applicable instructions, or occasionally to denote results (Clayton 2018:182). Contrastingly, *ḫr=f sḏm=f* is used in case-specific contexts (Clayton 2018:182), typically with a specified actor, and can be linked to a specific time or event. *ḫr sḏm=f*, unlike *sḏm.ḫr=f* and *ḫr=f sḏm=f*, is never used for instructions, but is always an assertion and denotes a state or change of state, unlike *sḏm.ḫr=f* and *ḫr=f sḏm=f*, which each nearly always express actions (Clayton 2018:183). This shows one of the same uses as the later **ϣⲁϥⲥⲱⲧⲙ**, which denoted a state or condition held consistently over an extended time period (Reintges 2004:276), and which was the Coptic successor of *ḫr sḏm=f*, as shown below.

Since it is the successive development of *ḫr sḏm=f* which shows the alternation of analyticisation and syntheticisation, it is the development of this linguistic form which will be analysed here. As *sḏm.ḫr=f* and *ḫr=f sḏm=f* have been proven not to be related to the diachronic development of *ḫr sḏm=f*, they will not be discussed further.

The linguistic form *ḫr sḏm=f* was comprised of the particle *ḫr*, followed by the inflected content verb and the subject. It has been suggested that *ḫr* may instead be a preposition (Westendorf 1962:202). However, several arguments have been made against this. Green (1987:18) indicates that *ḫr* in *ḫr sḏm=f* cannot have been a preposition due to the different Coptic writings of **ϩⲱⲗ-** for the habitual affix and **ϩⲁ-** for the preposition. However, this does not account for the possibility of divergence of these forms of *ḫr* having caused them to follow separate phonological or orthographic developments. A more convincing argument is that of the separability of *ḫr* from the content verb and subject, as in Ex.222-223.

(222) [....] *ḫr* *m-ḫt* *ḥtp* *nṯr* *im* [....]
HBT after be_satisifed.HBT god there
....after the god is satisfied there....
Urk. I, 303.16 (Clayton 2018:174)
8th dynasty, Neferkauhor

(223) *nfr* *is* *ib* *n* *nswt* *iw* *n=f* *mꜣʿt*
happy PART heart GEN king come.PRS.CIRC DAT=3MSG Maat
ḫr *is* [....] *ḫꜣst* *nb(t)*
HBT PART foreign_land every
The heart of the king is happy when Maat comes to him; every foreign land [....].
Ipuwer, 3.12-13 (Clayton 2018:149)
19th dynasty

The earliest attestation of *ḫr sḏm=f* in the corpus used for this thesis dates from the 8th dynasty (Ex.222). However, attestations of *ḫr sḏm=f* are rare throughout Old and Middle Egyptian. It is likely that use of the habitual construction was not common at this stage due to the ability of the contemporary present construction, (*iw*) (Subject) *sḏm=f*, to express similar semantics[93].

(224) *ḫr* *siꜣ=s* *sy* *wnn=s* *m-mitt* *r* *nḥḥ*
HBT perceive.HBT=3FSG 3SG be.FUT=3FSG likewise for eternity
She will perceive it and she will be likewise for eternity.
Lahun Gynaecological Papyrus, 3.28 (Clayton 2018:147)
12th dynasty, Amenemhat III, year 29

ḫr sḏm=f is more frequently attested from late Middle Egyptian and Late Egyptian, and its use continued into Demotic.

[93] See Ex.132-134 (pg.83-84) and table 13 (pg.85).

(225) [*mk* *ir*] *sr* *irr* *mitt* *nꜣ*
PART as_for official act.PRS.PTCP like this
ḫr *rwd=f* *ꜥꜣ* *m* *tꜣ* *st*
HBT prosper.HBT=3MSG here in this place
Look, as for the official who acts like this, he prospers here in this place.
Urk. IV, 1090.7-8 (Johnson 1976:143)
18th dynasty, Thutmose III

(226) *ḫr* *di* *ḥm=f* *šm* *sꜣ=f*
HBT cause.HBT majesty=3MSG set_out.FUT son=3MSG
r *ꜥḥꜥ* *ḫr* *st=f*
PURP stand.INF in place=3MSG
....his majesty would cause that his son will set out to stand in his place.
Urk. IV, 690.5 (Gardiner 1957:369)
18th dynasty, Thutmose III, year 31-32

(227) *ḫr* *mnḫ=tw* *m* *ḥsy* *m* *wꜣst*
HBT moor.HBT=IMPRS as praised_one in Thebes
One moors as a praised one in Thebes....
P. Leiden I 350, 6.9 (Neveu 2015:72)
19th dynasty, Ramesses II, year 52

(228) *ir* *pꜣ* *nty* *iw* *mn* *m-di=f* *ꜥḏd*
as_for the REL CIRC NEG in_the_possession_of=3MSG boy
ḫr *in=f* *n=f* *ky* *nmḥ* *sḫpr=f*
HBT obtain.HBT=3MSG DAT=3MSG another orphan bring_up=3MSG
As for the one who does not have a boy, he should obtain for himself another orphan to bring up.
K*RI* VI, 155.15-156.1 (Neveu 2015:72)
20th dynasty, Ramesses IV

(229) *ḫr* *di* *rmt* *nb* *ḫpr* *nkt*
HBT cause.HBT people all come_into_being.FUT property
rmt *rḫ* *pꜣ* *nty* *rḫ* *ꜥrḏ=f*
person wise the REL know.INF protect.INF=3MSG
All people acquire property, the wise person is the one who knows how to protect it.
Onchsheshonqy, 13.9 (Johnson 1976:137-139)
Late Ptolemaic

(230) *ḫr* *gm=k=f* *iw* *wꜣḥ=f* *ir* *snf*
HBT find.HBT=2MSG=3MSG CIRC AUX.PRF=3MSG make.INF blood
You find it after it had made blood.
Magical, 27.28 (Johnson 1976:137)
c.200-299CE

Within the Demotic language stage, *ḫr sḏm=f* underwent auxiliarification, resulting in the linguistic form *ḫr ir=f sḏm*. This involved the addition of *ir* as an auxiliary, similar to the auxiliarification of the past construction[94]. Initially *ḫr ir=f sḏm* was used with content verbs of 4 or more consonants, or which were foreign words (Johnson 1976:132), however its

[94] See pg.41-48.

usage spread during the Roman period, resulting in its use with any verb (Johnson 1976:132), showing a further similarity to the auxiliarification of *ir* in the past construction[95].

(231) *ḫr* *ir=k* *wꜣḥ* *wˁ* *pyngs* *n* *ˁš-wnwt*
HBT AUX.HBT=2MSG place.INF a tablet GEN calling_hours
ḥr *nꜣ* *tbꜣwt….*
upon the bricks
ḫr *ir=f* *di* *iw* *nꜣy=k* *sywˁ* *n=k*
HBT AUX.HBT=3MSG cause.INF come.FUT POSS=2MSG stars DAT=2MSG
You place a tablet of calling hours upon the bricks....It proclaims your stars to you.
Magical, 4.21-22 (Johnson 1976:140)
c.200-299CE

The process of auxiliarification in the development of the habitual construction was in fact identical to that in the past construction, in that the *sḏm=f* section was auxiliarified to become *ir=f sḏm*. The element *ḫr* had no effect on the auxiliarification process, nor was it affected by it, but instead retained its syntactic position and function. This ensured that the auxiliary *ir* in the habitual form *ḫr ir=f sḏm* had reached the same stages in the various linguistic shift chains (Heine 1993:53-56) and overall verb-to-TAM chain (Heine 1993:59-65) as the past construction, having completed the desemanticisation chain, reached stage three of the decategorialisation chain, but no further since *ir* may be viewed as conjugated within *ḫr sḏm=f*, and remained in stage one in the cliticisation and erosion chains, subsequently being in stage D of the verb-to-TAM chain, albeit exhibiting some properties of stage E[96]. This auxiliarification also resulted in a change in word order from VS to SV[97].

	Desemanticisation	Decategorialisation	Cliticisation	Erosion	Verb-to-TAM
ir – verbal lexeme	1	1	1	1	A
ir – habitual auxiliary	3	3	1	1	D/E

Table 21 – Stages reached by each form of ir in each of the four linguistic shift chains and overarching verb-to-TAM chain.

The auxiliarification of the habitual construction caused an increase in its analyticity. This was due to the addition of *ir* to the construction increasing the quantity of elements, as well as the content verb's change in form to an uninflected infinitive and the fact that the

[95] See pg.42-43.
[96] See pg.43-48 for further detail.
[97] See 3.a.iii.1. and 3.a.iv.1.

subject was no longer dependent on it causing an increase in the autonomy of the content verb. This is identical to the increase in analyticity caused by auxiliarification in the past construction[98].

2.f.ii. Syntheticisation (*ḫr ir=f sḏm* > ⲯⲁⲣⲉⲭⲥⲱⲧⲙ > ⲯⲁⲭⲥⲱⲧⲙ)

In Akhmimic, which featured many of the older characteristics of Coptic (Houghton 1962:6), the habitual was written ⲭⲁⲣⲉⲭⲥⲱⲧⲙ (Ex.232), while in the Lycopolitan and Oxrhynchitic dialects it was regularly written ⲯⲁⲣⲉⲭⲥⲱⲧⲙ (Allen 2021:56) (Ex.233). In Sahidic, Boharic and Fayumic (Allen 2021:56), the affix ⲯⲁⲣⲉ− (Ex.236) (Fayumic ⲯⲁⲗⲉ−) was only used in front of nominal subjects, while the shorter form ⲯⲁ− (Ex.234-235) was used before pronominal subjects[99].

(232) ⲛ−ⲟⲩⲓⲉⲓⲃⲉ ⲇⲉ ⲭⲁⲣ−ⲟⲩ−ⲣ−ⲁⲛⲁⲥⲕⲉⲡⲧⲉⲥⲑⲁⲓ ⲁ−ⲛ−ⲍⲙⲉ
the-priests PART AUX.HBT-3PL-do.INF-search_through.INF OBJ-the-written_document
So the priests search through the written documents.
1 Clem., 25.5 (Akhmimic)
c.300-399CE

(233) ⲉⲙⲁⲛ ⲯⲁⲣ−ⲟⲩ−ⲡⲟⲩ ⲛⲑⲏ−ⲛ−ⲁⲥⲕⲟⲥ
otherwise AUX.HBT-3PL-tear.INF SBJ-the-wineskin
....otherwise the wineskins tear....
Matt., 9.17 (Oxyrhynchitic)
c.300-499CE

(234) ⲭⲁⲩ ⲇⲉ ⲛ ⲥⲟⲙ ⲯⲁ−ⲩ−ⲕⲓⲙ ⲉⲩ−ⲟⲣⲅⲏ
many PART GEN time AUX.HBT-3MSG-stir.INF to_a-anger
But many times he stirred to anger.
AP48
c.300-499CE

(235) ⲣⲱⲙⲉ ⲅⲁⲣ ⲛⲓⲙ ⲉⲧ−ⲛⲁ−ⲃⲱⲕ ⲉ−ⲡⲉ−ⲩ−ⲧⲟⲡⲟⲥ
person PART every REL-AUX.FUT-go.INF to-POSS-3MSG-holy_place
ⲯⲁ−ⲩ−ⲙⲁⲧⲉ ⲙ−ⲡ−ⲧⲁⲗⲟ
AUX.HBT-3PL-attain.INF OBJ-the-healing
For every person who will go to his holy place, they attain healing.
Mena, 26b.9-12 (Reintges 2004:277)
892-893CE

(236) ⲯⲁⲣⲉ−ⲡ−ⲛⲟⲩⲥ ⲛ−ⲧⲉ−ⲯⲩⲭⲏ ⲟⲙⲟⲙ
AUX.HBT-the-intellect GEN-the-soul prevail.INF
The intellect of the soul prevails....
Antony, 7
822-823CE

[98] See pg.48.
[99] Further variation between dialects is seen when the subject was the 2nd person plural (Allen 2021:56).

Since it was the more phonologically archaic dialects which show the form ϩⲁⲣⲉ− or ϣⲁⲣⲉ− before all subjects, it can be determined that ϣⲁⲣⲉⲕⲥⲱⲧⲙ was the immediate successor of *ḫr ir=f sḏm*, and ϣⲁⲕⲥⲱⲧⲙ subsequently developed from this. This is also the most viable path of development linguistically, since it is more likely that the element *ir* underwent erosion and then was lost, than was lost from the construction first and later reinstated in limited contexts in a phonologically reduced form.

The development from *ḫr ir=f sḏm* to ϩⲁⲣⲉⲕⲥⲱⲧⲙ and ϣⲁⲣⲉⲕⲥⲱⲧⲙ shows the phonological change of both *ḫr* and *ir*. Within the development from *ḫr* to ϩⲁ and ϣⲁ, it is probable that *ḫ*, ϩ and ϣ each expressed a broadly similar phonological value, but showed the orthographic differences between the Demotic and Coptic scripts, and slight phonological differences across the Coptic dialects. The grapheme ϩ, was unique to the Akhmimic dialect (Reintges 2004:15), and represented the distinct consonant *ḫ* (Allen 2013:12), showing no phonological change in the development from *ḫ* to ϩ. However, the development in other dialects from *ḫ* to ϣ shows a slight phonological change, with the uvular fricative consonant *ḫ* (Loprieno 1995:33) becoming a palatal fricative consonant ϣ (Loprieno 1995:40).

Since both ϩ and ϣ thus developed from *ḫ* alone, it follows that the *r* from *ḫr* developed into the ⲁ of both ϩⲁ and ϣⲁ, showing a slight phonological reduction.

The development of *ir* to ⲣⲉ shows a subtle phonological reduction, and thus a movement along the erosion chain, although here this occured only to a minor extent. As with all other Coptic verbal prefixes, the habitual prefix could not carry stress (Reintges 2004:34), and thus the Coptic element ⲣⲉ had reached the final stage in the erosion chain (Heine 1993:56). This development also shows a difference from the auxiliarification of *ir* in the past construction, to which the initial stage of the auxiliarification of *ir* in the habitual construction was identical, since within the past construction *ir* developed to be written ⲁ[100] rather than ⲣⲉ. However, the development from *ir* to ⲣⲉ can be seen in a number of other constructions[101].

ϩⲁⲣⲉⲕⲥⲱⲧⲙ and ϣⲁⲣⲉⲕⲥⲱⲧⲙ also show the results of several instances of coalescence within the construction. The first of these is the coalescence of ϩⲁ/ϣⲁ and ⲣⲉ, which in earlier stages of the construction may each be classed as independent words, but within

[100] See pg.48.
[101] Negative habitual, causative imperative, negative causative imperative, causative infinitive, finalis, temporal.

ϩⲁⲣⲉⲕⲥⲱⲧⲙ and ⲱⲁⲣⲉⲕⲥⲱⲧⲙ both act as affixes. Since ϩⲁ/ⲱⲁ and ⲣⲉ have the same morphosyntactic status as non-root morphemes, the coalescence of these two elements involved the process of compounding (Heine & Reh 1984:32). This compounding shows that while the marker *ḥr* was exempted from the process of auxiliarification which caused the analyticisation of the habitual construction, it was not exempt from the processes which caused the construction's syntheticisation.

The second example of coalescence visible from ϩⲁⲣⲉⲕⲥⲱⲧⲙ and ⲱⲁⲣⲉⲕⲥⲱⲧⲙ was that of the content verb to the subject. This only occurred in forms with pronominal subjects and, like in all other Coptic constructions discussed so far, in any forms with nominal subjects the content verb remained separable. However, nominal subjects underwent coalescence with the affixes ⲱⲁ and ⲣⲉ, which as independent words had previously not been conjoined to nominal subjects. Since the affixes were non-root morphemes and the nominal subject contained a root morpheme, this involved the process of affixation (Heine & Reh 1984:32). This coalescence, and the lack of coalescence between nominal subjects and the content verb is evidenced by the placement of external elements between the subject and verb, demonstrating the separability of these two elements.

(237) ⲱⲁⲣⲉ-ⲡ-ϫⲁϫⲉ ⲙⲉⲛ ⲉⲓⲛⲉ
AUX.HBT-the-enemy PART bring.INF
ⲙ-ⲡ-ⲟⲩⲱⲱ ⲛ-ⲑⲩⲇⲟⲛⲏ ⲉϩⲟⲩⲛ ⲉⲣⲟ-ⲩ
OBJ-the-desire GEN-the_pleasure into into-3MSG
The enemy brought desire of pleasure into him.
Antony, 5
822-823CE

In forms with pronominal subjects, the auxiliary and subject were already inseparable, due to the historical use of suffix pronouns for pronominal subjects. In these forms coalescence occurred between the subject and content verb, making these inseparable and ensuring that external elements appeared before or after the whole construction, rather than between the subject and verb as in forms with nominal subjects. This was also the case in ⲱⲁⲩⲥⲱⲧⲙ.

(238) ⲱⲁ-ⲩ-ⲱⲕⲙ ⲇⲉ ⲉ-ⲩ-ϩⲛ-ϩⲉⲛ-ⲁⲩⲡⲉⲓ
AUX.HBT-3MSG-become_gloomy.INF PART CIRC-3MSG-in-some-grief
But it becomes gloomy, being in grief.
Antony, 67
822-823CE

Since the pronominal subject is classed as a non-root morpheme, while any content verb contained a root morpheme, this coalescence involved affixation (Heine & Reh 1984:32).

The development of *ir* from an independent word to an affix shows its development to stage three of the cliticisation chain, in which the auxiliary has become an affix (Heine 1993:56), as occurred in all cases, and in which the auxiliary and its complement have combined to become a single word unit (Heine 1993:56), as occurred in forms with pronominal subjects.

This progression along the cliticisation chain, along with that along the erosion chain, is complemented by further progression of ⲣⲉ to stage five of the decategorialisation chain, through the loss of all its remaining verbal properties (Heine 1993:55), since it could no longer be viewed as being conjugated as the earlier *ir* could[102]. This allowed ⲣⲉ to progress to stage G of the overall verb-to-TAM chain since it had become 'purely a grammatical marker reduced typically to a monosyllabic affix unable to carry distinctive tone or stress' (Heine 1993:65).

The development of the forms ⲍⲁⲣⲉⲕⲥⲱⲧⲙ and ⲯⲁⲣⲉⲕⲥⲱⲧⲙ, and in particular the various instances of coalescence involved, caused an increase in the syntheticity of the habitual construction. This was due to the coalescence of various elements reducing the separability of the construction, and increasing the interdependency of the elements within it. Furthermore, the slight phonological reductions of both *ẖr* and *ir* caused a reduction in the size of these elements, in turn causing a slight increase in syntheticity.

The development of the form ⲯⲁⲕⲥⲱⲧⲙ with pronominal subjects in Sahidic and Boharic shows the loss of the element ⲣⲉ. The loss of ⲣⲉ shows a more extreme form of erosion than that considered in the erosion chain (Heine 1993:56), ensuring it could no longer be categorised within the verb-to-TAM chain.

[102] See pg.121.

	Desemanticisation	Decategorialisation	Cliticisation	Erosion	Verb-to-TAM
ỉr – verbal lexeme	1	1	1	1	A
ỉr – habitual auxiliary	3	3	1	1	D/E
ⲣⲉ – habitual affix	3	5	3	3	G
ⲯⲁⲫⲥⲱⲧⲙ	N/A	N/A	N/A	N/A	N/A

Table 22 – Stages reached by each form of ỉr and ⲣⲉ in each of the four linguistic shift chains and overarching verb-to-TAM chain.

The loss of ⲣⲉ from the habitual construction caused further increases in the syntheticity of the construction, since it consequently contained a lower quantity of elements. This also caused an increase in the paradigmatic variation of syntheticity between forms with pronominal subjects and those with nominal subjects in dialects in which this loss occurred, since forms with nominal subjects retained the element ⲣⲉ, and thus contained more elements than their counterparts with pronominal subjects, and were subsequently less synthetic. This expanded upon the existing variation in syntheticity caused by the differing levels of separability in each form, which derived from the separability of nominal subjects from the verb, and the lack thereof in forms with pronominal subjects.

2.f.iii. Conclusions

Throughout its development, the habitual construction used the element *ḫr*/ⲍⲁ/ⲯⲁ to aid in providing the meaning of the construction, and thus its development shows the effects of the linguistic cycle on a construction which used an additional element to express its semantics, as opposed to constructions which used inflection alone in their earliest attested forms, such as the past and present constructions. Within analyticisation, *ḫr* was unaffected by, and had no effect on, the process of auxiliarification which caused the main increase in analyticity of the construction. This ensured that the initial stage of the auxiliarification of the habitual construction was identical to that of the past construction, to which, with the unaffected *ḫr* removed, it was homogeneous with respect to the pre- and post-auxiliarification forms *sḏm=f* and *ỉr=f sḏm*.

In the latter stages of the development of the habitual construction, the element *ḫr* was affected by the processes of erosion and coalescence, showing that, while *ḫr* was not affected by the processes involved in analyticisation, it *was* affected by those involved in

syntheticisation. Whether this was a widespread phenomenon or unique to the development of the habitual construction can be tested through examining the developments of other constructions which used elements similar to *ḫr* to convey their meaning, as will be done in later sections of this thesis. However, an initial comparison may be made with the negative markers in the negative past and negative present constructions. The negative marker in the negative past was unaffected by analyticisation, but was involved in coalescence during the syntheticisation of the construction, similar to the marker of the habitual construction. In contrast, the negative marker in the negative present was involved in analyticisation, with *n* being replaced by the slightly longer *nn* during auxiliarification. This element was later involved in the coalescence of the construction during its syntheticisation.

2.g. Negative Habitual

n sḏm.n=f > *bw sḏm.n=f* > *bw sḏm=f* > *bw ir=f sḏm* > ⲙⲉⲫⲥⲱⲧⲙ

As noted in 2.e., the Old and middle Egyptian linguistic form *n sḏm.n=f* could express both progressive and gnomic meaning. However, its successive orthographic and linguistic forms were used to express gnomic meaning only, and it is this chain of development which is analysed under the heading 'negative habitual'.

2.g.i. First Syntheticisation (*n sḏm.n=f* > *bw sḏm.n=f* > *bw sḏm=f*)

The earliest attested linguistic form in this chain of development, *n sḏm.n=f*, was comprised of the negative marker *n*, the content verb, the verb ending *.n* and the subject. In the *Pyramid Texts* this linguistic form was used as the gnomic negation of a general fact, ability, or necessity' (Allen 2017:159).

(239)

b(w)t	*wnis*	*pi*	*ḥḳr*	*n*	*wnm.n=f*	*sw*
abomination	Unis	this	hunger	NEG	eat.HBT=3MSG	3MSG
b(w)t	*wnis*	*pi*	*ibt*	*n*	*zwr.n=f*	*s(y)*
abomination	Unis	this	thirst	NEG	drink.HBT=3MSG	3FSG

The abomination of Unis is hunger. He does not eat it. The abomination of Unis is thirst. He does not drink it.
PT131a-b^{W} (Allen 2017:159)
5th Dynasty, Unis

Within Middle Egyptian, *n sḏm.n=f* continued to express the gnomic meaning of the negative habitual, but could also express progressive meaning, as discussed in 2.e.i.[103].

(240)

sḏmw	*n*	*ȝ*	*sḏm.n=k*
hear.PRS.PTCP.NOM	NEG	PART	hear.HBT=2MSG

Hearer, indeed you cannot hear.
Peasant B1, 211
12th dynasty, c. Amenemhat III

Within early Late Egyptian, the negative habitual was expressed with *bw sḏm.n=f*, showing the development of the negative marker from *n* to *bw*. This involved orthographic change, since *n* and *bw* each contained the same phonological value (Clère 1956). Furthermore, the replacement of *n sḏm.n=f* as the most common means of expressing the negative present by *bn sw ḥr sḏm*[104], led to *n/bw sḏm.n=f* no longer expressing progressive meaning. Thus the negative habitual construction in Late Egyptian could not also express the negative present with progressive meaning, as it had in Middle Egyptian.

[103] See pg.106-107.
[104] See pg.109.

bw sḏm.n=f was very rare (Neveu 2015:70), and was used for a limited time, being found only in the 19th dynasty (Winand 1992:237).

(241) *ỉst* *bw* *sḫ3.n=k* *p3* *ḳ{n}i* *<n>* *iḥwty*
PART NEG remember.HBT=2MSG the condition GEN farmer
Do you not remember the condition of the farmer....?
LEM, 83.5-6 (Winand 1992:237)
19th dynasty, Merenptah, year 1

Despite its limited attestations, *bw sḏm.n=f* may show evidence of an intermediate stage between the more common linguistic forms *n sḏm.n=f* and *bw sḏm=f*. However, the earliest example of *bw sḏm=f* in the corpus used for this thesis dates from the reign of Ramesses II (Ex.242), while the earliest example of *bw sḏm.n=f* dates from the reign of Merenptah, the immediate successor of Ramesses II (Ex.241). Thus it is also possible that *bw sḏm.n=f* may represent an orthographic archaism.

(242) *bw* *rḫ=i* *ꜥ=i* *n* *dw3w*
NEG know.HBT=1SG condition=1SG GEN tomorrow
I do not know my condition of tomorrow.
K*RI* II, 911.1-2 (Neveu 2015:67)
19th dynasty, Ramesses II

(243) *bw* *ꜥḥꜥ* *ḏww* *r-ḥ3t=f*
NEG stand.HBT mountains before=3MSG
....the mountains cannot stand before him.
LEM, 29.1-2 (Neveu 2015:70)
19th dynasty, Merenptah, year 3

The linguistic form *bw sḏm=f* shows the loss of the verb ending *.n*. It is possible that this was part of a wider loss of this verb ending from the Egyptian language, since an identical loss also occurred in the development of the past construction, with the development from *(ỉw) sḏm.n=f* to *sḏm=f* in late Middle Egyptian and early Late Egyptian[105].

bw sḏm=f can be seen in the same texts as *bw sḏm.n=f*, showing their layering.

(244) *bw* *šsp.n* *nṯr* *wdnw=f*
NEG receive.HBT god offerings=3MSG
bw *ptr=f* *mw* *nw* *pt*
NEG see.HBT=3MSG water GEN sky
The god does not receive his offerings, and he does not see the rain....
LEM, 41.7-8 (Neveu 2015:70)
19th dynasty, Seti II, year 1

[105] In the past construction the absence of *.n* may have occurred through loss, or through the replacement of *(ỉw) sḏm.n=f* by the rejuvenated linguistic form *sḏm=f*. See pg.39.

The development from *n/bw sḏm.n=f* to *bw sḏm=f* caused an increase in the syntheticity of the negative habitual construction, since the loss of the element *.n* resulted in a linguistic form with a lower quantity of elements.

bw sḏm=f is attested until the reign of Seti II in texts 'au register du néo-égyptien mixte ou partiel' (Winand 1992:238), and until the reign of Ramesses II in texts 'en néo-égyptien complet' (Winand 1992:239), showing that although *bw sḏm=f* was more common than *bw sḏm.n=f*, it too was only used for a short period of time, within the 19th dynasty.

2.g.ii. Analyticisation (*bw sḏm=f* > *bw ir=f sḏm*)

Within Late Egyptian *bw sḏm=f* experienced auxiliarification, resulting in the linguistic form *bw ir=f sḏm*. *bw ir=f sḏm* subsequently became the most commonly attested means of expressing the negative habitual. Regarding the time at which this occurred, Winand (1992:239) noted

> 'Elle remplace *bw sḏm.f* dans les textes rédigés en néo-égyptien complet dès l'époque de Ramsès II. En revanche, en néo-égyptien mixte ou partiel, elle ne concurrence pas la construction non périphrastique avant le règne de Séthi II, et elle ne s'imposera pas avant la 20e dyn.'

(245)

ir	*pḥ=i*	*r*	*ḥḥ*	*im=sn*	
if	reach.FUT=1SG	to	million	out_of=3PL	
bw	*ir*	*rdwy*	*sm[n]*	*ḫr*	*wˁr=sn*
NEG	AUX.HBT	legs	stand_firm.INF	HBT	flee.HBT=3PL

If I reach a million of them, (their) legs do not stand firm, and they flee.
K*RI* II, 65.3 (Winand 1992:239)
19th dynasty, Ramesses II, year 5

(246)

bw	*ir=f*	*stn*	*r*	*prt*	*šmw*
NEG	AUX.HBT=3MSG	distinguish.INF	concerning	winter	summer

He cannot distinguish between winter and summer.
LEM, 85.1–85.2 (Neveu 2015:71)
19th dynasty, Merenptah, year 1

(247)

ḫr	*bw*	*ir=i*	*nn*	*m*	*it3*	*n=f*	*mw*
but	NEG	AUX.HBT=1SG	neglect.INF	PRS	take.INF	DAT=3MSG	water

....but I do not neglect taking water to him.
LRL, 30.8-9 (Neveu 2015:71)
20th dynasty, Ramesses XI, year 28

As with the auxiliarification of the affirmative habitual construction, the auxiliarification of the negative habitual was identical to that of the past construction in its initial stage, with the section *sḏm=f* being auxiliarified to become *ir=f sḏm*. Also similar to the affirmative habitual construction, the element which was external to the *sḏm=f* section of the

construction, in this case *bw*, was entirely unaffected by the process of auxiliarification, retaining its syntactic position at the beginning of the construction. The identical auxiliarification processes ensured that the auxiliary *ỉr* in the negative habitual *bw ỉr=f sḏm* had reached the same stages as *ỉr* in the past *ỉr=f sḏm* within the verb-to-TAM chain (Heine 1993:59-65) and the four linguistic shift chains (Heine 1993:53-56). *ỉr* remained in stage one of the cliticisation and erosion chains, but progressed to stage three of both the decategorialisation and desemanticisation chains, as illustrated by the use of *ỉr* as the content verb in Ex.250, and consequently may be categorised in stage D, while exhibiting some characteristics of stage E, of the verb-to-TAM chain[106].

	Desemanticisation	Decategorialisation	Cliticisation	Erosion	Verb-to-TAM
ỉr – verbal lexeme	1	1	1	1	A
ỉr – negative habitual auxiliary	3	3	1	1	D/E

Table 23 – Stages reached by each form of ỉr in each of the four linguistic shift chains and overarching verb-to-TAM chain.

Although the auxiliarification of the negative habitual mirrors that of the affirmative habitual, this development in the negative construction was not triggered or caused by the change in the corresponding affirmative. Auxiliarification is attested first in the negative construction, since the negative habitual *bw ỉr=f sḏm* was in use within Late Egyptian, at least by the reign of Ramesses II (Ex.245), while the affirmative habitual *ḫr ỉr=f sḏm* is not attested until Demotic (Johnson 1976:132). This shows that the development of the negative habitual construction was not dependent on that of the affirmative habitual, but these constructions developed independently, likely due to the negative form not being isomorphic to the affirmative.

As with auxiliarification in other constructions, the auxiliarification of the negative habitual construction caused an increase in analyticity due to an increased quantity of elements, and the increased the autonomy of the content verb through its new infinitive form and lack of dependent subject.

bw ỉr=f sḏm was subsequently used throughout Late Egyptian and Demotic.

[106] See pg.43-48 for further detail.

(248) *bw* *ir=i* *ʿm* *n* *t3y* *wšbt*
NEG AUX.HBT=1SG understand.INF OBJ this response
I cannot understand this response....
LES, 62.12
21st dynasty

(249) *bw* *ir* *msḥ* *ṯ* *rmt* *n* *tmy*
NEG AUX.HBT crocodile seize.INF person GEN town
A crocodile does not seize a person of the town.
Onchsheshonqy, 22.15 (Johnson 1976:147)
Late Ptolemaic

(250) *bw* *ir* *ḫbs* *ir* *yʿl* *n* *p3* *ḫ3y*
NEG AUX.HBT lamp make.INF brightness in the sunlight
A lamp does not make brightness in the sunlight.
Mythus, 8.2 (Johnson 1976:147)
c.100-199CE

2.g.iii. Second Syntheticisation (*bw ir=f sḏm* > ⲙⲉⲫⲥⲱⲧⲙ)

Within Coptic, the negative habitual construction exhibits further developments, with variations across dialects being visible. This construction was written ⲙⲉⲫⲥⲱⲧⲙ with pronominal subjects and ⲙⲉⲣⲉⲛ ⲥⲱⲧⲙ with nominal subjects in Sahidic, Fayumic[107] and Oxyrhynchtic, ⲙⲡⲁⲫⲥⲱⲧⲙ and ⲙⲡⲁⲣⲉⲛ ⲥⲱⲧⲙ respectively in Boharic, and ⲙⲁⲫⲥⲱⲧⲙ and ⲙⲁⲣⲉⲛ ⲥⲱⲧⲙ respectively in Akhmimic and Lycopolitan (Allen 2021:57).

(251) ⲭⲉ ⲙⲡⲁⲣⲉ-ϕⲧ ⲥⲱⲧⲉⲙ ⲉ ⲉⲁⲛ-ⲣⲉⲫⲉⲣⲛⲟⲃⲓ
PART AUX.NEG.HBT-god listen.INF DAT INDEF-sinner
....that God does not listen to sinners....
John, 9.31 (Boharic)
c.300-399CE

(252) ⲁⲩⲱ ⲙⲉ-ⲫ-ⲕⲧⲟ-ⲫ ⲉ-ⲡⲉ-ⲫ-ⲙⲁ
and AUX.NEG.HBT-return.INF-3MSG to-POSS-3MSG-place
....and he did not return to his place....
Antony, 3
822-823CE

In each dialect phonological change from *bw ir=f sḏm* is visible. The first element of the construction, *bw*, was written as either ⲙⲉ, ⲙ or ⲙⲡ. It is likely that each of these show a broadly similar phonological value to each other and to the earlier *bw*, but still show slight phonological differences between Coptic dialects. This is similar to the development of the not yet construction[108], although the not yet construction does not show such variations

[107] Since in Fayumic the grapheme ⲁ was consistently used where other dialects wrote ⲣ (Allen 2021:6), with nominal subjects the negative habitual was written ⲙⲉⲁⲉⲛ ⲥⲱⲧⲙ.
[108] See pg.227.

across dialects, and instead the linguistic form *bw ir.t=f sḏm* developed into ⲙⲡⲁⲧⲥⲱⲧⲙ in all dialects, with the element *bw* consistently written ⲙⲡ.

The element *ir* can be seen to have undergone erosion in its development to the linguistic forms used in Coptic. In the forms used with nominal subjects, the element ⲣⲉ in Sahidic and Oxyrhynchitic, written ⲗⲉ in Fayumic, shows a subtle phonological reduction of *ir*. However, the element ⲁⲣⲉ, used in Boharic, Akhmimic, and Lycopolitan shows a fuller form of *ir*, which seems to combine the reduced form ⲣⲉ with an alternative reduced form ⲁ, seen in the past ⲁⲭⲥⲱⲧⲙ. In forms used with pronominal subjects, in Boharic, Akhmimic, and Lycopolitan *ir* has undergone erosion, being reduced to ⲁ, while in Sahidic, Fayumic and Oxyrhynchitic such forms show the complete loss of *ir*. The forms ⲁⲣⲉ and ⲁ in Boharic, Akhmimic, and Lycopolitan show a contrast with the affirmative habitual construction, in which the auxiliary *ir* was eroded to ⲣⲉ in all Coptic dialects in which it was not lost (Till 1928:144-145). These developments show that this auxiliary had progressed along the erosion chain in the Sahidic and Oxyrhynchitic ⲙⲉⲣⲉN ⲥⲱⲧⲙ, the Boharic ⲙⲡⲁⲭⲥⲱⲧⲙ, the Fayumic ⲙⲉⲗⲉN ⲥⲱⲧⲙ, and the Akhmimic and Lycopolitan ⲙⲁⲭⲥⲱⲧⲙ. Since verbal prefixes in Coptic were never stressed (Reintges 2004:34), these writings of the negative habitual auxiliary may be classed in the final stage of the erosion chain (Heine 1993:56). The loss of *ir* from the Sahidic, Fayumic and Oxyrhynchitic ⲙⲉⲭⲥⲱⲧⲙ reflects the similar loss of *ir* in the affirmative habitual form ⲯⲁⲭⲥⲱⲧⲙ, and shows a more extreme form of erosion (Heine & Reh 1984:27) than that accounted for in the erosion chain (Heine 1993:56).

(253) ⲟⲩⲇⲉ ⲙⲉ-ⲩ-ⲭⲉⲣⲉ-ⲟⲩ-ϩⲏⲃⲥ ⲛ-ⲥⲉ-ⲕⲁⲗ-ⲫ ϩⲁ-ⲟⲩ-ⲯⲓ
nor AUX.NEG.HBT-3PL-kindle.INF-a-lamp AUX.CONJ-3PL-place.INF-3MSG under-a-weight
Nor do they kindle a lamp and place it under a weight....
Matt., 5.15 (Layton 2000:262)
c.750-799CE

The negative habitual construction in Coptic also shows the result of several instances of coalescence, each of which is similar to those which occurred in the affirmative habitual construction, as well as to many of the instances of coalescence in other constructions discussed so far. The elements *bw* and *ir*, which were independent words in the earlier *bw ir=f sḏm*, underwent coalescence and became affixes in the Coptic forms of the negative habitual, showing the progression of *ir* to the final stage of the cliticisation chain (Heine 1993:56). This development from independent words to affixes ensured that the coalescence which occurred between ⲙⲉ and ⲣⲉ[109] involved the process of compounding,

[109] Alternatively ⲙ and ⲁⲣⲉ, or ⲙⲡ and ⲁⲣⲉ, depending on dialect.

since these were of the same morphosyntactic status (Heine & Reh 1984:32). This compounding shows that although *bw* was exempt from the earlier auxiliarification of the negative habitual construction, it was not exempt from the processes involved in its syntheticisation, as with *ḫr* of the affirmative habitual construction.

In forms with nominal subjects, the auxiliary and subject underwent coalescence, with the new status of ⲙⲉ and ⲣⲉ as affixes requiring them to be affixed to another element. Since any nominal subject included a root morpheme, while ⲙⲉ and ⲣⲉ were non-root morphemes, this involved the process of affixation (Heine & Reh 1984:32). The auxiliary-subject group here remained separable from the content verb of the construction.

(254) ⲙⲉⲣⲉ-ϫⲁϫⲉ ⲅⲁⲣ ⲉⲯ-ϩⲱⲛ
AUX.NEG.HBT-enemy PART be_able_to.INF-approach.INF
ⲉϩⲟⲩⲛ ⲉ-ⲡ-ⲙⲁ ⲉⲧⲉⲣⲉ-ⲛⲁⲓ ⲛϩⲏⲧ-ⲥ
in to-the-place REL-these in-3MSG
For the enemy cannot approach into the place which these are in.
Instructions of Apa Pachomius, Fol.41a
985CE

In contrast, in forms with pronominal subjects, in which the auxiliary and subject were already inseparable due to the historical use of suffix pronouns, the content verb was involved in the coalescence which occurred, becoming inseparable from the auxiliary-subject group (Ex.255). Since the auxiliary and subject in this case each involved non-root morphemes, and all content verbs contained a root morpheme, this coalescence involved the process of affixation (Heine & Reh 1984:32).

(255) ⲁⲩⲱ ⲟⲩ-ⲉⲓⲙⲉ ⲉ-ⲧ-ⲥⲟⲫⲓⲁ
and 3PL-know.INF OBJ-the-wisdom
ⲙⲉ-ⲩ-ⲉⲓⲙⲉ ⲇⲉ ⲉⲣⲟ-ⲥ ϩⲙ-ⲡ-ϩⲏⲧ ⲛ-ⲛ-ⲁⲑⲏⲧ
AUX.NEG.HBT-3PL-know.INF PART OBJ-3FSG in-the-heart GEN-the-fool
....and wisdom is known, but it is not known in the heart of fools.
Prov., 14.33-34
c.500-599CE

As with coalescence in all constructions discussed so far, none of these instances of coalescence involved the loss of a word internal morpheme boundary, as involved in the final stage of the continuum of coalescence (Croft 2003:256), with the boundaries still being evident between ⲙⲉ, ⲣⲉ, ⲩ and ⲥⲱⲧⲙ.

The linguistic forms of the negative habitual used in Coptic also show the loss of all remaining verbal properties which the earlier auxiliary *ir* possessed, thus causing its progression to the final stage of the decategorialisation chain (Heine 1993:56). This,

combined with its progression to the final stages of the erosion and cliticisation chains, ensured that the affix ⲣⲉ[110] reached stage G of the overall verb-to-TAM chain, having become a monosyllabic, purely grammatical and unstressed affix (Heine 1993:65). However, in ⲙⲉⲩⲥⲱⲧⲙ, in which this auxiliary was lost, it could no longer be categorised in the verb-to-TAM chain.

	Desemanticisation	Decategorialisation	Cliticisation	Erosion	Verb-to-TAM
ir – verbal lexeme	1	1	1	1	A
ir – negative habitual auxiliary	3	3	1	1	D/E
ⲣⲉ/ⲁ/ⲁⲣⲉ – negative habitual affix	3	5	3	3	G
ⲙⲉⲩⲥⲱⲧⲙ	N/A	N/A	N/A	N/A	N/A

Table 24 – Stages reached by each form of ir and ⲣⲉ in each of the four linguistic shift chains and overarching verb-to-TAM chain.

The various developments which are evident from the linguistic forms used in Coptic caused an increase in the syntheticity of the negative habitual construction. This was primarily due to the various instances of coalescence, which each cause a greater interdependency between the elements of the construction. Further increases in syntheticity were caused by the various phonological reductions which occurred in the development of Sahidic and Oxyrhynchitic form ⲙⲉⲣⲉN ⲥⲱⲧⲙ, the Boharic ⲙⲡⲁⲩⲥⲱⲧⲙ, the Fayumic ⲙⲉⲗⲉN ⲥⲱⲧⲙ, and the Akhmimic and Lycopolitan ⲙⲁⲩⲥⲱⲧⲙ, causing a reduction in the length of the element *ir*, as well as the loss of *ir* in the Sahidic form ⲙⲉⲩⲥⲱⲧⲙ, which caused this linguistic form to contain a lesser quantity of elements. The differences between the extent of the phonological erosion in each dialect caused variation in the levels of syntheticity between these linguistic forms, with the less eroded linguistic forms being less synthetic than those which had undergone phonological reduction, which in turn were less synthetic than ⲙⲉⲩⲥⲱⲧⲙ, due to it having undergone loss.

[110] Alternatively ⲁ with pronominal subjects in Boharic, Akhmimic and Lycopolitan. The writing ⲁⲣⲉ, used before nominal subjects in Boharic, Akhmimic and Lycopolitan, likely does not reflect a monosyllabic form.

2.g.iv. Conclusions

The negative habitual construction is the only Egyptian verbal construction whose attested development began with the process of syntheticisation, as in all others analyticisation occurred first. This initial syntheticisation is similar to the first syntheticisation of the past construction, in that it was caused by the loss of the verb ending *.n*.[111] Moreover, the subsequent analyticisation of the negative habitual, caused by the process of auxiliarification, and its second syntheticisation, caused by coalescence and erosion, show broad similarities to the causes of analyticisation and syntheticisation in other constructions[112].

Furthermore, similar to the element *ḫr* in the affirmative habitual construction, *bw* in the negative habitual can be seen to have been exempt from the auxiliarification process, and consequently was not affected by in the analyticisation of the construction. However, the compounding of this element to *ỉr*, evident from the latest linguistic forms of the negative habitual shows that it was involved in syntheticisation. This shows that this pattern for elements outside the *sḏm=f* or *ỉr=f sḏm* grouping was not unique to the affirmative habitual *ḫr*, although comparison with further constructions is necessary to determine how widespread this phenomenon was.

Despite the similarities between the affirmative and negative habitual constructions, the development of the negative habitual construction was not dependent on the development of the corresponding affirmative construction, due to the linguistic form *n sḏm.n=f* and its successors being non-isomorphic negations. This is evidenced in the auxiliarification process, which occurred in the negative construction several hundred years prior to that of the affirmative, showing that the development of the negative construction was not dependent on changes occurring in the affirmative construction first. This is similar to the affirmative and negative past constructions, in which the auxiliarification of the negative past occurred in Old Egyptian, while that of the affirmative past did not occur until Demotic, although in that case the verbs used as the sources of auxiliaries were not identical, while in both the affirmative and negative habitual constructions the auxiliary used was *ỉr*.

[111] In the past construction the absence of *.n* may have been caused by the rejuvenation of an earlier form rather than loss. See pg.39.
[112] See chapters 3 and 4.

2.h. Future

sḏm=f >> *iw=f r sḏm* > *iw=f sḏm* > ϵqϵcωτм >> qnλcωτм

(*tw=i*[113] *m nˁy r sḏm* >) (*tw=y nȝ sḏm* >)

The heading 'future' here covers the expression of both future and modal meaning. Where distinctions in the expression of objective future meaning and subjective modal meaning did not affect the analyticity or syntheticity of the construction they are not discussed in detail. The most notable case of this is the early Egyptian subjunctive *sḏm=f* and prospective *sḏm=f*, of which the subjunctive expresses a more subjectively modal meaning, while the prospective expresses an objective future (Depuydt 1993a:23), with the morphological distinctions[114] between these not significantly affecting the analyticity or syntheticity of the construction.

2.h.i. Analyticisation (*sḏm=f* >> *iw=f r sḏm* / (*tw=i m nˁy r sḏm*))

Within Old Egyptian, the most commonly attested linguistic form of the future construction was *sḏm=f*[115].

(256)

int=k	*n(=i)*	*pȝˁwt*	*wnm(=i)*	*s(t)*
bring.FUT=2MSG	DAT=1SG	quails	eat.FUT.CIRC=1SG	3PL

May you bring quails to me so that I may eat them.
L. to D., pl.3.2
7th – 8th dynasties

A further linguistic form used to express the future, *iw=f r sḏm*, is first attested from the 5th dynasty (Vernus 1990:5) (Ex.262-263), showing a similarity to the past and present constructions, for which new linguistic forms are also first attested in the 5th dynasty[116].

[113] The linguistic forms *tw=i m nˁy r sḏm* and *tw=y nȝ sḏm* are presented here with the 1st person singular subject, since the 3rd person masculine singular, which is used to represent the subject position in all other linguistic forms, is only attested with these linguistic forms in this corpus following the imperfect converter *wn* (Ex.295, pg.141). Thus the form it took in unconverted clauses is unclear (although it may be hypothesised to use the same form as in *sw ḥr sḏm*, which provided the source construction for *tw=i m nˁy r sḏm*). Furthermore, in the corresponding negation *bn iw tw=y nȝ sḏm*, the only subject attested is the 1st person singular (Ex.333-334, pg.160-161).
[114] See Depuydt (1993a:24) for a list of morphological distinctions between the subjunctive *sḏm=f* and prospective *sḏm=f*, and Schenkel (1985:485) for a list of syntactic distinctions.
[115] Henceforth referred to as the future *sḏm=f* in order to avoid confusion with other *sḏm=f* forms, such as the past *sḏm=f* (see 2.a.i. and 2.a.ii.) and present (Subject) *sḏm=f* (see 2.d.i.). The term future *sḏm=f* in this thesis covers both the subjunctive *sḏm=f* and prospective *sḏm=f*, since the lack of variation in analyticity or syntheticity between the subjunctive and prospective make distinctions between these extraneous to the themes of this thesis.
[116] See pg.34 & 84.

(257) *ỉw=ṯn* *r* *šdt* *n(=ỉ)* *prt-ḫrw*
AUX=2PL AUX.FUT recite.INF DAT=1SG voice_offering
You shall recite a voice offering for me....
Urk. I, 119.7 (Edel 1955/1694:474)
6th dynasty, Pepy I

ỉw=f r sḏm was developed from the non-verbal location pattern, similar to the specific present *ỉw=f ḥr sḏm*, although it utilised the preposition *r* instead of *ḥr*. The location pattern with *r*, expressed the orientation of an intentional subject towards a spatial destination or goal, along with the inference of motion (Grossman & Polis 2014:48).

(258) *i(w)=f* *ỉr* *[ꜥḥ]* *pf* *n* *nbw* *kꜣw*
AUX=3MSG towards palace that GEN lords kas
He is (going) towards that palace of the lords of kas.
PT598a[P] (Grossman & Polis 2014:48)
6th dynasty, Pepy I

The expressed orientation towards a destination or goal and the inferred movement denoted by the preposition *r*, the sole fixed element of this construction, contributed significantly to the ability of this pattern to be grammaticalised for future tense. Movement-towards constructions are one of the main sources of future grams attested crosslinguistically (Bybee 2015:122), being aided by a 'relatively straightforward metonymic link between movement towards a goal and a future action implied by that goal' (Waltereit 2012:67). This signification of futurity by *r* can be seen within the non-verbal location pattern.

(259) *i(w)=f* *r* *ḫmtnw=ṯn* *m* *ỉwnw*
AUX=3MSG AUX.FUT third_one=2PL in Heliopolis
He shall be your third one in Heliopolis.
PT363f[P] (Edel 1955/1964:391)
6th dynasty, Pepy I

In order to express a verbal construction, the noun phrase of the location pattern was replaced with a content verb in the infinitive form, a development which would have occurred quite straightforwardly, since 'der Infinitiv eigentlich ein Verbalnomen ist' (Edel 1955/1964:351) and thus could occur in positions typically taken by nouns. The combination of the preposition *r* followed by an infinitive is also attested earlier, in purpose clauses.

(260) [....] *ḫmwt* *50* *r* *ỉrt* *kꜣt* *ỉm=f* *rꜥ* *nb*
craftsmen 50 PURP do.INF work on=3MSG day every
....50 craftsmen to do work on it every day....
Debehen, 4
4th dynasty, Menkaure

The majority of Old Egyptian examples of the *iw=f r sḏm* construction used the auxiliary *iw* before both pronominal (Ex.257) and nominal (Ex.261) subjects.

(261) *iw* *ḥm=f* *r* *ir[t]* *sꜣrw=k* *ꜥšꜣw* *iḳrw*
AUX majesty=3MSG AUX.FUT fulfil.INF needs=2MSG many excellent
His majesty shall fulfil your many excellent needs....
Urk. I, 129.8
6th dynasty, Merenre & Pepy II

However, *iw* was not an obligatory part of the construction, and alternative auxiliaries or particles could be used in its place (Ex.262-263). *iw* itself was only used in initial main clauses (Grossman & Polis 2014:53), being a marker of initiality at this stage. Edel (1955/1964:474) also noted a sole Old Egyptian example without any introductory auxiliary or particle (Ex.264).

(262) *wnt=k* *r* *irt* *š*
PART=2MSG AUX.FUT make.INF lake
ḫft *ḏddt* *m* [*stp-zꜣ*]
according_to say.PST.PTCP.PASS.NOM in palace
....that you shall make the lake according to what was said in the palace.
Senedjemib Inti B1, 6
5th dynasty, Djedkare

(263) *mk* *w(i)* *r* *fꜣg* *mnt=f*
PART 1SG AUX.FUT cut_off.INF haunch=3MSG
Look, I shall cut off its haunch.
Tomb of Ptahhotep, pl.36, 3rd row (Edel 1955/1964:474)
5th dynasty, Djedkare

(264) *ḥm(=i)* *r* *ḥzt=k* *ḥr=s*
majesty=1SG AUX.FUT favour.INF=2MSG on_account_of=3SG
My majesty shall favour you on account of it.
Urk. I, 296.7 (Edel 1955/1964:474)
8th dynasty

The use of an infinitival complement with *r* shows evidence that it had undergone auxiliarification. As with the auxiliary *ḥr* in the present construction, the auxiliary *r* of the future construction progressed along the adposition-to-TAM chain, instances of which are 'not frequently encountered in the languages of the world' (Heine 1993:77). The desemanticisation, cliticisation and erosion chains which are involved in the overarching verb-to-TAM chain may be straightforwardly applied to the adposition-to-TAM chain, while the decategorialisation chain must be altered to account for the properties of adpositions rather than those of verbs, as detailed previously[117].

[117] See pg.87.

The prepositional lexeme *r* may be categorised in stage one of the four linguistic shift chains. This preposition may be classed in stage one of the cliticisation chain since it appears as an independent word (Heine 1993:55) and of the erosion chain due to its apparent full phonological form (Heine 1993:63. Since it expressed a lexical concept and its complement within the location pattern expressed a concrete location, the prepositional lexeme *r* within the location pattern may be classed in stage one of the desemanticisation chain (Heine 1993:54), although outside of this pattern a form of *r* could also be used before finite verb forms including the future or nominal *sḏm=f*, *sḏmw=f* and *sḏm.t=f* (Edel 1955/1964:386-387). Furthermore, the prepositional lexeme *r* may be categorised in stage one of the decategorialisation chain since it exhibited a fully prepositional morphosyntax, containing each of the properties typical of Egyptian prepositions[118], including the ability to form compound prepositions such as *r-sꜣ*, 'behind' and *r-gs* 'near' (see Edel 1955/1964:397-405 and Gardiner 1957:132-136 for more), prepositional verbs such as *ir r*, 'act against' and *rḏi r*, 'give as', and, through the addition of *y*, the adjective *iry*, 'relating to' (Gardiner 1957:62). Since it sits in stage one of each of the four linguistic shift chains, the prepositional lexeme *r* may be categorised in stage A of the overarching adposition-to-TAM chain.

In contrast, the auxiliary *r* in *iw=f r sḏm* had begun to progress along both the desemanticisation and decategorialisation chains, although it remained in stage one of the cliticisation and erosion chains. This shows the divergence of the auxiliary *r* from its lexical source, although there is no evidence of any morphological or phonological divergence. The ability of *r* to take an infinitival complement shows it had progressed to stage two of the desemanticisation chain (Heine 1993:54). However, the earliest attestations of *iw=f r sḏm* indicate that stage three of this chain, in which the referent of the subject is no longer required to be willful/human (Heine 1993:54), has not been reached, since *iw=f r sḏm* in the 5th dynasty is only attested with pronominal subjects (Ex.262-263) in the corpus used for this thesis. In the 6th dynasty *iw=f r sḏm* is attested with non-willful/human referents, as in Ex.265, in which the subject *s* refers to *wꜥrt*, 'area' in the previous clause, showing that stage three of the desemanticisation chain had been reached by this time.

[118] See pg.87 for details.

(265) *ỉnk* *wp* *wʿrt* *tn*
1SG open.PST.PTCP area this
ỉ(w)=s *r* *sbt* *ḥr(=ỉ)* *m* *ḫrt-nṯr*
AUX=3FSG AUX.FUT attain.INF on_account_of=1SG in necropolis
ỉ(w)=s *r* *ỉrt* *mrrt*
AUX=3FSG AUX.FUT do.INF desire.PRS.PTCP.PASS.NOM
I am the one who opened this area. It shall attain on my account in the necropolis. It shall do what is desired.
Urk. I, 222.18-223.2
6th dynasty, Pepy II

The future auxiliary *r* had also lost its prepositional properties, as it was no longer able to be used in the formation of compound prepositions, prepositional verbs, or adjectives, and was only able to take an infinitival complement. This shows the significant advancement of this form along the decategorialisation chain, although the later use of alternative predicates in the future construction[119] suggests that not all of the prepositional properties were lost, similar to the present auxiliary *ḥr*[120]. Thus *r* had not reached the final stage of the decategorialisation chain, but may be classed in stage four.

The advancement of *r* to stage two of the desemanticisation chain and stage four of the decategorialisation chain within *ỉw=f r sḏm* in the 5th dynasty allows it to be categorised in stage B of the adposition-to-TAM chain. *r* also shows characteristics of stage C, as it has a grammatical function (Heine 1993:60), but the restriction of the subject to willful/human subjects, which is typically lifted in stage C (Heine 1993:60), ensures that *r* in the 5th dynasty cannot be categorised as fully in this stage.

However, evidence of non-human subjects in *ỉw=f r sḏm* in the 6th dynasty shows that *r* had progressed further along the adposition-to-TAM chain. From the 6th dynasty *r* may be categorised in stage D, due to its progression along the desemanticisation chain and its advanced decategorialisation. These also ensured that *r* exhibited characteristics of stage E, but the lack of cliticisation or erosion, which are each typically triggered in stage E (Heine 1993:63), prevent it from being categorised solely within this stage.

As with other constructions, the auxiliarification of the future construction resulted in a change in word order from the VS order of the future *sḏm=f* to the SV order of *ỉw=f r sḏm*[121].

[119] See pg.144-145.
[120] See pg.96-97.
[121] See 3.a.iii.1. and 3.a.iv.1.

	De-semanticisation	De-categorialisation	Cliticisation	Erosion	Adposition-to-TAM
r – prepositional lexeme	1	1	1	1	A
r – future auxiliary (5th dynasty)	2	4	1	1	B/C
r – future auxiliary (6th dynasty)	3	4	1	1	D/E

Table 25 – Stages reached by each form of r in each of the four linguistic shift chains and overarching adposition-to-TAM chain.

Both the future *sḏm=f* and *iw=f r sḏm* were used to express the future throughout Middle Egyptian, although the future *sḏm=f* remained the most common expression of future tense. This was due to the difference in meaning between these two linguistic forms, with the future *sḏm=f* expressing a *subjective* future (Vernus 1990:20-24), and *iw=f r sḏm* expressing an *objective* future (Vernus 1990:9-14).

(266) *mr* *ḥm* *pḥ=k* *imnt* *sꜣḥ* *ḥꜥw=k* *tꜣ*
desire.IMP PART reach.FUT=2MSG west join.FUT body=2MSG earth
ḫny=i *r-sꜣ* *wrḏ=k*
alight.FUT=1SG after grow_weary.PRS.CIRC=2MSG
iḫ *ir=n* *dmi* *n sp*
PART make.FUT=1PL harbour together
Desire indeed that you may reach the west and your body may join the earth.
I will alight after you have grown weary. Then we will make harbour together.
Man & Ba, 151-154
12th dynasty, Amenemhat III

(267) *iry=n* *n* *nswt* *nḫt*
act.FUT=1PL DAT king mighty
May we act for the mighty king.
Urk. IV, 327.13
18th dynasty, Hatshepsut

(268) *iw* *dpt* *r* *iit* *m* *ḫnw*
AUX ship AUX.FUT come.INF from home
A ship shall come from home....
MES, 45.1 (Gardiner 1957:253)
12th dynasty

(269) *iw=i* *r* *šmt*
AUX=1SG AUX.FUT go.INF
I shall go....
Peasant B2, 114
12th dynasty, c. Amenemhat III

Within Middle Egyptian, the linguistic form *iw=f r sḏm* continued to appear with other auxiliaries or particles (Ex.270-271), or with no auxiliary or particle at all when the subject was nominal (Ex.272).

(270)

smwn=k	*r*	*rdit*	*mɜ=i*
PART=2MSG	AUX.FUT	allow.INF	see.FUT=1SG

bw	*wršw*	*ib=i*	*im*
place	spend_time.PRS.REL	heart=1SG	there

You shall surely allow me to see the place where my heart spends its time.
MES, 29.15-16 (Gardiner 1957:181)
12th dynasty, Amenemhat III

(271)

mk	*wi*	*r*	*nḥm*	*ꜥɜ=k*
PART	1SG	AUX.FUT	take_away.INF	donkey=2MSG

Look, I am going to take away your donkey....
Peasant B1, 42
12th dynasty, c. Amenemhat III

(272)

ib	*n*	*ḥm=k*	*r*	*ḳbb*
heart	of	majesty=2MSG	AUX.FUT	be_refreshed.INF

The heart of your majesty shall be refreshed....
P. Westcar, 5.3-4
Second Intermediate Period

By Late Egyptian *iw=f r sḏm* had replaced the future *sḏm=f* as the most common form of the future construction. The future *sḏm=f* remained in use, but was more restricted than in earlier language stages, being restricted to non-narrative contexts (Neveu 2015:80).

(273)

iḫ	*di=k*	*int*	*n=i*	*mry-ms*
PART	cause.FUT=2MSG	bring.FUT	DAT=1SG	Merymose

wꜥ	*n*	*ꜥw*	*ḏmꜥ*
one	GEN	papyrus_roll	papyrus_roll

Will you cause that Merymose bring a papyrus roll to me....?
K*RI* I, 240.4 (Neveu 2015:81)
19th dynasty, Sety I

(274)

dd=Ø	*n=tn*	*gs*	*diw*
grant.PST	DAT=2PL	half	rations

ḫr	*iw=i*	*r*	*dni=f*	*n=tn*	*ḏs=i*
PART	AUX.FUT=1SG	AUX.FUT	share_out.INF=3MSG	DAT=2PL	self=1SG

Half rations have been granted to you, and I shall share it out to you myself.
RAD, 56.7 (Neveu 2015:76)
20th dynasty, Ramesses III, year 29

iw=f r sḏm in Late Egyptian shows several changes from *iw=f r sḏm* in Middle Egyptian. One syntactic change that can be observed is the obligatorification of the auxiliary *iw* which occurred at the beginning of the Late Egyptian stage. This ensured that *iw* could no longer be replaced by alternative auxiliaries or particles, or omitted from the construction, as it could be in earlier stages. Within Late Egyptian *iw* was also no longer a marker of initiality,

and thus was not restricted to appearing with initial main clauses as it had been earlier. Since obligatorification had made *iw* an integral part of the linguistic form *iw=f r sḏm* (Grossman & Polis 2014:53), *iw* was able to carry some the semantic features of the construction which were required to be expressed by a fixed element. Consequently, whilst in Middle Egyptian it was *r* alone which conveyed futurity within *iw=f r sḏm*, in Late Egyptian it was both *iw* and *r* which encoded the expression of futurity (Grossman & Polis 2014:54).

As a result of the obligatorification of *iw* and its subsequent status as 'a full-fledged future marker' (Grossman & Polis 2014:54), the *r* + infinitive section of the *iw=f r sḏm* form could be replaced by a series of alternative adverbial phrases, as has been demonstrated by Groll (1970:126), or by the stative (Neveu 2015:78-79). Similar to *ḥr* in the present construction[122] this shows that *r* retained some residual prepositional properties. However, attestations of alternative predicates are restricted to the contexts of oaths, testaments and wills (Neveu 2015:78).

(275)

ir	*nȝy=i*	*h<n>r*	*nȝy=i*	*ḏnḏr*	*msti*
as_for	POSS=1SG	chisel	POSS=1SG	fuel	basket

[i]w[=w]	*n*	*imn-ms*
AUX.FUT=3PL	DAT	Amenmose

As for my chisels and my fuel baskets, they shall be for Amenmose.
K*RI* I, 409.5-6 (Neveu 2015:78)
19th dynasty, Sety I

(276)

iw=i	*šw.k(w)*	*im=s*
AUX.FUT=1SG	be_deprived_of.STV	of=3FSG

I shall be deprived of her.
K*RI* II, 801.12 (Neveu 2015:79)
19th dynasty, Ramesses II, year 15

(277)

mtw=i	*mdw*	*m*	*pȝy*	*ʿȝ*
AUX.CONJ=1SG	speak.INF	about	this	donkey

iw=f	*ḫr*	*100*	*n*	*sḫ*
AUX.FUT=3MSG	under	100	GEN	lashes

....and if I speak about this donkey, I[123] shall be under 100 lashes....
HO, Pl.47.3.3-4 (Groll 1970:127)
20th dynasty, Ramesses III, year 31

[122] See pg.96-97.
[123] The sudden change from a 1st to 3rd person is characteristic of oaths in Late Egyptian (Blackman 1926:178 n.4).

(278) *iw* *bn* *mꜣʿt* *pꜣ* *ḏd=i* *nb*
CIRC NEG truth the say.PST=1SG all
iw=i *di.k(w)* *tp* *ḫt*
AUX.FUT=1SG place.STV upon stake
If all that I have said is not the truth, I shall be placed upon the stake.
K*RI* VI, 758.16-759.1 (Neveu 2015:79)
20th dynasty, Ramesses XI, year 9

The ability to replace *r sḏm* with the stative or alternative adverbial phrases within *iw=f r sḏm* led Groll to suggest that *iw=f r sḏm* must be categorised as belonging to both the categories of durative and non-durative tenses (Groll 1970:126). However, the ability to differentiate between durative and non-durative aspect was not a mainstream use of this linguistic form, and the uses of *r sḏm* far outweigh the uses of the stative or any other adverbial phrase. Instead, the distinguishing of aspect was a rare, idiosyncratic use.

A further development affecting *iw=f r sḏm* in Late Egyptian involved the use of an allomorph of *iw*, *ir*, which was used before nominal subjects. *ir* was used with the same categories of predicate as *iw*.

(279) *ir* *pꜣ* *nty* *nb* *iw=f* *r* *sḫ*
as_for the REL any AUX.FUT=3MSG AUX.FUT be_neglectful.INF
ḥr *wḏ* *tn* *ir* *wsir* *m-sꜣ=f*
concerning command this AUX.FUT Osiris after=3MSG
As for anyone who will be neglectful concerning this command, Osiris shall be after him....
HI, 29.13 (Groll 1970:125)
19th dynasty

(280) *ir* *pꜣ* *wr* *ʿꜣ* *n* *ḫtꜣ* *dit*
AUX.FUT the chief great GEN Hatti cause.INF
in.tw=w *n* *wsr-mꜣʿt-rʿ* *stp-n-rʿ*
bring.FUT.PASS=3PL DAT Usermaatre Setepenre
The great chief of Hatti shall cause that they be brought to Usermaatre Setepenre....
K*RI* II, 229.4 (Neveu 2015:77)
19th dynasty, Ramesses II, year 21

(281) *ir* *pꜣy=i* *nb* *r* *dit* *iry=tw* *sbꜣyt*
AUX.FUT POSS=1SG lord AUX.FUT cause.INF administer.FUT=PASS punishment
n *tꜣy* *st-ḥmt* *r-iṯꜣy* *pꜣ* *ḫꜣ*
DAT this woman REL-steal.PST the chisel
My lord shall cause that a punishment be administered to this woman who stole the chisel....
K*RI* IV, 317.9-10 (Neveu 2015:77)
19th dynasty, Sety II, year 6

The use of *ir* rather than *iw* did not cause any difference in meaning but was simply a graphemic variant (Junge 2001:123). Such a development indicates that *iw=f r sḏm* had

reached a higher degree of grammaticalization at this stage (Grossman & Polis 2014:54 with reference to Bybee et al. 1991:37).

The replacement of the future *sḏm=f* by *iw=f r sḏm* as the most common expression of futurity by Late Egyptian caused an increase in the analyticity of the future construction, primarily due to the process of auxiliarification. The presence of the auxiliary *r*, as well as *iw*, in *iw=f r sḏm* increased the quantity of elements within the construction. Furthermore, the change in the form of the content verb from an inflected form in the future *sḏm=f* to an uninflected infinitive in *iw=f r sḏm*, as well as the change in position of the subject ensuring it was no longer dependent on the content verb, increased the autonomy of the content verb. An overall increase in the autonomy of the future construction can also be seen in the increased separability of its elements. In the future *sḏm=f*, when the subject was pronominal, the two elements could not be separated by external elements, as can be seen in (Ex.282), in which the particle *ḥm* occurs after the entirety of the future *sḏm=f* form.

(282)

[ꜥnḫ=f]	ḥm	m	ꜥnḫt=f	[i]m
live.FUT=3MSG	PART	from	live.PRS.REL.NOM=3MSG	on

He will indeed live from that which he lives on....
PT1024b[M]
6th dynasty, Merenre

However, when the subject was nominal, it could be separated from the content verb, showing paradigmatic variation in the syntheticity of this linguistic form[124]. This variation can be seen in the parallel examples of (Ex.282) and (Ex.283).

(283)

ꜥnḫ	ḥm	ppy	pn	m	ꜥnḫt=f	im
live.FUT	PART	Pepy	this	from	live.PRS.REL.NOM=3MSG	on

This Pepy will indeed live from that which he lives on....
PT1024b[P]
6th dynasty, Pepy I

Within *iw=f r sḏm*, external elements could separate the elements of the construction even when the subject was pronominal, as with the particle *ḥm* in (Ex.284) and the adverb *dy* in (Ex.285) below, which each separates the subject from the content verb (Ex.285) or auxiliary and content verb (Ex.284).

(284)

iw=i	ḥm	r	irt	ḫnt=i
AUX=1SG	PART	AUX.FUT	do.INF	water_procession=1SG

I shall indeed do my water procession.
P. Westcar, 5.7
Second Intermediate Period

[124] See 5.b.

(285) *šȝ.t* *iḫ* *iy* *iw=i* *dy* *ḫȝ.tw*[125]
TRM what come.INF AUX.FUT=1SG here be_abandoned.STV
Until what comes shall I be abandoned here?
LES, 73.16-74.1
21st dynasty

Thus through the replacement of the future *sḏm=f* as the most commonly used linguistic form of the future construction by *iw=f r sḏm*, the separability, and consequently analyticity, of the construction had been increased.

Within Late Egyptian, a further linguistic form of the future construction, *tw=i m nʿy r sḏm*, is first attested. This was formed using *nʿy*, meaning 'to go', conjugated within the present linguistic form *sw ḥr sḏm*, with *m* being used in place of *ḥr* since *nʿy* was a verb of motion[126]. This was then followed by an *r* + infinitive purpose clause (Grossman et al. 2014a:91), containing the content verb of the construction. The use of the present *sw ḥr sḏm* as the source construction ensured that *tw=i m nʿy r sḏm* exhibited the same paradigmatic variation in the expression of pronominal subjects[127].

Within this linguistic form, futurity was expressed by both *nʿy* and *r*. *r* in *tw=i m nʿy r sḏm* originated from the same prepositional lexeme as *r* in *iw=f r sḏm*, and was already grammaticalised for future within the purpose clause *r* + infinitive. The verbal lexeme *nʿy*, which was auxiliarified within *tw=i m nʿy r sḏm*, was also able to aid in providing the expression of futurity due to its lexical meaning 'to go', since the concept of motion may be easily transferred to implying futurity, as is frequently attested in crosslinguistic examples of motion verbs being grammaticalised into future tenses (Waltereit 2012:67). However, the lexical meaning of *nʿy* was not always the general 'to go', but in earlier stages of Egyptian this verb meant 'traverse waterway', showing a more specialised meaning[128]. The fact that the verbal lexeme *nʿy* was not used in a grammatical construction and did not undergo auxiliarification until its meaning had been generalised is commensurate crosslinguistically, since in many languages the lexemes which are grammaticalised typically represent the most basic semantics, having previously been semantically generalised (Bybee et al. 1994:9). Within the domain of verbs of motion, 'to go' represents the most basic semantics, thus it was once *nʿy* had attained this generalised meaning that it was grammaticalised as an auxiliary.

[125] The ending *.tw* shows an example of the later replacement of the 1st person singular stative ending *.kw* (Neveu 2015:46).
[126] See pg.86, 92 & 97.
[127] See pg.95-96.
[128] See Grossman et al. (2014a:95-96) for a more detailed synopsis of the semantics of *nʿy*.

Initially, the linguistic form *tw=i m nʿy r sḏm* was developed 'for the expression of the prospective aspect in the narrower sense' (Loprieno 1995:94), in which it 'relates the present state of the subject to some subsequent situation' (Reintges 2011:68). *tw=i m nʿy r sḏm* carried this use throughout Late Egyptian.

(286) *tw=k* *rḫ.tw* *pȝy* *mšʿ*
2MSG know.STV this expedition
nty *tw=i* *m* *nʿy* *r* *ir=f*
REL 1SG AUX.PRS go.INF/AUX.FUT PURP do.INF=3MSG
You know this expedition which I am going to do.
LRL, 35.15 (Grossman et al. 2014a:92)
20th dynasty, Ramesses XI, year 28

Within Late Egyptian *tw=i m nʿy r sḏm* was 'still a free lexical construction' (Loprieno 1995:94), although *nʿy* had begun to be auxiliarified, showing minor progressions along the desemanticisation and decategorialisation chains. As can be seen from (Ex.286) above, within *tw=i m nʿy r sḏm* the complement, which provides the content verb of the construction, was able to express a dynamic situation, and thus *nʿy* has progressed to stage two of the desemanticisation chain (Heine 1993:54). However, each example of *tw=i m nʿy r sḏm* from Late Egyptian may be interpreted with either motion with purpose or imminent future meaning (Grossman et al. 2014a:92), and although context is more likely to infer the meaning of imminent future, this shows that the lexical meaning of *nʿy* had not yet been fully replaced by its grammatical meaning. Furthermore, in all known Late Egyptian examples of *tw=i m nʿy r sḏm*, the subject is human (Grossman et al. 2014a:102), thus showing that the desemanticisation chain has not been completed.

Since the complement nucleus of *nʿy* within *tw=i m nʿy r sḏm* consisted of an infinitive, *nʿy* shows progression to stage two of the decategorialisation chain (Heine 1993:55). However, *nʿy* has not progressed any further along this chain, as its complement *r sḏm* may be viewed as clausal, and it did not exclusively take infinitival complements, a feature of stage three of the decategorialisation chain (Heine 1993:5), but remained able to take non-verbal complements, as in Ex.287-288.

(287) *m ḏr* *ḏd=k* *n=i* *ḥr* *smi* *ḥr* *pȝy=i* *šri*
TEMP say.TEMP=2MSG DAT=1SG AUX.PRS report.INF about POSS=1SG son
iw=f *m* *nʿy* *r* *ḫȝr*
CIRC=3MSG AUX.PRS go.INF to Khor
When you spoke to me, reporting about my son, as he was going to Khor....
LEM, 63.4-5
19th dynasty, Seti II

(288) *ptr* *tw=k* *m* *nʿy* *m-ḫd*
see 2MSG AUX.PRS go.INF northwards
See, you are going northwards.
O. IFAO 1409, 2 [unpubl.] (Černý & Groll 1993:339-340)
20th dynasty

nʿy in *tw=i m nʿy r sḏm* may be categorised in stage one of the cliticisation chain, since it remained an independent word (Heine 1993:55), and in stage one of the erosion chain, since it retained its full phonological form (Heine 1993:56). Consequently, within the overarching verb-to-TAM chain, the auxiliary *nʿy* may be categorised in stage B, since it was associated with both nominal compliments and non-finite verbal complements (within a purpose clause) (Heine 1993:59). As there is no evidence of it being able to take non-human subjects, and its complement, *r sḏm*, may be viewed as clausal, *nʿy* had not progressed to stage C (Heine 1993:60-61). Nonetheless, its progression to stage B shows a slight divergence from the verbal lexeme *nʿy*, which may be categorised in stage A of the verb-to-TAM chain since it expressed a purely lexical concept (Heine 1993:59).

	Desemanticisation	Decategorialisation	Cliticisation	Erosion	Verb-to-TAM
nʿy – verbal lexeme	1	1	1	1	A
nʿy – future auxiliary	2	2	1	1	B

Table 26 – Stages reached by each form of nʿy in each of the four linguistic shift chains and overarching verb-to-TAM chain.

Although auxiliarification in other constructions frequently occurred concurrently with a change in word order from VS to SV, no change in word order occurred with the auxiliarification of *nʿy*. This was due to the fact that the future construction had already acquired SV word order through the earlier auxiliarification of *r* and the development of *iw=f r sḏm*, as had the present *sw ḥr sḏm*, within which *nʿy* was conjugated[129].

The linguistic form *tw=i m nʿy r sḏm* was more analytic than *iw=f r sḏm*, primarily due to its greater quantity of elements. However, *tw=i m nʿy r sḏm* was evidently used considerably less than *iw=f r sḏm*, being very rarely attested within Late Egyptian (Grossman et al. 2014a:100). Consequently, as it did not replace *iw=f r sḏm* as the most common future form at this stage, and did not do so until both forms undergone significant

[129] See 3.a.iii.1. and 3.a.iv.1.

syntheticisation, the development of *tw=i m nꜥy r sḏm* did not further the analyticisation of the future construction.

2.h.ii. Syntheticisation (*ỉw=f r sḏm* > *ỉw=f sḏm* > ⲉϥⲉⲥⲱⲧⲙ >> ϥⲛⲁⲥⲱⲧⲙ / (*tw=i m nꜥy r sḏm* >) (*tw=y nꜣ sḏm* >) ϥⲛⲁⲥⲱⲧⲙ)

Within Late Egyptian and Demotic, the written forms of both *ỉw=f r sḏm* and *tw=i m nꜥy r sḏm* show evidence of the process of loss. In each linguistic form, this was focussed around the elements which originated from prepositions, with the *r* of *ỉw=f r sḏm* and the *m* and *r* of *tw=i m nꜥy r sḏm* being affected. The omission of these elements from *ỉw=f r sḏm* and *tw=i m nꜥy r sḏm* reflected the frequent omission of the prepositional lexemes *m* and *r* in Late Egyptian (Černý & Groll 1993:110-111). However, the loss of *r* from *ỉw=f r sḏm* was not completed in forms used with pronominal subjects, suggesting that this element may have remained in use in the spoken language throughout Late Egyptian and Demotic, despite its optional orthographic omission.

The omission of *r* from *ỉw=f r sḏm* in writing was enabled by the obligatorification of *ỉw*. Prior to *ỉw* becoming an obligatory part of the constructions, *r* provided the primary expression of future tense, and thus could not be frequently omitted. Following its obligatorification, *ỉw* was grammaticalised further, resulting in it also being able to provide an expression of future tense. This initially led to the future time reference of the construction being expressed by the combination of *ỉw* and *r* (Grosssman & Polis 2014:54). Since it was no longer the only means of expressing future tense, *r* could subsequently be omitted from the construction without leaving it devoid of such a grammatical element, since futurity was subsequently encoded within *ỉw* (Grossman & Polis 2014:54). Thus the increasing predominance of *ỉw* for the expression of future tense enabled an increasing ease of the omission of *r*, at least from the written form of the construction.

In addition to this, the orthographic loss of *r* may also be attributed to phonological changes. Johnson has suggested that the possible omission of *r* from *ỉw=f r sḏm* in Demotic likely reflects an earlier phonological development of *r* from consonant to vowel, made visible in writing in Coptic (Johnson 1976:156). Due to the lack of a consistent means of representing vowels in the Egyptian writing system before Coptic, this phonological change would have allowed *r* to be omitted from the written form of *ỉw=f r sḏm*, although it would likely have remained in the spoken form.

	Numerical data		Percentage	
	r	Ø	*r*	Ø
18th dynasty – Ramesses II	59	10	85%	15%
Merenptah – Saptah	28	13	68%	32%
Ramesses III – Ramesses VIII	28	32	46%	54%
Ramesses XI – Ramesses XI	5	58	8%	92%
21st dynasty	1	35	3%	97%
22nd – 24th dynasties	2	746	0.8%	99.2%
25th dynasty	13	32	29%	71%

Table 27 – Numerical count and corresponding percentages of the presence of r in written forms of main clause iw=f r sḏm forms in Late Egyptian. From Winand 1992:509-510.

At the beginning of the Late Egyptian language stage, *r* was almost always written (Winand 1992:504) within *iw=f r sḏm*. However the fact that it was omitted in 15% of cases in the 18th and early 19th dynasties (table 27) shows that it had already become non-obligatory by this stage, and in writing *iw* alone could be used to express futurity. Throughout Late Egyptian, the inclusion of *r* in written forms of *iw=f r sḏm* declined, almost never appearing in late 20th dynasty texts (Wente 1961:122).

(289) *ḫr* *bw* *rḫ=i* *r-ḏd*
PART NEG know.HBT=1SG that
ir *pȝy=i* *ꜥḏd* *pḥ* *r=k*
AUX.FUT POSS=1SG boy reach.INF at=2MSG
I do not know that my boy shall reach you.
K*RI* IV, 79.8-9 (Neveu 2015:93)
19th dynasty, Merenptah, year 3

(290) *iw=i* *dit* *n=k* *tȝy* *wḫȝt*
AUX.FUT=1SG give.INF DAT=2MSG this loaf
I shall give this loaf to you.
LES, 43.16
20th dynasty, Ramesses V

(291) *ḫr* *iw=i* *hȝb* *ḥr=w* *m-bȝḥ* *pr-ꜥȝ* *ꜥ.w.s.*
PART AUX.FUT=1SG write.INF about=3PL before pharaoh l.p.h.
I shall write about them to pharaoh l.p.h.....
K*RI* VI, 476.9 (Neveu 2015:77)
20th dynasty, Ramesses IX, year 16

The limited number of examples from this time in which *r* was written, alongside a greater quantity of examples in which *r* was written from later time periods, shows that the orthographic loss of *r* was not completed. In his 1961 work, Wente was able to cite one example of *r* being present in writings of *iw=f r sḏm* in texts from the late Ramesside period, alongside an example from the corresponding negative form (Wente 1961:122 n.i), although Winand's count of five examples with *r* present from the reigns of Ramesses IX to Ramesses XI (table 27) shows that this has been added to by later works.

(292) *iw=i* *r* *ḏd* *pꜣy=w* *sḫr*
AUX.FUT=1SG AUX.FUT tell.INF POSS=3PL story
I shall tell their story.
P. Mayer A, 8.13
20th dynasty, Ramesses XI, year 19-20

According to Winand's data (table 27), the orthographic omission of *r* from *iw=f r sḏm* peaked in the 22nd to 24th dynasties, during which *r* was omitted in 99.2% of examples in Winand's corpus. However, the remaining 0.8% in which *r* was present shows that the orthographic loss of *r* was not fully completed at this stage, and the subsequent presence of *r* in 29% of examples from the 25th dynasty indicates that its use had likely continued in the spoken language throughout Late Egyptian, with the process of loss primarily only affecting the written form of the construction. The increasing reappearance of *r* in writing in the 25th dynasty also shows that its orthographic loss was not a unidirectional linguistic pathway.

Throughout Demotic, it remained possible for *r* to be present or to be omitted from *iw=f r sḏm*, even within the same text (Ex.293-294), further showing that the process of orthographic loss which had significantly progressed in Late Egyptian was not completed, although it had the lasting effect of *r* being non-obligatory in the written language throughout Demotic. This resulted in paradigmatic variation in syntheticity between the orthography of *iw=f r sḏm* in which *r* was present, and that in which it was not.

(293) *iw=f* *ḥpr* *iir=k* *r* *ir=f*
COND=3MSG happen.INF AUX.FUT=2MSG AUX.FUT do.INF=3MSG
If it happens that you shall do it....
Magical, 6.9 (Johnson 1976:156)
c.200-299CE

(294) *iw=f* *ḥpr* *iir=k* *ir=f*
COND=3MSG happen.INF AUX.FUT=2MSG do.INF=3MSG
If it happens that you shall do it....
Magical, 27.33 (Johnson 1976:156)
c.200-299CE

Furthermore, where *r* was omitted its development may no longer be categorised within the adposition-to-TAM chain.

	De-semanticisation	De-categorialisation	Cliticisation	Erosion	Adposition-to-TAM
r – prepositional lexeme	1	1	1	1	A
r – future auxiliary (5th dynasty)	2	4	1	1	B/C
r – future auxiliary (6th dynasty onwards)	3	4	1	1	D/E
iw=f sḏm	N/A	N/A	N/A	N/A	N/A

Table 28 – Stages reached by each form of r in each of the four linguistic shift chains and overarching adposition-to-TAM chain.

tw=i m nʿy r sḏm also experienced the loss of *r*, as well as the loss of *m*. In this case the loss of each of these from the written form of *tw=i m nʿy r sḏm* likely reflected loss from the spoken form, with neither reappearing in writing at a later stage, unlike *r* in *iw=f r sḏm*. The omission of one or both of these elements can be seen already in Late Egyptian texts, showing that the reduction in form typically observed as a later stage of grammaticalisation had actually occurred very early in the development of this linguistic form (Grossman et al. 2014a:100). The loss of *m* from *tw=i m nʿy r sḏm* has been attributed to the assimilation of *m* and the initial consonant of *nʿy*, *n* (Wente 1959:95). Winand noted that in the Late Egyptian present construction *m* was rarely omitted (Winand 1992:421), although it was lost from the present construction by the 22nd dynasty (Winand 1992:422)[130], and in cases where *m* was omitted the initial consonant of the content verb was always nasal (Winand 1992:422), as it is in *nʿy*. Thus within *tw=i m nʿy r sḏm*, since this linguistic form partially developed from the present *tw=i m sḏm*, *m* could be omitted.

(295) *yɜ* *wn=f* *nʿy* *smy*
PART IMPF=3MSG go.INF/AUX.FUT report.INF
Indeed, he was going to report.
P. Strassburg 24 V, 5 (Grossman et al. 2014a:97)
21st dynasty

(296) [....] *st* *nʿy* *r* *mšʿ* [....]
3PL go.INF/AUX.FUT PURP travel.INF
....they are going to travel....
P. Strassburg 24 V, verso, 2 (Černý & Groll 1993:339)
21st dynasty

[130] See pg.100.

From the linguistic form *tw=y n3 sḏm* attested in Demotic, it is evident that the auxiliary *n3* has undergone several changes from *nʿy* in *tw=i m nʿy r sḏm*. The loss of *r* in particular had left *nʿy* as the only future referring element within the construction, and it was consequently further auxiliarified to reflect this, as shown in table 29.

Stage 1 c.1050BCE		Stage 2 c.600BCE		Stage 3 c.100CE
m + INFINITIVE *m nʿy*	→ →	STATIVE (*in-*)*nʿ*(.*k*)	→ →	FUTURE AUXILIARY *nʿ*/*n3*

Table 29 – Reanalysis of nʿy as a future auxiliary. From Grossman et al. (2014a:122).

The development from *nʿy* to *n3* began with the reanalysis of *nʿy* from an infinitive within *tw=i m nʿy r sḏm* into a stative, which can be seen in Demotic texts. Grossman et al. noted several possible orthographies of this form, shown in table 30.

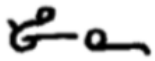
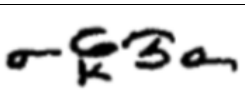
Texts	**Transliteration**	**Writing**
P. Mag. LL	*n-nʿ / n-n*(ʿ).*k*	
O. MH 154; Setne I; Inaros	*nʿ.k*	
P. Magical LL; O. MH 4038	*in-nʿ / in-n*(ʿ).*k*	
Inaros; P. Mag. LL; Setne II	*in-nʿ.k*	

Table 30 – Writings of in-nʿ.k in Demotic texts. From Grossman et al. (2014a:107).

Within these writings, the initial grapheme *in-* seems to indicate the derivation of this form from *m* + infinitive (Grossman et al. 2014a:119), while the grapheme *.k* likely graphemically reflects the contemporary understanding of this form as a stative (Grossman et al. 2014a:119). The writings of this element without the initial *in-* show the results of the loss of *m* from this form, while those with *in-* show that *in-nʿ.k* was still recognised to have originated from *nʿy* in the form *m* + infinitive, and that the loss of *m* was still ongoing at this stage.

in-nʿ.k was then further reanalysed as the auxiliary *n3*, the various orthographies of which are shown in table 31.

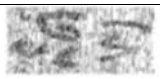
Texts	Transliteration	Writing
O. MH 4038	*nʿ*	
Graffiti of the Dodecaschenus/ ODN P. Vienna 6920/6922	*n3w*	
P. Mag. LL	*n3e*	
Graffiti/St. Aswan 1057	*n3*	

Table 31 – Writings of n3 in Demotic texts. From Grossman et al. (2014a:107).

These writings show the completed loss of *m*, as well as the development of *nʿy* into a non-etymological writing, which suggests that the link between the future auxiliary *n3* and the lexical meaning of its earlier form *nʿy*, 'to go', was no longer perceived by language users (Grossman et al. 2014a:110). This use of a non-etymological writing was not unique within Demotic, since within the Roman period etymological writings were sometimes replaced by a non-etymological orthography which emphasised contemporary phonology over historical spelling (Depauw 1997:26).

The loss of any association of *n3* with the verbal lexeme *nʿy* shows the advancement of *n3* to stage five of the decategorialisation chain, in which the auxiliary had lost its remaining verbal properties (Heine 1993:55). *n3* had also reached the final stage of the desemanticisation chain, having acquired a fully grammatical function (Heine 1993:54), as can be seen from the fact that *n3* is the only element within *tw=y n3 sḏm* able to express futurity. Furthermore, in stage three of the desemanticisation chain, the referent of the subject is no longer restricted to being willful/human (Heine 1993:54), as can be seen in from the subject *t3 mn t3 mdt*, 'anything', in Ex.297.

(297) *iw=f* *ḫpr* *t3 mn t3 mdt* *n3e* *ḫpr*
COND=3MSG happen.INF anything AUX.FUT happen.INF
If it happens that anything is going to happen....
Magical, 8.13-14 (Johnson 1976:97)
c.200-299CE

The development of *nʿy* to the non-etymological form *n3* also shows its progression along the erosion chain, since *n3* was no longer in the full phonological form of *nʿy* (Heine 1993:56), although since it cannot be seen from the written language whether *n3* was able to carry stress at this stage it is not clear whether *n3* had completed this chain. However, *n3*

remained in stage one of the cliticisation chain, since it remained an independent word (Heine 1993:55). Consequently, since cliticisation is typically triggered in stage E of the verb-to-TAM chain (Heine 1993:63), *n3* cannot be fully categorised any further than stage D. However, its progression along the remaining three chains ensures that it exhibits features of stage E, having many characteristics of grammatical markers (Heine 1993:63).

	Desemanticisation	Decategorialisation	Cliticisation	Erosion	Verb-to-TAM
nʿy – verbal lexeme	1	1	1	1	A
nʿy – future auxiliary	2	2	1	1	B
n3 – future auxiliary	3	5	1	2/3	D/E

Table 32 – Stages reached by each form of nʿy and n3 in each of the four linguistic shift chains and overarching verb-to-TAM chain.

Despite the extensive auxiliarification of *n3*, use of the linguistic form *tw=y n3 sḏm* is not frequently attested from Demotic (Grossman et al. 2014a:109), and *iw=f r sḏm* remained the most common form of the future construction. The future *sḏm=f* also remained in use in Demotic, also its usage was becoming rarer. Within Demotic the future *sḏm=f* is only commonly attested from archaic expressions such as oaths (Johnson 1976:221).

Unlike in *iw=f r sḏm*, where the orthographic loss of *r* was never completed, the loss of *m* and *r* from *tw=i m nʿy r sḏm* was completed. The loss of these two elements caused an increase in syntheticity in *tw=y n3 sḏm* from *tw=i m nʿy r sḏm*, and ensured that *tw=y n3 sḏm* was equally as synthetic as *iw=f r sḏm* in terms of the quantity of elements each contained. However, at this stage *iw=f r sḏm* remained the most common means of expressing the future, thus it was the increase in syntheticity in cases of *iw=f r sḏm* in which *r* was omitted, forming *iw=f sḏm*, which caused the slight increase in syntheticity in the future construction, rather than the increase in syntheticity in the formation of *tw=y n3 sḏm*.

By Coptic the future *sḏm=f* had predominantly ceased to be used, surviving only in causative verbs descended from *rdi* + future *sḏm=f*. *iw=f r sḏm*, in Coptic written **ϵqϵϹѠTM**, remained in use, but it was *tw=y n3 sḏm*, written **ϥNⲁϹѠTM** in Coptic, which had become the most common expression of the future construction at this stage.

The descendant of *iw=f r sḏm*, ϵqϵcωτм, shows the slight phonological reduction of *iw* to ϵ. ϵqϵcωτм also shows that the orthographic loss of *r*, which began in Late Egyptian but slowed in Demotic, had not been completed in the form used with pronominal subjects. Instead a phonologically reduced form of *r*, ϵ, reflecting its reduction from consonant to vowel, was obligatory in the writing of this form with pronominal subjects in Coptic, situated between the subject and content verb as the earlier *r* was. This visible vocalisation of *r* as ϵ shows that the earlier orthographic loss of *r* indicated loss of consonantal value rather than loss from the spoken form of the construction. The reappearance of this element in writing may be due to the consistent means of writing vowels in Coptic, as the lack of a regular means of expression of vowels in earlier scripts contributed to its possible omission.

(298) ϵγϣan-ⲗмϵⲗϵi ϵ-к-ϵ-nϵϩcϵ ммo-oγ
COND.3PL-be_careless.INF AUX.FUT-2MSG-AUX.FUT-awaken.INF OBJ-3PL
ϩм п-nωмoc ϵ-п-noγтϵ
in the-law in_respect_to-the-god
....if they are careless, you shall awaken them in the law of God.
Pachomius, 94.15-16 (Reintges 2004:269)
c.800-899CE

(299) хϵкac nтoq ϵ-q-ϵ-oγωnϩ ϵвoⲗ
so_that 3MSG AUX.FUT-3MSG-AUX.FUT-become_manifest.INF out
ϩn n-ϵт-cотп
in the-REL-be_excellent.STV
....so that he would become manifest in what is excellent....
Antony, 4
822-823CE

In contrast to the form used with pronominal subjects, in the form used with nominal subjects, ϵρϵN cωτм, the orthographic loss of *r* was completed. Within ϵρϵN cωτм the initial ϵρϵ developed from *ir*, the allomorph of *iw* used before nominal subjects in Late Egyptian and Demotic, and any descendant of *r* would be expected to appear between the subject and content verb, as it did in the earlier *ir* N *r sḏm*. However this was not the case, and no form of *r* was present, indicating its loss from the spoken language in this context.

(300) ϵρϵ-п-хoϵic тωωвϵ nⲁ-q кⲁтⲁ-nϵ-q-ϩвнγϵ
AUX.FUT-the-lord repay.INF DAT-3MSG according_to-POSS-3MSG-works
The lord shall repay him according to his works.
2. Tim., 4.14 (Layton 2000:264)
c.500-599CE

(301) ⲧⲁⲣ-ⲛ-ⲟⲱ ϩⲙ-ⲡ-ⲛⲟⲃⲉ
AUX.FIN-1PL-remain.INF in-the-sin
ⲭⲉ ⲉⲣⲉ-ⲧⲉ-ⲭⲁⲣⲓⲥ ⲣϩⲟⲩⲟ
PART AUX.FUT-the-grace be_all_the_more.INF
Will we remain in sin, so that grace shall be all the more?
Rom., 6.1 (Layton 2000:265)
c.500-599CE

ⲉⲩⲉⲥⲱⲧⲙ and ⲉⲣⲉN ⲥⲱⲧⲙ also indicate that coalescence had occurred in each of these linguistic forms from their respective predecessors *iw=f r sḏm* and *ir* N *r sḏm*. For ⲉⲩⲉⲥⲱⲧⲙ this had involved the coalescence of the future auxiliary *r* to the already inseparable group of the future auxiliary *iw* and the pronominal subject, each of which were non-root morphemes, which ensured that this coalescence involved the process of compounding (Heine & Reh 1984:32). Furthermore, the content verb was also connected to the remainder of the construction through coalescence, which in this case involved affixation, since the content verb involved a root morpheme, while the remainder of the construction was composed of non-root morphemes (Heine & Reh 1984:32). The consequent inseparability of any element of ⲉⲩⲉⲥⲱⲧⲙ can be observed from the inability of external elements to occur between the elements of the construction, as with the particle ⲇⲉ in Ex.302.

(302) ⲉ-ⲕ-ⲉ-ⲟⲩⲱⲙ ⲇⲉ
AUX.FUT-2MSG-AUX.FUT-eat.INF PART
ⲛ-ⲛ-ⲉⲛⲧ-ⲁ-ⲡ-ⲛⲟⲩⲧⲉ ⲧⲛⲛⲟⲟⲩ-ⲥⲟⲩ ⲛⲁ-ⲕ
OBJ-the-REL-AUX.PST-the-god send.INF-3PL DAT-2MSG
You should eat those which God sent to you.
AP20 (Reintges 2004:268)
c.300-499CE

This coalescence also shows the development of the auxiliary from an independent word as *r* to an affix as ⲉ, thus reaching the final stage of the cliticisation chain (Heine 1993:56). Furthermore, the writing of this element as ⲉ shows a reflection in the written form of its phonological reduction from a consonant to a vowel. This, combined with the inability of any Coptic verbal prefix such as this element to carry stress (Reintges 2004:34), shows that this element had also reached the final stage of the erosion chain (Heine 1993:56). By this stage this element had also completed the decategorialisation chain, with ⲉ having lost all of its earlier prepositional properties. Consequently, ⲉ may be categorised in stage G of the adposition-to-TAM chain, since it had reached the final stage of each of the individual linguistic shift chains, with the desemanticisation chain having been completed at an earlier

stage[131], and thus had become 'purely a grammatical marker reduced typically to a monosyllable affix unable to carry distinctive tone or stress' (Heine 1993:65).

However, since this element had been lost in the form used with nominal subjects, in ϵⲣϵN ⲥⲱⲧⲙ it may no longer be categorised within the adposition-to-TAM chain, since it no longer existed.

	De-semanticisation	De-categorialisation	Cliticisation	Erosion	Adposition-to-TAM
r – prepositional lexeme	1	1	1	1	A
r – future auxiliary (5th dynasty)	2	4	1	1	B/C
r – future auxiliary (6th dynasty onwards)	3	4	1	1	D/E
iw=f sḏm	N/A	N/A	N/A	N/A	N/A
ϵ – future affix	3	5	3	3	G
ϵⲣϵN ⲥⲱⲧⲙ	N/A	N/A	N/A	N/A	N/A

Table 33 – Stages reached by each form of r and ϵ in each of the four linguistic shift chains and overarching adposition-to-TAM chain.

The development of ϵⲣϵN ⲥⲱⲧⲙ involved the coalescence of the subject with the future auxiliary. Since the future auxiliary was comprised of a non-root morpheme, but any nominal subject involved at least one root morpheme, this involved the process of affixation (Heine & Reh 1984:32). However, unlike ϵⲫϵⲥⲱⲧⲙ , the development of ϵⲣϵN ⲥⲱⲧⲙ did not involve the coalescence of the content verb, which consequently remained separable, as shown by the placement of the adverb ⲭⲱ in Ex.303.

(303) ⲭⲉⲕⲁⲁⲥ ϵⲣϵ-ⲡ-ⲁ-ⲭⲏⲧ ⲭⲱ ⲙⲧⲟⲛ
so_that AUX.FUT-POSS-1SG-heart also become_at_rest.INF
....so that my heart shall also be at rest.
Phil., 2.19 (Wilson 1970:29)
c.500-599CE

In each of these forms, the word internal morphemes boundaries remained visible, thus whilst coalescence had begun, its continuum had not been completed with the process of fusion (Croft 2003:256). However, the coalescence which did occur caused an increase in

[131] See pg.140-141.

the syntheticity of this linguistic form, due to the increased interdependency between its elements.

A similar process of coalescence is also visible in ⲫⲛⲁⲥⲱⲧⲙ, in that the form used with pronominal subjects experienced the compounding of the subject and following future auxiliary, as well of the affixation of these to the content verb (Ex.304). However, in the form used with nominal subjects it was the auxiliary and content verb which underwent affixation, while the subject remained separable (Ex.305). This is different from all other constructions discussed so far, in which coalescence in forms with nominal subjects occurred between the auxiliary and subject, with the content verb remaining separable. Coalescence was able to occur between the auxiliary and content verb in this linguistic form due to the position of the auxiliary being after the subject, rather than before. This contrasts with the position of the auxiliary in all constructions discussed so far. That the auxiliary remained involved in coalescence while the subject was exempt adds to evidence that it was the auxiliary which provided the nucleus for coalescence in Egyptian verbal constructions[132].

(304) ⲧ(ⲛ)-ⲛⲁ-ⲁϩⲉⲣⲁⲧ-ⲛ ⲅⲁⲣ ⲑⲏⲣ-ⲛ ⲉ-ⲡ-ⲃⲏⲙⲁ ⲙ-ⲡ-ⲛⲟⲩⲧⲉ
1PL-AUX.FUT-stand_at.INF-1PL PART all-1PL at-the-tribunal GEN-the-god
For all of us will stand at the tribunal of God.
Rom., 14.10 (Wilson 1970:67)
c.500-599CE

(305) ⲟⲩⲛ-ϩⲁϩ ⲅⲁⲣ ⲛⲁ-ⲉⲓ ϩⲙ ⲡ-ⲁ-ⲣⲁⲛ
INDEF-many PART AUX.FUT-come.INF in POSS-1SG-name
For many will come in my name....
Mark, 13.6 (Layton 2000:233)
c.450-499CE

As with ⲉⲫⲉⲥⲱⲧⲙ , the visibility of the word internal morpheme boundaries within ⲫⲛⲁⲥⲱⲧⲙ shows that the continuum of coalescence had not been fully completed (Croft 2003:256). However, the compounding and affixation which did occur in ⲫⲛⲁⲥⲱⲧⲙ increased the interdependency of its elements, and subsequently its syntheticity. Moreover, since ⲫⲛⲁⲥⲱⲧⲙ had become the most common linguistic form of the future construction within Coptic, the syntheticity of the future construction was also increased.

Also similar to ⲉⲫⲉⲥⲱⲧⲙ, the coalescence which occurred in the development of ⲫⲛⲁⲥⲱⲧⲙ involved the auxiliary becoming an affix. This shows an advancement along the cliticisation chain from the earlier status of both *nʿy* and *nꜣ* as independent words, with the affix ⲛⲁ

[132] See pg.52.

reaching the third and final stage of this chain (Heine 1993:56). Furthermore, as with all Coptic verbal prefixes (Reintges 2004:34), ⲛⲁ was unable to carry stress, and thus had certainly reached the final stage of the erosion chain by this time. This marks the completion of all four linguistic shift chains by this auxiliary, with the completion of the desemanticisation and decategorialisation chains having been achieved by at earlier stages[133]. Consequently, ⲛⲁ may be categorised within stage G of the overall verb-to-TAM chain (Heine 1993:65).

	Desemanticisation	Decategorialisation	Cliticisation	Erosion	Verb-to-TAM
nʿy – verbal lexeme	1	1	1	1	A
nʿy – future auxiliary	2	2	1	1	B
nꜣ – future auxiliary	3	5	1	2/3	D/E
ⲛⲁ – future affix	3	5	3	3	G

Table 34 – Stages reached by each form of nʿy, nꜣ and ⲛⲁ in each of the four linguistic shift chains and overarching verb-to-TAM chain.

ⲫⲛⲁⲥⲱⲧⲙ also shows a change in the form of the pronominal subjects themselves, identical to that which occurred in the present construction[134], which had provided the source construction for the initial linguistic form from which ⲫⲛⲁⲥⲱⲧⲙ developed, *tw=i m nʿy r sḏm*. This subsequently caused a decrease in the paradigmatic variation in syntheticity in the paradigm of ⲫⲛⲁⲥⲱⲧⲙ, which it had inherited from the present construction[135].

ⲫⲛⲁⲥⲱⲧⲙ, was more synthetic than its counterpart ⲉⲫⲉⲥⲱⲧⲙ since, whilst each had equal levels of separability between their elements, ⲉⲫⲉⲥⲱⲧⲙ contained two future markers, as well as the subject and content verb, whilst ⲫⲛⲁⲥⲱⲧⲙ contained only one future marker with its subject and content verb, and thus contained less elements. However, in the forms used with nominal subjects, ⲉⲣⲉN ⲥⲱⲧⲙ contained only one future marker, following the completed loss of *r*, and thus contained the same quantity of elements as Nⲛⲁ ⲥⲱⲧⲙ.

[133] See pg.155-156.
[134] See pg.102.
[135] See pg.147.

Despite this, the replacement of *ỉw=f r sḏm* or ⲉⲣⲉⲥⲱⲧⲙ as the most common future form by ⲣⲛⲁⲥⲱⲧⲙ shows an increase in syntheticity due to the higher level of syntheticity in its form used with pronominal subjects. The various instances of coalescence which occurred in the developments of each of these linguistic forms also contributed to the gradual syntheticisation of the future construction, each causing an increase in the interdependency of the elements of the construction.

2.h.iii. Conclusions

Similar to the development of the present construction, the development of the future construction shows involvement of the auxiliarification of a preposition within the analyticisation stage, and its subsequent involvement in syntheticisation. As with the auxiliarification of *ḥr* in the present construction, the diachronic development of the future construction following the initial auxiliarification of *r* shows several similarities to constructions which used auxiliaries of verbal lexical origin, such as the auxiliarification of *r* causing an increase in analyticity, its completion of the desemanticisation, decategorialisation, cliticisation and erosion chains, and the coalescence visible from the linguistic forms attested in Coptic.

Furthermore, the development of the future construction shows the characteristic of layering across a remarkably long time period, with the layering of the future *sḏm=f* and *ỉw=f r sḏm* lasting from the 5th dynasty until the end of the Demotic language stage, a period of between 2700 and 2900 years. This shows the longest layering of two linguistic forms of a construction across all Egyptian verbal constructions[136].

[136] See 5.a.i.

2.i. Negative Future

n sḏm=f > *nn sḏm=f* >> *bn iw=f r sḏm* > *bn iw=f sḏm* > ⲛⲛⲉϥⲥⲱⲧⲙ >> ⲛϥⲛⲁⲥⲱⲧⲙ ⲁⲛ (*nn iw=f r sḏm* >)

2.i.i. First Analyticisation (*n sḏm=f* > *nn sḏm=f* >> (*nn iw=f r sḏm* >) *bn iw=f r sḏm*)

The earliest attested linguistic form of the negative future construction was *n sḏm=f*, which was used in Old Egyptian to negate both the future *sḏm=f* and *iw=f r sḏm* (Edel 1955/1964:561). *n sḏm=f* was formed from the negative marker *n* followed by the most common contemporary expression of the future construction, the future *sḏm=f*, which involved the content verb, inflected for future tense, followed by the subject.

(306) *n* *mt=f*
NEG die.FUT=3MSG
....he will not die.
PT1810c^{N} (Edel 1955/1964:561)
6th dynasty, Pepy II

By Middle Egyptian at the latest, the most common linguistic form of the negative future construction had become *nn sḏm=f*, through the replacement of the negative marker *n* with the negative marker *nn*[137]. Within *nn sḏm=f*, the negative marker was orthographically, and likely phonologically, longer than the negative marker in *n sḏm=f*. In the corpus used for this thesis the earliest attestation of *nn sḏm=f* is from the First Intermediate Period (Ex.307).

(307) *nn* *di(=i)* *nḳm=f* *n* *nkmt* *nbt*
NEG allow.FUT=1SG suffer.FUT=3MSG because_of affliction any
....I will not allow that he suffer because of any affliction.
OI E13945, 2
First Intermediate Period

(308) *nn* *iwt* *iyt* *m* *ḫt=k*
NEG come.FUT trouble upon mast=2MSG
No trouble will come upon your mast.
Peasant B1, 88
12th dynasty, c. Amenemhat III

[137] The development from *n sḏm=f* to *nn sḏm=f*, as well as later developments within the negative future construction, shows the occurrence of the Croft cycle of negation (Croft 1991). However, this had no effect on the analyticity or syntheticity of the construction, so will not be discussed in detail in this thesis.

(309) *in* *nn* *rf* *di=k* *sw3=i*
PART NEG PART allow.FUT=2MSG pass.FUT=1SG
Will you not allow me to pass?
Peasant R, 9.3 (Gardiner 1957:186)
Early 13th dynasty

nn sḏm=f was limited to the negation of future events (Gardiner 1957:377) and, like *n sḏm=f* in Old Egyptian, was used to negate not only the isomorphic affirmative, the future *sḏm=f*, but also *iw=f r sḏm*.

(310) *iw=f* *r* *i.tt* *t3w* *rsyw*
AUX=3MSG AUX.FUT conquer.INF lands southern
nn *k3=f* *ḫ3swt* *mḥtwt*
NEG consider.FUT=3MSG deserts northern
He shall conquer the southern lands; he shall not consider the northern deserts....
MES, 21.13-22.1
12th dynasty, Amenemhat III

Within the 18th dynasty (Vernus 1990:130), a new linguistic form used to express the negative future is first attested. This linguistic form, *nn iw=f r sḏm*, was the isomorphic negation of the affirmative future *iw=f r sḏm*.

(311) *mt* *nn* *iw=i* *r* *w3ḥ=t*
look NEG AUX.FUT=1SG AUX.FUT leave.INF=2SG
Look, I shall not leave you.
Paheri, pl.7, 3rd register (Gardiner 1957:389)
18th dynasty, Thutmose III

nn iw=f r sḏm can be seen to have been used interchangeably with *nn sḏm=f*. For example, Ex.312 and Ex.313 show the use of these forms within the same syntactic context, in the pattern 'if X happens then she will not give birth', with the same verb and in the same text. This particular text 'gives some strange interchanges of classical and slightly younger forms in parallel constructions' (Iversen 1939:5), and may be considered as an example of the transition between late Middle Egyptian and early Late Egyptian.

(312) *nn* *ms=s*
NEG give_birth.FUT=3FSG
....she will not give birth....
P. Carlsberg 8, b.3
19th Dynasty

(313) [....] *nn* *iw=s* *mst* [....]
NEG AUX.FUT=3FSG give_birth.INF
....she shall not give birth....
P. Carlsberg 8, a.5
19th Dynasty

Edel (1955/1964:476) quoted[138] one late Old Egyptian example which shows the linguistic form *nn sw r sḏm* (Ex.314).

(314) *ḏr-ntt* *n{n}* *ḫpr* *mrt(=i)* *nn* *sw* *r* *ḫpr*
since NEG happen.PST like=1SG NEG 3MSG AUX.FUT happen.INF
Since my like has never been and never shall be.
Ankhtifi, II.α.2 (Edel 1955/1964:476)
10th dynasty

This may be considered as an early attempt at a morphologically corresponding negation for the affirmative *iw=f r sḏm*, which Edel (1955/1964:476) suggests is from a provincial dialect. Although it is not attested, it is possible that use of this negation continued into Middle Egyptian, with examples of *nn sw r sḏm* simply not being among the surviving evidence. However, it is clear that *nn sḏm=f* was the primary negation for both the future *sḏm=f* and *iw=f r sḏm* at this stage, and if *nn sw r sḏm* was in use in either the spoken or written language throughout Middle Egyptian it was certainly not as commonly used as *nn sḏm=f*. Use of the attested negation *nn iw=f r sḏm*, which possibly only emerged after *iw* had become obligatory in the affirmative *iw=f r sḏm* (Vernus 1990:130), was rare within late Middle Egyptian (Loprieno 1995:181), and thus *nn sḏm=f* continued as the primary future negation.

As the isomorphic negation of the affirmative *iw=f r sḏm*, the development of *nn iw=f r sḏm* from the 18th dynasty shows the same auxiliarification of the prepositional lexeme *r*. Consequently the auxiliary *r* in this negative linguistic form occupies the same position in the adposition-to-TAM chain (Heine 1993:53-65) as the auxiliary *r* in the contemporary corresponding affirmative linguistic form[139].

	De-semanticisation	De-categorialisation	Cliticisation	Erosion	Adposition-to-TAM
r – prepositional lexeme	1	1	1	1	A
r – negative future auxiliary	3	4	1	1	D/E

Table 35 – Stages reached by each form of r in each of the four linguistic shift chains and overarching adposition-to-TAM chain.

[138] Edel (1955/1964:476) transliterated this example as *ḏr ntjt n ḫpr mrtjj n sw jr ḫpr*, stating the latter negation in this sentence to be the form *n sw r sḏm*, which he claims to be unique, and not recurring in Middle Egyptian. However, the text shows the writing *nn* () for each of the two negations here, and thus shows an early example of the linguistic form *nn sw r sḏm*.
[139] See pg.139-142.

The 18th dynasty also provides the earliest attestation within the corpus used for this thesis of *bn sḏm=f*, the orthographic successor of *nn sḏm=f*, which was used throughout Late Egyptian. *bn sḏm=f* shows the orthographic change of *n* to the phonologically equivalent (Clère 1956) grapheme *b*.

(315) *bn* *di=i* *pꜣ* *i-ir* *pꜣ* *nty* *mi-ḳd=i*
NEG give.FUT=1SG the REL-do.PST the REL like=1SG
I cannot give that which the one who was like me did....
RAD, 56.4-5
20th dynasty, Ramesses III, year 29

It is possible to see the use of *nn sḏm=f* and *bn sḏm=f* within the same text (Ex.316-317), showing an overlap in the use of these two orthographies of this linguistic form. Use of both orthographies continued until at least the 19th dynasty, during which use of *nn sḏm=f* is still visible (Neveu 2015:80 n.175).

(316) *is* *bn* *šm* *ssm* *m-sꜣ* [*ssm*]
PART NEG go.FUT horse after horse
Will horse not go after horse?
Urk. IV, 650.3
18th dynasty, Thutmose III

(317) *nn* *di=i* *pr* [*mšʿ=i* *n* *nḫt*]
NEG allow.FUT=1SG set_out.FUT army=1SG GEN strength
ḥr-ḫꜣt *ḫm=i* *m* [*st* *tn*]
before majesty=1SG from place this
I will not allow my army of strength to set out before my majesty from this place.
Urk. IV, 652.6-7
18th dynasty, Thutmose III

The orthographic change from *n* to *b* also occurred in the first grapheme of *nn iw=f r sḏm*, resulting in the orthography *bn iw=f r sḏm*. Within Late Egyptian this linguistic form replaced *nn sḏm=f* as the most common means of expressing the negative future.

(318) *bn* *iw=n* *r* *iy*
NEG AUX.FUT=1PL AUX.FUT return.INF
We shall not return.
RAD, 55.9-10
20th dynasty, Ramesses III, year 29

(319) *bn* *iw=w* *r* *pš=w*
NEG AUX.FUT=3PL AUX.FUT share.INF=3PL
....they shall not share them.
Naunakhte, 4.12
20th dynasty, Ramesses V, year 3

Similar to the corresponding affirmative form *iw=f r sḏm*[140], within Late Egyptian *nn iw=f r sḏm* shows the use an allomorph of *iw*, *ir*, before nominal subjects.

(320)

bn	*ir*	*pȝ*	*wr*	*ꜥȝ*	*n*	*ḫtȝ*	*r*	*šsp=w*
NEG	AUX.FUT	the	chief	great	GEN	Hatti	AUX.FUT	receive.INF=3PL

The great chief of Hatti shall not receive them.
K*RI* II, 229.4 (Neveu 2015:77)
19th dynasty, Ramesses II, year 21

As with *nn sḏm=f* and *bn sḏm=f*, use of the contemporary orthographies of this linguistic form, *nn iw=f r sḏm* and *bn iw=f r sḏm*, can also be seen within the same text, as in Ex.321, in which they are in particularly close proximity.

(321)

ḫr	*nn*	*iw=i*	*r*	*ḏd=f*	*n*	*wꜥ*
PART	NEG	AUX.FUT=1SG	AUX.FUT	say.INF=3MSG	DAT	one
ḫr	*bn*	*i[w=i]*	*r*	*dit*	*pr=f*	
PART	NEG	AUX.FUT=1SG	AUX.FUT	allow.INF	go_out.FUT=3MSG	
m	*r=i*	*n*	*rmt*	*nbt*		
from	mouth=1SG	DAT	person	any		

Now I shall not say it to anyone. Now I shall not let it go out from my mouth to any person.
LES, 13.2-3
19th dynasty

The replacement of *nn/bn sḏm=f* as the most common form of the future construction by *nn/bn iw=f r sḏm* caused an increase in the analyticity of the negative future construction. This was due to the additional presence of *iw* and *r* in the latter linguistic form, which ensured that it contained a greater quantity of elements than *nn/bn sḏm=f*. The content verb was also more autonomous in nn/*bn iw=f r sḏm*, due to its form as an infinitive rather than being inflected for future tense, and the movement of the subject to be dependent on the auxiliary instead of the content verb.

2.i.ii. Syntheticisation (*bn iw=f r sḏm* > *bn iw=f sḏm* > ⲛⲛⲉⲫⲥⲱⲧⲙ)

Within Late Egyptian the linguistic form *bn iw=f r sḏm* began to experience the loss of *r*, with the percentage of examples in which *r* was omitted from writing increasing steadily over the Late Egyptian language stage (Winand 1992:509-510). This is similar to the orthographic loss of *r* in the isomorphic affirmative *iw=f r sḏm*[141], although in that case the presence of a phonologically reduced descendant of *r* within the Coptic affirmative future ⲉⲫⲉⲥⲱⲧⲙ suggests that *r* was retained in the spoken form of *iw=f r sḏm*. In contrast, the

[140] See pg.145.
[141] See pg.150-153.

absence of any form of *r* in the Coptic form of the negative future indicates that *r* was lost from both the written and spoken forms of the construction some time before Coptic.

(322) *bn* *ir* *pȝy=i* *sn* *dit* *mdw=tw* *m-di=i*
NEG AUX.FUT POSS=1SG brother let.INF quarrel.FUT=IMPRS with=1SG
My brother shall not let anyone quarrel with me.
P. BM EA 10052, 6.10
20th dynasty, Ramesses XI, year 19

(323) *bn* *iw=i* *rḫ* *ḏdḥ* *pȝ* *ipwty* *n* *imn*
NEG AUX.FUT=1SG be_able.INF imprison.INF the messenger GEN Amun
I shall not be able to imprison the messenger of Amun....
LES, 74.13
21st dynasty

The loss of *r* was not completed within Late Egyptian, although *r* is almost never attested in late 20th dynasty texts (Wente 1961:122). The presence of *r* in a limited number of examples suggests it remained optional, although the writing with *r* omitted was evidently preferred.

(324) *bn* *iw=i* *r* *gr* *n=k* *ḥr* *tȝy* *mdt*
NEG AUX.FUT=1SG AUX.FUT be_silent.INF DAT=2MSG about this matter
I shall not be silent to you about this matter....
LRL, 74.2
20th dynasty

The omission of *r* can also be seen in *nn iw=f r sḏm*, showing that this loss affected both orthographies of this linguistic form, rather than being limited to the newer writing *bn iw=f r sḏm*.

(325) *nn* *iw=i* *ʿḥʿ* *m* *st* *iw=k* *im=s*
NEG AUX.FUT=1SG stay.INF in place CIRC=2MSG in=3FSG
....I shall not stay in a place which you are in.
LES, 17.10-11
19th dynasty

Within Demotic the linguistic form *bn sḏm=f* was no longer in use, although the writing *bn iw sḏm=f* can be seen in *Onchsheshonqy* (Johnson 1976:171). *bn iw sḏm=f* has been described as an 'odd form' (Johnson 1976:172), and may have resulted through analogy from the considerably more common *bn iw=f r sḏm*.

(326) *bn* *iw* *sḥnṯ=k* *ḏnȝṯ*
NEG AUX.FUT order.FUT=2MSG laziness
bn *iw* *di* *n=k* *ʿy* *ḥet* *trp*
NEG AUX.FUT give.FUT DAT=2MSG greatness belly food
You will not order laziness. Greed will not give you food.
Onchsheshonqy, 15.19-20 (Johnson 1976:171)
Late Ptolemaic

The orthography *nn iw=f r sḏm* was also no longer in use within Demotic, and in the surviving orthography *bn iw=f r sḏm r* was typically omitted (Johnson 1976:169), giving the linguistic form *bn iw=f sḏm*.

(327) *bn* *iw=y* *ḥtb=k*
NEG AUX.FUT=1SG kill.INF=2MSG
bn *iw=y* *di* *ḥtb=w* *ṯ=k*
NEG AUX.FUT=1SG let.INF kill.FUT=3PL OBJ=2MSG
I shall not kill you. I shall not let them kill you.
Mythus, 15.30 (Johnson 1976:172-174)
c.100-199CE

However, in some Demotic examples *r* was written, showing that the loss of this element from *bn iw=f sḏm* had still not been fully completed.

(328) *r-ire* *twe* *ḥpr* *mtw=k* *gm* *pȝ* *sym*
COND dawn come.INF AUX.CONJ=2SG find.INF the plant
iw=f *šhlʿlṯ* *bn* *iw=s* *r* *iwr*
CIRC=3MSG be_withered.STV NEG AUX.FUT=3FSG AUX.FUT conceive.INF
If dawn comes and you find the plant withered, she shall not conceive.
Magical, verso, 5.6-7 (Johnson 1976:175)
c.200-299CE

Despite this, the preference for the omission of *r* from *bn iw=f r sḏm* ensured that the most commonly used linguistic form of the future construction in Demotic was *bn iw=f sḏm*. This linguistic form shows an increase in syntheticity from its predecessor *bn iw=f r sḏm*, due to the absence of *r* ensuring that it contained a lower quantity of elements. However, since the loss of *r* was not fully complete, this increase in syntheticity had not spread across every use of this construction.

Within the subsequent development of the linguistic form of the negative future construction used in Coptic, **ⲛⲛⲉⲕⲥⲱⲧⲙ**, the loss of *r* was completed. This is similar to the form of the affirmative future construction used with nominal subjects, **ⲉⲣⲉⲛ ⲥⲱⲧⲙ**, in which no remnant of *r* featured. However, the absence of any remnant of *r* in **ⲛⲛⲉⲕⲥⲱⲧⲙ** contrasts with the form of the affirmative construction used with pronominal subjects, **ⲉⲕⲉⲥⲱⲧⲙ** in which *r* was not fully lost, but instead reappeared in a widespread use as the second **ⲉ**[142] in **ⲉⲕⲉⲥⲱⲧⲙ**. It is possible that this contrast developed since **ⲛⲛⲉ** within the negative future unambiguously differentiated **ⲛⲛⲉⲕⲥⲱⲧⲙ** from other linguistic forms, but without the second **ⲉ**, the future **ⲉⲕⲉⲥⲱⲧⲙ** would have appeared as **ⲉⲕⲥⲱⲧⲙ**, which is morphologically indistinct from the circumstantial present and 2nd present.

[142] See pg.157.

(329) ⲛⲛⲉ-ⲡ-ϫⲁϫⲉ ϭⲛ-ⲗⲁⲁⲩ ⲛ-ⲫⲱⲃ
AUX.NEG.FUT-the-enemy find.INF-any GEN-thing
....the enemy shall not find anything....
Antony, 65
822-823CE

(330) ⲛⲛⲉ-ⲕ-ⲣⲓⲕⲉ ⲟⲩⲇⲉ ⲛⲛⲉ-ⲕ-ⲫⲉ
AUX.NEG.FUT-2MSG-turn_away.INF nor AUX.NEG.FUT-2MSG-fall.INF
You shall not turn away, nor shall you fall.
Onnophrios, 217.14 (Reintges 2004:358)
c.975-1005CE

Since *r* no longer existed within this construction, it may no longer be categorised within the adposition-to-TAM chain. Consequently, the auxiliary *r* in the negative future never progressed beyond stage D of the chain, which it had reached in the form *nn ỉw=f r sḏm*, since it never underwent any further developments in the cliticisation or erosion chains, which would have ensured its full progression to stage E or further.

	De-semanticisation	De-categorialisation	Cliticisation	Erosion	Adposition-to-TAM
r – prepositional lexeme	1	1	1	1	A
r – negative future auxiliary	3	4	1	1	D/E
bn ỉw=f sḏm and ⲛⲛⲉϥⲥⲱⲧⲙ	N/A	N/A	N/A	N/A	N/A

Table 36 – Stages reached by each form of r in each of the four linguistic shift chains and overarching adposition-to-TAM chain.

As well as the completed loss of *r*, the development of ⲛⲛⲉϥⲥⲱⲧⲙ also shows the coalescence of the various elements of this construction. Within forms with pronominal subjects, every element was coalesced into a single inseparable prosodic unit (Ex.331), with the negative marker and the already inseparable auxiliary-subject group undergoing compounding, since both comprised of non-root morphemes (Heine & Reh 1984:32), and the content verb and auxiliary-subject group being connected through affixation, since the content verb contained a root morpheme, while the auxiliary and subject were both non-root morphemes (Heine & Reh 1984:32). The compounding of the negative marker and auxiliary is also evident in the forms used with nominal subjects, along with the affixation of these to the subject. However, in such forms the content verb remained separable (Ex.332).

(331) ⲛⲛⲉ-ⲫ-ⲯⲱⲡⲉ ⲇⲉ ⲛⲟⲓ-ⲡ-ⲙⲁ-ⲛ-ⲯⲱⲡⲉ ⲛ-ⲛ-ⲁⲥⲉⲃⲏⲥ
AUX.NEG.FUT-3MSG-exist.INF PART SBJ-the-place-GEN-being GEN-the-impious
....the dwelling place of the impious shall not exist.
Job, 8:22
c.900-999CE

(332) ⲛⲛⲉ-ⲡ-ϫⲟⲉⲓⲥ ⲅⲁⲣ ⲕⲱ ⲛⲥⲱ-ⲫ
AUX.NEG.FUT-the-lord PART leave.INF behind-3MSG
For the lord shall not leave him behind....
Job, 8:20
c.900-999CE

This coalescence and the completed loss of *r* in the development of ⲛⲛⲉⲫⲥⲱⲧⲙ caused an increase in the syntheticity of the negative future construction, due to an increased interdependency between its elements, and a decrease in the quantity of elements.

2.i.iii. Second Analyticisation (ⲛⲛⲉⲫⲥⲱⲧⲙ >> ⲛⲫⲁⲥⲱⲧⲙ ⲁⲛ)

Although the linguistic form *tw=i m nʿy r sḏm* is attested as a means of expressing the affirmative future construction by the 20th dynasty[143], a morphologically corresponding negation is not concurrently attested. It has previously been believed that this was also the case in Demotic (Quack 2006:193), however recently published ostraca from Narmouthis have ensured that there are at least two known attestations of an isomorphic negation for *tw=y nȝ sḏm* in Demotic (Grossman et al. 2014a:115). This was formed *bn iw tw=y nȝ sḏm*, with the initial *bn iw* matching the initial two elements of both *bn iw=f r sḏm* and *bn iw sḏm=f*, suggesting that these may have spread across the various linguistic forms of the negative future by analogy.

(333) *bn* *iw* *tw=y* {*tw=y*} *nȝw* *ir* παραγράφιν[144] *n-im=f*
NEG AUX.FUT 1SG AUX.FUT do.INF register.INF OBJ=3MSG
....I am not going to register him.
O. DN 156, 8-9 & O. DN Narmouthis 2006 15, 1-5 (Grossman et al. 2014a:115)
198-206CE

(334) *r* *bn* *iw* *tw=y* *nȝw* *ir* παραγράφιν *n-im=tn* (*i*)*n*
CIRC NEG AUX.FUT 1SG AUX.FUT do.INF register.INF OBJ=2PL NEG
....as I am not going to register you.
O. DN Narmouthis 2006 15, 9-11 (Grossman et al. 2014a:116)
198-206CE

While this form was rare in Demotic, within Coptic an isomorphic negation of the affirmative ⲫⲛⲁⲥⲱⲧⲙ is regularly attested. This used the negation ⲛ···ⲁⲛ, developed in the

[143] See Ex.286 (pg.148).
[144] The chief characteristic of the newly published Narmouthis ostraca is their sporadic use of Greek words in Greek alphabetic script interspersed among texts otherwise in the Demotic script (Grossman et al. 2014a:115).

negative present construction from the earlier negative markers *n* and *iwn3* (later written *in*), and was formed ⲛⲛⲁⲥⲱⲧⲙ ⲁⲛ. An earlier example which many show the negation *n...in* in the negative future construction may be seen in (Ex.334), in which the linguistic form of the negative future appears to be *bn iw tw=y n3 sḏm* (*i*)*n*. However, the beginning of line 11 of O. DN Narmouthis 2006 15, where (*i*)*n* appears, is rather unclear, and it has been debated as to whether (*i*)*n* appears at all (Grossman et al. 2014a:155 n.74).

(335) ⲛ-ϯ-ⲛⲁ-ⲃⲱⲕ ⲁⲛ
NEG-1SG-go.INF NEG
I will not go....
AP24
c.300-499CE

(336) ⲁⲗⲗⲁ ⲛ-ⲥⲉ-ⲛⲁ-ⲡⲣⲟⲕⲟⲡⲧⲉ ⲁⲛ ⲉⲙⲁⲧⲉ
but NEG-3PL-AUX.FUT-advance.INF NEG very_much
But they will not advance very far.
2 Tim., 3.9 (Wilson 1970:67-68)
c.500-599CE

As in the negative present ⲛⲛⲥⲱⲧⲙ ⲁⲛ[145], the initial ⲛ of ⲛⲛⲁⲥⲱⲧⲙ ⲁⲛ could regularly be omitted.

(337) ⲟⲩⲕⲉⲧⲓ ⲕ-ⲛⲁ-ϩⲉ ⲁⲛ ⲉ-ⲕⲉ-ⲕⲉⲣⲟⲥ ⲙ-ⲙⲉⲧⲁⲛⲟⲓⲁ
no_longer 2MSG-AUX.FUT-find.INF NEG OBJ-other-opportunity for-repentance
....you will no longer find another opportunity for repentance.
Discourse of Apa John, fol.31a.col.2
c.600-699CE

Similar to ⲛⲛⲉⲛⲥⲱⲧⲙ, ⲛⲛⲁⲥⲱⲧⲙ ⲁⲛ shows the results of coalescence. In all cases, when the negative marker ⲛ was written it was prefixed to the subject (Layton 2000:243-244), showing the results of compounding in forms with pronominal subjects, since the elements involved were both non-root morphemes, and affixation in forms with nominal subjects, since the negative marker was a non-root morpheme while nominal subjects always contained a root morpheme (Heine & Reh 1984:32). Forms with pronominal subjects also show the results of compounding between the pronominal subject and future auxiliary, as well as the affixation of this group with the content verb (Ex.338). Forms with nominal subjects show the affixation of the auxiliary and content verb, although these remained separable from the nominal subject (Ex.339), similar to the corresponding affirmative[146].

[145] See pg.114-115.
[146] See pg.160.

(338) ⲛ-ⲅ-ⲛⲁ-ⲃⲱⲕ ⲇ[ⲉ] ⲉϩⲟⲩⲛ ⲉⲣⲟ-ⲟ ⲁⲛ
NEG-2MSG-AUX.FUT-go.INF PART in to-3MSG NEG
....but you will not go into it.
Deut., 34.4
c.300-399CE

(339) ⲛ-ⲁ-ⲯⲁⲭⲉ ⲇⲉ ⲛⲁ-ⲡⲁⲣⲁⲅⲉ ⲁⲛ
the-1SG-word PART AUX.FUT-pass_away.INF NEG
But my words will not pass away.
Matt., 24.35 (Layton 2000:243)
c.750-799CE

The coalescence within the development of this linguistic form also resulted in ⲛⲁ acquiring the status of an affix, showing its development along the cliticisation chain. This marked the completion of all four linguistic shift chains, and thus ⲛⲁ progressed to stage G of the verb-to-TAM chain. Since ⲛⲫⲛⲁⲥⲱⲧⲙ ⲁⲛ and its predecessor *bn ỉw tw=y n3 sḏm (in)* developed as isomorphic negations of the affirmative future *tw=y n3 sḏm* at a point when the auxiliarification of *nʿy/n3* was already quite advanced, the auxiliarification of *n3* and ⲛⲁ in the negative future shows only the latter stages of auxiliarification, which occurred identically to those in the affirmative construction[147].

	Desemanticisation	Decategorialisation	Cliticisation	Erosion	Verb-to-TAM
n3 – negative future auxiliary	3	5	1	2/3	D/E
ⲛⲁ – negative future affix	3	5	3	3	G

Table 37 – Stages reached by each form of n3 and ⲛⲁ in each of the four linguistic shift chains and overarching verb-to-TAM chain.

Within the majority of Coptic dialects, ⲛⲫⲛⲁⲥⲱⲧⲙ ⲁⲛ became the most common linguistic form used to express the negative future construction within Coptic, replacing ⲛⲛⲉⲫⲥⲱⲧⲙ. However, Shisha-Halevy (2003:263) noted that in Oxyrhynchitic the equivalent orthography ⲛⲫⲛⲉⲥⲱⲧⲙ ⲉⲛ was very rare, with f ⲛⲛⲉⲫⲥⲱⲧⲙ being the main negative future expression (Shisha-Halevy 2002:300).

The use of ⲛⲫⲛⲁⲥⲱⲧⲙ ⲁⲛ as the most common linguistic form of the negative future in all dialects except Oxyrhyncthitic caused an increase in the analyticity of this construction. The

[147] See table 34 (pg.161).

additional negative element ⲁⲛ ensured that this form contained a greater number of elements than ⲛⲛⲉⲩⲥⲱⲧⲙ. Furthermore, the position of ⲁⲛ was fairly free (Till 1970:202), and this element could be separated from the rest of the construction by external elements (Ex.338 and Ex.340), giving this linguistic form a greater level of autonomy than ⲛⲛⲉⲩⲥⲱⲧⲙ.

(340) ⲡ-ⲛⲟⲩⲧⲉ ⲛ-ⲛⲉ-ⲭⲣⲓⲥⲧⲓⲁⲛⲟⲥ ⲛⲁ-ⲁⲛⲉⲭⲉ
the-god GEN-the-Christians AUX.FUT-endure.INF
ⲙⲙⲟ-ⲕ ⲁⲛ ⲛ-ⲧⲉⲓ-ϩⲉ ϣⲁⲃⲟⲗ
OBJ-2MSG NEG in-this-way forever
....the god of the Christians will not endure you in this way forever.
Eud., 38.13-4 (Reintges 2004:346)
c.640-650CE

As can be seen in Ex.337 and Ex.339-342, it was also possible for the negative marker ⲛ to be omitted from ⲛⲩⲛⲁⲥⲱⲧⲙ ⲁⲛ, although the presence of ⲁⲛ was obligatory, similar to the negative present ⲛⲩⲥⲱⲧⲙ ⲁⲛ[148].

(341) ⲛⲧⲟⲕ ⲕ-ⲛⲁ-ⲡⲱⲧ ⲁⲛ
2MSG 2MSG-AUX.FUT-flee.INF NEG
Will you not flee?
AP186
c.300-499CE

(342) ⲁⲛⲟⲛ ⲙⲉⲛ ⲧⲏⲣ-ⲛ ⲧⲛ-ⲛⲁ-ⲛⲕⲟⲧⲕ ⲁⲛ
1PL PART all-1PL 1PL-AUX.FUT-die.INF NEG
All of us are not going to die....
1 Cor., 15.51 (Wilson 1970:68)
c.500-599CE

This partial loss of ⲛ shows an increase in syntheticity in the forms in which ⲛ was omitted, due to these forms containing a lower quantity of elements, although the autonomy of ⲁⲛ ensured that this linguistic form remained more analytic than ⲛⲛⲉⲩⲥⲱⲧⲙ. However, since the omission of ⲛ from ⲛⲩⲛⲁⲥⲱⲧⲙ ⲁⲛ was only optional, the loss of this element had not been completed, and thus increase in syntheticity was not widespread across all forms. It may be hypothesised that had the use and development of the Egyptian language continued, the loss of ⲛ would have been completed, in concurrence with the final stage of the Jespersen cycle (Jespersen 1917:4).

2.i.iv. Conclusions

Many of the developments within the negative future construction are similar to those in the affirmative future construction, due to the use of multiple isomorphic negations

[148] See pg.114.

throughout the development of these constructions. As such, the auxiliarification process which caused the first analyticisation of the negative future construction was identical to that involved in the analyticisation of the affirmative future construction, while the syntheticisation of the negative construction involved the same loss of *r* which was completed in the affirmative form used with nominal subjects, and similar processes of coalescence to that which occurred in the affirmative construction.

However, the negative future construction shows that the isomorphic negations which were used are not attested concurrently with the first attestations of auxiliarified linguistic forms in the affirmative future. While the affirmative form *ỉw=f r sḏm* is first attested from the 5th dynasty, the corresponding negative form *nn ỉw=f r sḏm* is not attested until the 18th dynasty, around 1000 years later. Similarly, while *tw=ỉ m nʿy r sḏm* is first attested as an affirmative future construction from the 19th dynasty, an isomorphic negation is not attested until around 1500 years later, in texts from 198-206CE. This indicates that the emergence of a new linguistic form of an affirmative construction did not necessitate the concurrent emergence of a morphologically corresponding negation, and shows that the existing negation of the construction in question could be used to negate both the older and newer affirmative linguistic forms. It also shows that a significant gap between the first uses of an affirmative linguistic form and its isomorphic negation did not prevent the development of the negation following a similar path to that of the affirmative form.

Similar to the development of the negative present construction[149], the development of the negative future construction provides an example of the Jespersen cycle. However, the negative future construction shows a far less clear example of the early stages of the Jespersen cycle than the negative present, since these occurred in a linguistic form for which there is very little evidence. The strengthening of the original negative marker through the addition of another can potentially be seen in the linguistic form *bn ỉw tw=y nꜣ sḏm*, through the addition of *ỉn*, as seen in the contrast between Ex.333 and Ex.334. However, as discussed above, the presence of (*ỉ*)*n* in Ex.334 is far from clear, and thus this does not show a definitive example of the beginnings of the Jespersen cycle.

However, the later development of this linguistic form does show a clear stage of the Jespersen cycle, with the non-obligatory nature of ⲛ in the linguistic form ⲛⲧⲛⲁⲥⲱⲧⲙ ⲁⲛ

[149] See pg.116-117.

showing the weakening of the original negative marker, and the status of the newer negative marker 𐤀𐤍 as 'the negative proper' (Jespersen 1917:4).

Similar to the negative markers in the negative past and negative habitual, and the marker *ḫr* in the affirmative habitual, the negative marker in the negative future construction unaffected by the analyticisation of the construction, but was involved in its syntheticisation, being affected by coalescence.

2.j. Causative Imperative

im[150] *sḏm=f* > *my sḏm=f* > *my ir=f sḏm* > ⲙⲁⲣⲉⲥⲥⲱⲧⲙ

For the vast majority of the history of the Egyptian language, the verbal lexeme *rdi* could be used to form causative constructions, being conjugated in one of a variety of constructions, and followed by a future *sḏm=f* of the content verb (Beylage 2018:449). However, within the Coptic language stage, only the descendants of a select few of these causative constructions are attested, such as the affirmative and negative causative imperative, causative infinitive and finalis constructions. These four constructions have been selected for discussion in this thesis since they show a clear development, involving the processes of analyticisation and syntheticisation, while other causative constructions with a conjugated form of *rdi* followed by a future *sḏm=f* show no development into new linguistic forms.

The causative imperative construction discussed here was used throughout each stage of the Egyptian language to issue a polite command, often as a 3rd person equivalent of the imperative (Gardiner 1957:259), or in later periods in contexts in which use of an imperative would be socially unacceptable (Reintges 2004:319). This construction was primarily used with 1st or 3rd person subjects.

The causative imperative has been referred to by multiple labels, including the optative (Till 1970; Johnson 1976; Loprieno 1995), injunctive (Lambdin 1983), jussive (Layton 2000; Reintges 2004) and causative imperative (Polotsky 1960 & 1987; Junge 2001). In this thesis the term 'causative imperative' is used, since it offers the best description of the meaning of this construction, due to the origins of the construction in the use of an imperative form of the verb 'to cause'.

2.j.i. Analyticisation (*im sḏm=f* > *my sḏm=f* > *my ir=f sḏm*)

The earliest attested linguistic form of the causative imperative construction is *im sḏm=f*, formed from the imperative form of the irregular verb *rdi*, 'to cause', followed by the content verb and subject conjugated in the future *sḏm=f*. This provided the meaning of 'cause that he hear' or 'let him hear'. *im sḏm=f* was unchanged through to the end of the Late Egyptian stage.

[150] In this thesis,  , for which 'nothing is known about its pronunciation in Late Egyptian' (Černý & Groll 1993:349), is transliterated as *im* rather than *imi* due to the absence of a final representing the final *i* in the written language.

(343) *im* *sw3* *ppy* *pn*
cause.IMP pass.FUT Pepy this
Let this Pepy pass.
PT914b[P]
6th dynasty, Pepy I

(344) *h3* *n=f* *im* *rḫ=f* *rn=k*
go_down.IMP DAT=3MSG cause.IMP know.FUT=3MSG name=2MSG
Go down to him and let him know your name.
MES, 22.3&5 (Gardiner 1957:259)
12th dynasty, Amenemhat III

(345) *im* *di=tw* *p3* *ḥtr*
cause.IMP give.FUT=PASS the stipend
wn *ḥr* *pr* *n=s* *n* *t3y=i* *snt*
be.REL.PST AUX.PRS go_out.INF DAT=3FSG DAT POSS=1SG sister
Cause that the stipend which was going out to her be given to my sister....
P. Turin 1977, 5-6 (Neveu 2015:84)
19th dynasty

(346) *im* *ꜥš=tw* *n* *ḥr* *ḥnꜥ* *stẖ*
cause.IMP call.FUT=PASS DAT Horus and Seth
Let Horus and Seth be called.
LES, 51.8-9 (Junge 2001:145)
20th dynasty, Ramesses V

In Demotic the marker of this linguistic form exhibits orthographic change to *my*, resulting in *my sḏm=f* (Ex.348). This reflected the change in the imperative form of the verbal lexeme *di*, which was also *my* in Demotic (Johnson 1976:28) (Ex.347), showing that no phonological or morphological divergence had occurred between these two lexical and grammaticalised forms of *di* at this time.

(347) *my* *mw* *m-s3* *n3* *ḫt* *ḫmw*
give.IMP water after the tree small
Give water to the small trees.
Demotic Chronicle, 5.20
First half of Ptolemaic period

(348) *my* *in=w* *ꜥnḫ-ššnky* *s3* *ṯ3y-nfr*
cause.IMP bring.FUT=3PL Onchsheshonqy son Tjaynefer
Cause that Onchsheshonqy, son of Tjaynefer, be brought.
Onchsheshonqy, 3.19-20 (Johnson 1976:222)
Late Ptolemaic

Within Demotic, an auxiliarified form of the causative imperative is first attested, formed *my ir=f sḏm*. This form was interchangeable with *my sḏm=f* (Johnson 1976:218), but while use of *my sḏm=f* was very common (Johnson 1976:221), use of *my ir=f sḏm* was 'quite limited until the late period' (Johnson 1976:222), until it became standard in the Roman period (Allen 2013:149).

(349) *my* *ir=w* *ḏd* *n=y* *n* *t3* *m3ʿt*
CAUS_IMP AUX.CAUS_IMP=3PL say.INF DAT=1SG OBJ the truth
Let them tell me the truth....
Magical, 9.22 (Allen 2013:149)
c.200-299CE

(350) *my* *ỉre* *mn* *r-ms* *mn* *mry=ṯ*
CAUS_IMP AUX.CAUS_IMP so_and_so REL-bear.PST so_and_so love.INF=1SG
my *ir=s* *mḥ* *m-s3=y*
CAUS_IMP AUX.CAUS_IMP=3FSG burn_for.INF after=1SG
May so and so, who so and so bore, love me, may she burn for me.
Magical, 13.28 (Johnson 1976:222)
c.200-299CE

The development of *my ỉr=f sḏm* involved the addition of the verb *ỉr* as an auxiliary, which may be viewed as conjugated in the future *sḏm=f* form in which the content verb was previously conjugated. This auxiliarification was identical to that which occurred in multiple other constructions which utilised *ỉr* as an auxiliary[151], as detailed fully on pg.43-48. The auxiliarification of *ỉr* at this stage involved both desemanticisation and decategorialisation, but no cliticisation or erosion, causing it to reach stage D of the verb-to-TAM chain (Heine 1993:61-62), with some features of stage E (Heine 1993:62-64). As with many cases of auxiliarification in other constructions, this occurred concurrently with a change in word order from VS to SV.

	Desemanticisation	Decategorialisation	Cliticisation	Erosion	Verb-to-TAM
ỉr – verbal lexeme	1	1	1	1	A
ỉr – causative imperative auxiliary	3	3	1	1	D/E

Table 38 – Stages reached by each form of ỉr in each of the four linguistic shift chains and overarching verb-to-TAM chain.

The auxiliarification of the causative imperative construction caused an increase in analyticity, particularly since the addition of an auxiliary increased the quantity of elements within the construction. Furthermore, the detachment of the content verb from the subject, and its appearance as an infinitive rather than an inflected form, increased the autonomy of the content verb within this construction.

[151] Past, habitual, negative habitual, negative causative imperative, causative infinitive, finalis, terminative, not yet, temporal.

2.j.ii. Syntheticisation (*my ir=f sḏm* > ⲙⲁⲣⲉϥⲥⲱⲧⲙ)

The syntheticisation of the causative imperative is evident in the following linguistic form from that in which the analyticisation of the construction is visible. This subsequent form was that attested from Coptic, ⲙⲁⲣⲉϥⲥⲱⲧⲙ.

(351)

ⲙⲁⲣⲉ-ⲡⲉ-ⲕ-ⲣⲁⲛ	ⲟⲩⲟⲛ
AUX.CAUS_IMP-POSS-2MSG-name	be_hallowed.INF
ⲙⲁⲣⲉ-ⲧⲉ-ⲕ-ⲙⲛⲧⲉⲣⲟ	ⲉⲓ
AUX.CAUS_IMP-POSS-2MSG-kingdom	come.INF
ⲙⲁⲣⲉ-ⲡⲉ-ⲕ-ⲟⲩⲱϣ	ϣⲱⲡⲉ
AUX.CAUS_IMP-POSS-2MSG-wish	happen.INF

May your name be hallowed, may your kingdom come, may your wish happen.
Luke, 11.2-3 (Layton 2000:268)
c.450-499CE

(352)

ⲉϣⲭⲉ	ⲛ-ⲥ-ⲛⲁ-ⲧⲱⲟⲩⲛ	ⲁⲛ
If	NEG-3MSG-AUX.FUT-arise.INF	NEG
ⲙⲁⲣⲉ-ⲥ-ϯ	ⲛ-ⲛⲟⲩ-ⲥ	ⲛⲁ-ⲛ
AUX.CAUS_IMP-3MSG-give.INF	OBJ-POSS-3MSG	DAT-1PL

If he will not arise, may he give that which is his to us....
Ac. A&P, 210.211-212 (Reintges 2004:320)
800CE or later

ⲙⲁⲣⲉϥⲥⲱⲧⲙ shows the orthographic change from *my* to ⲙⲁ, with this element remaining formally identical the imperative of the verbal lexeme ϯ (from *rdi*), which had itself developed from *my* to become ⲙⲁ (Černý 1976:77). This shows that while the lexical source of this marker and its form within the causative imperative construction had undergone syntactic and semantic[152] divergence from one another, their phonological and morphological developments mirrored one another, showing no divergence. This indicates that the marker of the causative imperative had not become completely disassociated with its lexical source, as occurred with many other markers and auxiliaries.

ⲙⲁⲣⲉϥⲥⲱⲧⲙ also shows the slight erosion of the auxiliary *ir* to ⲣⲉ. This development is identical to the development of the auxiliary *ir* in multiple other constructions[153]. Since the development from *ir* to ⲣⲉ shows a slight phonological reduction in this element, and

[152] The verbal lexeme ϯ, descended from the earlier *rdi* and *di*, in Coptic no longer expressed the meaning 'to cause', and instead only expressed the meaning 'to give' (Černý 1976:178). However, some remnant of the meaning cause' did survive in causative verbs formed with ϯ, such as ϯⲥⲗⲁⲁⲧⲉ, 'to cause to stumble', or ⲧ, such as ⲧⲃⲃⲟ, 'to cause to be pure'.
[153] Habitual (visible in forms with nominal subjects), negative habitual (visible in forms with nominal subjects), negative causative imperative, finalis, causative infinitive, temporal.

Coptic verbal prefixes such as ⲣⲉ could not carry stress (Reintges 2004:34), ⲣⲉ had reached the final stage of the erosion chain (Heine 1993:56).

ⲣⲉ also shows the progression of this auxiliary along the cliticisation chain. While the earlier *ir* was an independent word, remaining in stage one of this chain (Heine 1993:55-56), ⲣⲉ was an affix, placing it in stage three (Heine 1993:56), the final stage of the cliticisation chain. This came about through the coalescence of the auxiliary, alongside that of the other elements of the construction. Within forms with pronominal subjects, this coalescence involved the compounding of the marker and already inseparable auxiliary-subject group, as well as the affixation of this group to the content verb, leaving the full construction inseparable by external elements (Ex.353). In forms with nominal subjects, coalescence similarly involved the compounding of the marker and auxiliary, as well as the affixation of this group to the noun subject. However, within such forms the content verb remained separable (Ex.354).

(353) ⲡ-ⲉⲧⲉ-ⲟⲩⲛⲧ-ⲥ ⲟⲉⲓⲕ ⲙⲁⲣⲉ-ⲥ-ⲉⲓⲣⲉ ⲟⲛ ⲯⲓⲛⲁⲓ
the-REL-POSS-3MSG bread AUX.CAUS_IMP-3MSG-act.INF again thus
...the one who has bread, may he act thus again.
Canon of Apa John, 218.col.2.27-219.col.1.2
c.900-1100CE

(354) ⲙⲁⲣⲉ-ⲡ-ⲧⲁⲗⲟ ⲟⲛ ⲯⲱⲡⲉ ⲉⲃⲟⲗ ⲯⲓⲧⲟⲟⲧ-ⲥ
AUX.CAUS_IMP-the-healing also come_into_being.INF out through-3MSG
Let healing also come into being through it.
Discourse of Apa John, fol.29b.col.1
c.600-699CE

The progress of the auxiliary in this construction along the erosion and cliticisation chains was mirrored by its further development to the final stage of the decategorialisation chain, having lost virtually all of its verbal properties (Heine 1993:55), since it could no longer be identified as being conjugated in the future *sḏm=f*. These developments allow the form ⲣⲉ to be categorised in stage G of the overarching verb-to-TAM chain, with ⲣⲉ having become an unstressed monosyllabic affix which was a purely grammatical marker (Heine 1993:65).

	Desemanticisation	Decategorialisation	Cliticisation	Erosion	Verb-to-TAM
ir – verbal lexeme	1	1	1	1	A
ir – causative imperative auxiliary	3	3	1	1	D/E
ⲣⲉ – causative imperative affix	3	5	3	3	G

Table 39 – Stages reached by each form of ir and ⲣⲉ in each of the four linguistic shift chains and overarching verb-to-TAM chain.

As well as aiding in advancing the auxiliary of this construction along the verb-to-TAM chain, the coalescence within the development of the causative imperative construction also caused an increase in syntheticity, since it significantly increased the interdependency of the elements within this construction. Syntheticity was also increased slightly by the subtle phonological reduction of *ir* to ⲣⲉ.

2.j.iii. Conclusions

The auxiliarification of the causative imperative, and its consequent analyticisation, was very similar to those of other constructions in which the verbal lexeme *ir* was the source for the auxiliary added to the construction. Furthermore, the coalescence which is visible from the linguistic form attested in Coptic was similar to the coalescence visible at the same time in all other Egyptian verbal constructions.

Since the causative imperative used the element *im*, *my* or ⲙⲁ throughout its development to help provide the meaning of the construction, it is similar to the habitual construction, in that its development shows the impact of the linguistic cycle on a construction which uses an additional element, rather than inflection alone, to express its meaning. Similar to the habitual construction, this semantic marker in the causative imperative was unaffected by the auxiliarification which caused the analyticisation of the construction, but was involved in the coalescence which was the main cause of syntheticisation.

The formation of the linguistic cycle pattern in the causative imperative construction occurred across a relatively short section of its development, beginning with the auxiliarification which occurred in Demotic, and ending in the Coptic language stage, with the end of the use of the Egyptian language preventing any further developments. Prior to

Demotic however, the form of the causative imperative remained stable, with no changes or increases in either analyticity or syntheticity occurring in approximately the first 2000 years of the attested written development of this construction.

2.k. Negative Causative Imperative

m rdi sḏm=f > *m dy sḏm=f* > *m ỉr dỉt sḏm=f* > *m ỉr dỉ ỉr=f sḏm* > ⲙⲡⲣⲧⲣⲉϥⲥⲱⲧⲙ

Just as the causative imperative was used to express a polite command such as 'let him hear', so the negative causative imperative was used to express a vetitive polite command, translated as 'don't let him hear'.

2.k.i. Analyticisation (*m rdi sḏm=f* > *m dy sḏm=f* > *m ỉr dỉt sḏm=f* > *m ỉr dỉ ỉr=f sḏm*)

The earliest attested linguistic form of the negative causative imperative construction was *m rdi sḏm=f*, written *m dy sḏm=f* in Late Egyptian This was formed from the negative imperative construction with *rdi* in the content verb position, followed by the future *sḏm=f* of the content verb and subject. Within the negative imperative of *rdi*, the vetitive *m* provided the negative imperative meaning, being the imperative of the negative verb *imi* (Gardiner 1957:260), while *rdi* appeared as the negative complement. This linguistic form provided the negation of the contemporary affirmative causative imperative, in which the affirmative imperative form of *rdi* followed by the future *sḏm=f* was used.

(355) *šwyt* *m* *ỉr* *m* *šw*
shade NEG.IMP act.NCOMP as sun
ỉbw *m* *rdi* *iṯ* *msḥ*
shelter NEG.IMP cause.NCOMP seize.FUT crocodile
Shade, don't act as the sun. Refuge, don't let the crocodile seize.
Peasant B1, 254-255
12th dynasty, c. Amenemhat III

(356) *m* *rdi* *sḏm=tw* *n=sn*
NEG.IMP cause.NCOMP listen.FUT=IMPRS DAT=3PL
Don't let one listen to them....
Urk. IV, 1070.4 (Gardiner 1957:260)
18th dynasty, Thutmose III

(357) *m* *dy* *ỉry=n* *sḫr* *m* *ḫmt=n*
NEG.IMP cause.NCOMP make.FUT=1PL plans in ignorance=1PL
Let us not make plans in our ignorance.
LES, 38.16-39.1 (Junge 2001:79)
20th dynasty, Ramesses V

(358) *m* *dy* *wˁr=w*
NEG.IMP cause.NCOMP flee.FUT=3PL
ḫr *m* *dy* *ḥḳr=w*
and NEG.IMP cause.NCOMP be_hungry.FUT=3PL
Don't let them flee and don't let them be hungry.
LRL, 8.7-8 (Neveu 2015:86)
20th dynasty, Ramesses XI, year 28

From the 18th dynasty the negative complement was regularly replaced by the infinitive in all contexts (Gardiner 1957:261), and thus the form of *rdi* within *m rdi sḏm=f* could be an infinitive (Ex.359). However, within late Middle Egyptian and Late Egyptian *rdi* could also still appear in its contemporary negative complement form *rdi* or *dy*, as in Ex.356-358.

(359)

m	*rdit*	*šnt=tw*	*wˁ*	*nty*	*m*	*drt=k*
NEG.IMP	cause.INF	question.FUT=PASS	one	REL	in	hand=2MSG

Don't let one who is in your charge be questioned.
K*RI* I, 325.1
19th dynasty, Seti I

In later Late Egyptian 'it is possible to find examples where this construction is periphrased' (Neveu 2015:86), appearing as *m ỉr dit sḏm=f*.

(360)

m	*ỉr*	*dit*	*ptr=i*	*sw*
NEG.IMP	AUX.NEG.IMP	cause.INF	see.FUT=1SG	3SG

Don't let me see it.
LES, 72.8-9 (Neveu 2015:87)
21st dynasty

The formation of *m ỉr dit sḏm=f* involved the process of auxiliarification, with the verbal lexeme *ỉr* providing the source of the auxiliary. This auxiliarification involved the *m dy* section of *m dy sḏm=f*, with the content verb and subject of the construction being unaffected. This differs from every construction discussed so far, in which auxiliarification affected the content verb and subject, with any other elements being unaffected. However, with the exception of the affirmative causative imperative[154], none of these constructions contained any other verbal element than the content verb prior to auxiliarification, whereas *m dy* in the negative causative imperative was verbal in origin. Furthermore, since the linguistic form *m dy sḏm=f* can be viewed as comprising of two individual verbal constructions, namely the negative imperative of the verb *rdi* and the future *sḏm=f* of the content verb, it is not surprising that auxiliarification could occur to the *m dy* section of the construction, without affecting the *sḏm=f* section.

Within *m ỉr dit sḏm=f*, the auxiliary *ỉr* shows progression along two of the linguistic shift chains. *ỉr* may be classed in stage three of the decategorialisation chain, as a result of taking an infinitive (*dit*) as its complement, and no longer being able to have a noun complement (Heine 1993:55). However, *ỉr* retained some of its verbal properties, being identifiable as conjugated within the negative imperative construction. Since at this time either the negative complement or infinitive could follow the vetitive *m* in the negative imperative, *ỉr* could have been in either of these forms. However, the writing of *ỉr* within *ỉr dit sḏm=f*

[154] The yet to be discussed causative infinitive and finalis constructions also shows exceptions.

typically used only the single sign  , which was the writing used for the negative complement of *ỉr* (Gardiner 1957:261), rather than the typical writing of the infinitive or . The difference in these writings can be seen in Ex.361, which shows a negative imperative in which *m ỉr* is also used, following the tendency to replace *m* with *m ỉr* in the negative imperative construction which occurred from the 18th dynasty onwards (Bakir 1978:108). In this example the auxiliary *ỉr* is written , while the content verb, in the infinitive form, is written [].

(361) *ḫr* *m* *ỉr* *ỉr*[*t*] [....]
PART NEG.IMP AUX.NEG.IMP do.INF
….and don't do....
K*RI* VI, 265.11 (Černý & Groll 1993:357)
21st dynasty

Thus it is likely that *ỉr* in *m ỉr dỉt sḏm=f* was a negative complement, rather than infinitive.

The auxiliary *ỉr* also shows progression along the desemanticisation chain, since its complement expressed a dynamic situation (Heine 1993:54). However, *ỉr* was unable to be associated with non-human referents, as is a characteristic of stage three of this chain (Heine 1993:54), and thus it had not progressed any further than stage two. This was due to *ỉr* being conjugated within the negative imperative construction, which always had an inherent 2nd person subject.

ỉr shows no progression along the cliticisation or erosion chains, remaining an independent word in its full phonological form (Heine 1993:55-56).

Consequently, the auxiliary *ỉr* may be categorised in stage B of the verb-to-TAM chain, particularly due to its use of the infinitive as its complement. *ỉr* also shows some characteristics of stage C due to its decategorialisation. However, since 'at this stage, the subject NP is no longer confined to willful/human referents' (Heine 1993:60), and *ỉr* in this linguistic form could not be used with non-human referents, it cannot be fully categorised in stage C.

Unlike other constructions discussed so far in which used *ỉr* as an auxiliary, this auxiliarification of *ỉr* was not identical to other cases of the auxiliarification of *ỉr*, due to its conjugation in the negative imperative ensuring that it did not progress as far along the desemanticisation chain in its initial stage of auxiliarification as the auxiliary *ỉr* in other constructions[155]. Furthermore, this auxiliarification did not cause a change in word order,

[155] See tables 2, 21, 23, and 38 (pg.47, 121, 131 & 179).

either in the construction as a whole, having not affected the content verb and subject, or within *m dy*, since the subject of *m dy* alone was implicit.

	Desemanticisation	Decategorialisation	Cliticisation	Erosion	Verb-to-TAM
ỉr – verbal lexeme	1	1	1	1	A
ỉr – negative causative imperative auxiliary	2	3	1	1	B/C

Table 40 – Stages reached by each form of ỉr in each of the four linguistic shift chains and overarching verb-to-TAM chain.

The analyticisation of the negative causative imperative began some time before that of the corresponding affirmative construction, despite the initial linguistic form of this construction being an isomorphic negation. This shows that the isomorphic nature of a negative construction did not necessitate its development being dependent on that of the corresponding affirmative construction.

The use of *m ỉr dỉ*[156] *sḏm=f* continued into Demotic (Johnson 1976:223).

(362) *m* *ỉr* *dỉ* *šm* *n3-nfr-k3-ptḥ* *r* *mn-nfr*
NEG.IMP AUX.NEG.IMP cause.INF go.FUT Naneferkaptah to Memphis
Don't let Naneferkaptah go to Memphis....
Setne, 4.8 (Johnson 1976:223)
Ptolemaic

(363) *m* *ỉr* *dỉ* *wnm=s*
NEG.IMP AUX.NEG.IMP cause.INF eat.FUT=3FSG
Don't let her eat.
Magical, 21.40 (Allen 2013:150)
c.200-299CE

However, during the Demotic language stage a further linguistic form of this construction, *m ỉr dỉ ỉr=f sḏm*, is first attested. This was formed through a second occurrence of auxiliarification, within which *ỉr* was once again used as an auxiliary. However, in this case it was the content verb and subject which were impacted, with the rest of the construction being unaffected. Thus this case of auxiliarification was more similar to the auxiliarification which occurred in all other constructions discussed so far.

[156] Within Demotic the infinitive of this verb was written *dỉ*, rather than *(r)dỉt* as in Late Egyptian.

m ỉr dy ỉr=f sḏm was used alongside *m ỉr dỉ sḏm=f* within Demotic (Johnson 1976:223), and by late Demotic, *m ỉr dy ỉr=f sḏm* had become the most common form of the negative causative imperative construction.

As with the auxiliarification of the affirmative causative imperative construction, which also occurred within Demotic[157], the initial stage of the second analyticisation of the negative causative imperative was identical to that of other constructions in which *ỉr* was used as an auxiliary[158], unlike the first auxiliarification of *ỉr* within this construction. Consequently, the auxiliary *ỉr* added in the second auxiliarification of the negative causative imperative construction may be categorised in the same stages of the verb-to-TAM and linguistic shift chains as in other constructions in which *ỉr* was auxiliarified.

	Desemanticisation	Decategorialisation	Cliticisation	Erosion	Verb-to-TAM
ỉr – verbal lexeme	1	1	1	1	A
ỉr – 1st negative causative imperative auxiliary	2	3	1	1	B/C
ỉr – 2nd negative causative imperative auxiliary	3	3	1	1	D/E

Table 41 – Stages reached by each form of ỉr in each of the four linguistic shift chains and overarching verb-to-TAM chain.

(364)

m	*ỉr*	*dỉ*	*ỉr=n*	*ḥrr*
NEG.IMP	AUX.NEG.IMP	cause.INF	AUX.NEG.CAUS_IMP=1PL	delay.INF

Let us not delay.
Setne, 4.12 (Johnson 1976:223)
Ptolemaic

(365)

m	*ỉr*	*dỉ*	*ỉr=f*	*nw*
NEG.IMP	AUX.NEG.IMP	cause.INF	AUX.NEG.CAUS_IMP=3MSG	look.INF

m-sꜣ	*ge*	*mꜣꜥ*
after	another	place

Don't let him look at another place....
Magical, 17.16 (Johnson 1976:223)
c.200-299CE

[157] See pg.178-179.
[158] Causative imperative, causative infinitive, finalis, habitual, negative habitual, not yet, past, temporal, terminative. See pg.43-48 for full details of this auxiliarification.

The two additions of *ir* into the negative causative imperative construction caused an increase in analyticity, primarily due to the increased quantity of elements, but also due to the increased overall autonomy of the construction, since both auxiliaries were independent words. The second addition of *ir* also caused an increase in the autonomy of the content verb, since this became an infinitive rather than an inflected form, and the subject was no longer dependent on it.

2.k.ii. Syntheticisation (*m ir di ir=f sḏm* > ⲙⲡⲣⲧⲣⲉⲕⲥⲱⲧⲙ)

Similar to the syntheticisation of the affirmative causative imperative construction, the syntheticisation of the negative causative imperative is visible from the linguistic form used in Coptic, in this case ⲙⲡⲣⲧⲣⲉⲕⲥⲱⲧⲙ.

(366) ⲙⲡⲣⲧⲣⲉ-ⲛ-ⲧ ⲟⲩⲃⲉ ⲡ-ⲛⲟⲩⲧⲉ
AUX.NEG.CAUS_IMP-1PL-fight.INF against the-god
....let us not fight against God.
Acts, 23.9 (Layton 2000:269)
c.525-575CE

(367) ⲙⲡⲣⲧⲣⲉ-ⲕ-ⲉⲓ ⲉⲡⲉⲥϩⲧ
AUX.NEG.CAUS_IMP-3MSG-come.INF downwards
....don't let him come down....
Matt., 24.17 (Allen 2013:150)
c.750-799CE

(368) ⲙⲡⲉⲣⲧⲣⲉ-ⲩ-ⲕⲁⲗ-ⲧ ⲕⲁϩⲩ ⲛ-ⲧ-ⲁ-ⲗⲉⲃⲓⲧⲟⲛ
AUX.NEG.CAUS_IMP-3PL-strip.INF-1SG strip.STV GEN-POSS-1SG-habit
Don't let them strip me of my habit....
Hil., 12.23 (Reintges 2004:320)
848CE

Syntheticisation stages in the constructions discussed so far typically involved the erosion of one or more elements of a construction[159], involving a reduction in their length. However, the syntheticisation stage of the negative causative imperative also involved the orthographic expansion of one of its elements, with the initial element, *m*, being written ⲙⲡ. This is likely to have been a phonological development, rather than a grammatical development of the kind examined in this thesis, reflecting the pronunciation of ⲙⲡⲣⲧⲣⲉⲕⲥⲱⲧⲙ.

In contrast to this, each of the other fixed elements of this construction did undergo a phonological or morphological reduction, with the first *ir* being reduced to ⲣ, *di* being reduced to ⲧ, and the second *ir* being subtly reduced to ⲣⲉ. These changes also show the

[159] See 4.a.

orthographic divergence of the two uses of *ir* in this construction, with the additional ϵ in the second of these marking them as different in the written form ⲙⲡⲣⲧⲣϵⲫⲥⲱⲧⲙ, reflecting their earlier syntactic divergence from each other and the verbal lexeme they both derived from.

As with all other Egyptian verbal constructions discussed so far, the linguistic form of the negative causative imperative used in Coptic exhibits the result of the coalescence of each element. Within the form used with pronominal subjects, every element was involved in coalescence, making this form of the construction fully inseparable (Ex.369), while in the form used with nominal subjects the content verb was the only element not involved in coalescence, and thus remained separable from the rest of the construction (Ex.370).

(369) ⲙⲡⲣⲧⲣϵ-ⲛ-ⲁⲡⲁⲧⲁ ⲟϵ ⲙⲙⲟ-ⲛ ⲙⲙⲓⲛⲙⲙⲟ-ⲛ
AUX.NEG.CAUS_IMP-1PL-cheat.INF PART OBJ-1PL INTS-1PL
Therefore, let us not cheat ourselves.
Discourse of Apa John, fol.14a.col.2
c.600-699CE

(370) ⲙⲡⲣⲧⲣϵ-ⲙ-ⲙⲛⲧⲛⲁ ⲇϵ ⲕⲁⲗ-ⲕ
AUX.NEG.CAUS_IMP-the-pity PART abandon.INF-2MSG
ⲙⲛ-ⲧ-ⲡⲓⲥⲧⲓⲥ ⲙⲛ-ⲧ-ⲙϵ
and-the-faith and-the-truth
Don't let pity and faith and truth abandon you....
Prov., 3.3
c.500-599CE

The coalescence and phonological reduction experienced by each of the two auxiliaries in this construction caused each to reach the final stages of the cliticisation and erosion chains, having each developed into affixes unable to carry stress, and with the phonological substance of each having been reduced from *ir* (Heine 1993:56). Furthermore, as neither ⲣ nor ⲣϵ can viewed as being conjugated, as each *ir* could in earlier linguistic forms, it is clear that they have each lost their remaining verbal properties, showing progression to the final stage of the decategorialisation chain (Heine 1993:55). This also caused the progression of the first of these, ⲣ, along the desemanticisation chain, since the fact that it was no longer conjugated within the negative imperative, and was now an affix, ensured that its subject was no longer an implicit 2nd person subject, but was the same subject as that of the other auxiliary and the content verb within the negative causative imperative construction. Thus the subject of ⲣ could be a non-willful/human referent, as in Ex.370, showing its progression to the final stage of the desemanticisation chain (Heine 1993:54).

Consequently, both ⲣ and ⲣⲉ may be classed in stage G of the verb-to-TAM chain (Heine 1993:63).

	Desemanticisation	Decategorialisation	Cliticisation	Erosion	Verb-to-TAM
ir – verbal lexeme	1	1	1	1	A
ir – 1st negative causative imperative auxiliary	2	3	1	1	B/C
ir – 2nd negative causative imperative auxiliary	3	3	1	1	D/E
ⲣ – 1st negative causative imperative affix	3	5	3	3	G
ⲣⲉ –2nd negative causative imperative affix	3	5	3	3	G

Table 42 – Stages reached by each form of ir, ⲣ and ⲣⲉ in each of the four linguistic shift chains and overarching verb-to-TAM chain.

The coalescence of this construction was the main cause of its syntheticisation, causing an increase in the interdependency of the elements within the construction. This increase in syntheticity was greater than in many other constructions, due to the coalescence here involving such a high quantity of previously autonomous elements in comparison to coalescence in other verbal constructions. The various phonological reductions also contributed to the syntheticisation of the negative causative imperative construction, causing a reduction in the length of the construction.

2.k.iii. Conclusions

The development of the linguistic cycle pattern in the negative causative imperative construction was similar to that in the corresponding affirmative construction, in that the earliest attested linguistic form was largely unchanged until the Late Egyptian language

stage; analyticisation occurred through the auxiliarification of *ỉr*; and syntheticisation occurred through coalescence and erosion.

However, the analyticisation of the negative construction also involved a further case of analyticisation, with an additional auxiliarification of *ỉr*. This occurred outside of the content verb-subject group, which was the centre for auxiliarification in all constructions discussed so far, and instead involved the auxiliarification of the semantic marker of the negative causative imperative construction. This was able to occur since the marker of the negative causative imperative construction pre-auxiliarification involved a full verbal construction itself, using the negative imperative construction with *rdỉ* as the content verb. As a result of this, the marker of the negative causative imperative construction was able to undergo auxiliarification, which contributed to the analyticisation of the construction. This contrasts with other constructions discussed so far, in which markers were only affected by syntheticisation, as the marker of the negative causative imperative also was, but were unaffected by analyticisation[160].

[160] The marker of the causative imperative construction theoretically could have been affected by auxiliarification and analyticisation, since it also used a verbal construction, in this case the affirmative imperative of *rdỉ*. However, in this construction the marker did not undergo auxiliarification.

2.I. Causative Infinitive

(r)dit sḏm=f > *di ir=f sḏm* > ⲧⲣⲉϥⲥⲱⲧⲙ

In earlier Egyptian, the causative infinitive expressed the meaning 'to cause to hear'. By Coptic it could be used to express an infinitive with its own subject, without necessarily expressing causative meaning.

2.I.i. Analyticisation (*(r)dit sḏm=f* > *di ir=f sḏm*)

The earliest attested linguistic form of the causative infinitive was *(r)dit sḏm=f*. This utilised the infinitive of the verbal lexeme *rdi*, 'to cause', to provide the causative meaning, followed by the content verb and subject conjugated in the future *sḏm=f*, as was the required form of a verb following *rdi*. Within *(r)dit sḏm=f*, the infinitive of *rdi* could appear as part of a further construction in which the content verb appeared in the infinitive form, such as the purpose clause *r sḏm* (Ex.371 and Ex.374), conjunctive *mtw=f sḏm* (Ex.372), or future *iw=f r sḏm* (Ex.373), among others.

(371) *spw* *3* *pw* *r* *rdit* *ir=f*
times 3 COP PURP cause.INF act.FUT=3MSG
....it is three times to cause that he act.
Peasant B1, 186-187
12th dynasty, c. Amenemhat III

(372) *ir* *inn=k* *n=i* *iḏt....*
COND bring.FUT=2MSG DAT=1SG *iḏt*_jar
mtw=k *dit* *swr* *py* *mw....*
AUX.CONJ=2MSG cause.INF drink.FUT flea water
mtw=k *dit* *iwt* *ktw* *m* *ꜣbdw....*
AUX.CONJ=2MSG cause.INF come.FUT *kt*_objects from Abydos
If you bring an *iḏt* jar to me....and cause that the flea drink water....and cause that *kt* objects come from Abydos....
P. BM EA 10085, 2.4-7
19th dynasty

(373) *ptr* *iw=i* *r* *dit* *iwt* *sš* *wr* *pꜣ-sr*
look AUX.FUT=1SG AUX.FUT cause.INF come.FUT scribe chief Paser
m *wpwt* *r* *niwt*
with matter to city
Look, I shall cause that the chief scribe Paser come with the matter to the city.
K*RI* III, 46.4-5
19th dynasty, Ramesses II

(374) *iw=i* *ḥ3b* *ḥr=w* *m-b3ḥ* *pr-ꜥ3* *ꜥ.w.s.*
AUX.FUT=1SG send.INF concerning=3PL before pharaoh l.p.h.
p3y=i *nb* *ꜥ.w.s.* *r* *rdit* *wḏy=tw*
POSS=1SG lord l.p.h. PURP cause.INF dispatch.FUT=PASS
rmṯ *pr-ꜥ3* *ꜥ.w.s.*
man pharaoh l.p.h.
I shall (a message) concerning them before pharaoh l.p.h., my lord l.p.h., to cause that a man of pharaoh l.p.h. be dispatched....
K*RI* VI, 478.10-11 (Junge 2001:147)
20th dynasty, Ramesses IX, year 16

Similar to the causative imperative construction, the earliest attested linguistic form of the causative infinitive remained predominantly stable until early Demotic. The only evident change was that of the infinitive form of *rdi* from *(r)dit* to *di* due to changes in the infinitive form of the verbal lexeme *rdi*, which shows that at this stage the form of *rdi* in the causative infinitive remained a conjugated form of the verbal lexeme, despite it being a fixed part of the construction.

Throughout Demotic, *di sḏm=f* continued to be used (Johnson 1976:272), but a further linguistic form is also attested. This linguistic form, *di ir=f sḏm*, developed through the auxiliarification of *di sḏm=f*, with the addition of the verbal lexeme *ir* as an auxiliary. This auxiliarification shows that by the time it occurred in Demotic *di sḏm=f* was considered as a full construction, rather than a conjugated form of the verbal lexeme *rdi* followed by a future *sḏm=f* as it had been in earlier stages, since the future *sḏm=f* was never auxiliarified within the future construction. *di ir=f sḏm* was initially used alongside *di sḏm=f*, before replacing it as the most common form of the construction in late Demotic.

(375) *t3* *myt* *n* *di* *ir* *t3y=k* *mtt* *sgrḥ*
the way GEN CAUS_INF AUX.CAUS_INF POSS=2MSG speech be_at_peace.INF
The way of causing that your speech be at peace.
P. Insinger, 22.7 (Johnson 1976:276)
c.0-99CE

(376) *r-iw=y* *r* *di* *ir=k* *ir-bnr*
AUX.FUT=1SG AUX.FUT CAUS_INF AUX.CAUS_INF=2MSG escape.INF
r *t3y=k* *sn-thyt*
from POSS=2MSG danger
I shall cause that you escape from your danger.
Mythus, 18.16-17 (Johnson 1976:276)
c.100-199CE

(377) *pḫrt* *r* *di* *ir=w* *sḏe*
prescription PURP CAUS_INF AUX.CAUS_INF=3PL speak.INF
Prescription to cause that they speak.
Magical, 3.21-22 (Johnson 1976:276)
c.200-299CE

The auxiliarification of the causative infinitive was identical to that of other constructions in which *ir* was added as an auxiliary in the auxiliarification of the content verb[161]. Thus the auxiliary *ir* in the causative infinitive construction may be classed in stage D of the verb-to-TAM chain, showing some characteristics of stage E. Furthermore, this auxiliarification occurred concurrently with a change in word order from VS to SV.

	Desemanticisation	Decategorialisation	Cliticisation	Erosion	Verb-to-TAM
ir – verbal lexeme	1	1	1	1	A
ir – causative infinitive auxiliary	3	3	1	1	D/E

Table 43 – Stages reached by each form of ir in each of the four linguistic shift chains and overarching verb-to-TAM chain.

The auxiliarification of the causative infinitive construction caused an increase in analyticity, through an increase in the quantity of elements within the construction and an increase in the autonomy of the content verb, as in other constructions discussed so far.

2.l.ii. Syntheticisation (*di ir=f sḏm* > ⲧⲣⲉϥⲥⲱⲧⲙ)

The syntheticisation of the causative infinitive construction is evident from the linguistic form used in Coptic, ⲧⲣⲉϥⲥⲱⲧⲙ, which was the immediate successor of *di ir=f sḏm*. By this stage the causative infinitive construction no longer solely expressed causative meaning, although this was still a common usage, as in Ex.379. In other examples, such as Ex.378, ⲧⲣⲉϥⲥⲱⲧⲙ had less of a causative sense, and instead simply provided an infinitive with a subject of its own. Similar to earlier linguistic forms of this construction, ⲧⲣⲉϥⲥⲱⲧⲙ could be used in any syntactic environment in which an infinitive could appear, with ⲧⲣⲉ being both a grammatical prefix and transitive infinitive (Layton 2000:286).

(378) ⲛ–ϯ–ⲙⲡⲯⲁ ⲅⲁⲣ ⲁⲛ
NEG-1SG-be_worthy.INF PART NEG
ⲉ–ⲧⲣⲉ–ⲕ–ⲉⲓ ⲉϩⲟⲩⲛ ϩⲁ ⲧ–ⲁ–ⲟⲩⲉϩⲥⲟⲓ
PURP-AUX.CAUS_INF-2MSG-come.INF in under POSS-1SG-roof
For I am not worthy for you to come in under my roof.
Luke, 7.6 (Loprieno 1995:223)
c.450-499CE

[161] See pg.43-48 for full details.

(379) ⲁⲛⲟⲕ ⲇⲉ ⲁ-ⲓ-ⲃⲱⲕ ⲉⲃⲟⲗ ⲉ-ⲡ-ⲧⲟⲟⲩⲉ
1SG PART AUX.PST-1SG-go.INF out to-the-desert
ⲉ-ⲧⲣ-ⲁ-ⲛⲏⲥⲧⲉⲩⲉ
PURP-AUX.CAUS_INF-1SG-fast.INF
I went out to the desert to cause myself to fast....
Ac. A&P, 200.95-96 (Reintges 2004:236)
800CE or later

ⲧⲣⲉϥⲥⲱⲧⲙ shows the slight phonological reductions of *di* to ⲧ, and *ir* to ⲣⲉ. Both of these show the phonological and morphological divergence of these elements from their lexical sources, which in Coptic were written ⲧ[162] and ⲉⲓⲣⲉ respectively. However, a descendant of the verbal lexeme *di* with an identical written form ⲧ was also used in compounds with other verbs to form ⲧ-causatives (Allen 2013:95), and the writing ⲧ was also used in the linguistic form of the negative causative imperative construction used in Coptic, ⲙⲡⲣⲧⲣⲉϥⲥⲱⲧⲙ.

The development of ⲧⲣⲉϥⲥⲱⲧⲙ also involved the coalescence of its various elements. In the form used with pronominal subjects, this coalescence involved the affixation of the marker ⲧ and the already inseparable auxiliary-subject group, being affixation since it involved both non-root morphemes and a root morpheme[163] (Heine & Reh 1984:32). ⲧⲣⲉϥⲥⲱⲧⲙ also shows the affixation of the content verb to the rest of the construction, a process which again involved both root and non-root morphemes, with the content verb being a root morpheme. This resulted in the inseparability of the whole construction in forms with pronominal subjects (Ex.380).

(380) ⲛⲁⲛⲟⲩⲥ ⲇⲉ ⲉ-ⲧⲣⲉ-ⲡ-ⲣⲱⲙⲉ ⲥⲟⲩⲉⲛ-ⲡⲉ-ϥ-ⲯⲓ ⲙⲙⲓⲛⲙⲙⲟ-ϥ
it_is_good PART for-AUX.CAUS_INF-the-man know.INF-POSS-3MSG-measure INTS-3MSG
ⲉ-ⲧⲣⲉ-ϥ-ⲡⲱⲧ ⲇⲉ ⲉⲃⲟⲗ ⲙ-ⲡⲉ-ϥ-ϩⲣⲟⲯ ⲛ-ⲧ-ⲙⲛⲧⲛⲟⲟⲩ
for-AUX.CAUS_INF-3MSG-flee.INF PART away OBJ-POSS-3MSG-burden GEN-the-greatness
But it is good for a man to know his own measure, and for him to flee his burden of greatness.
AP124
c.300-499CE

In the form of this construction used with nominal subjects, the same affixation of ⲧ to the auxiliary also occurred, as did the further affixation of the nominal subject (a root morpheme) and auxiliary (a non-root morpheme). However, unlike in forms with

[162] ⲧ in Coptic no longer expressed the meaning 'to cause'. See n.139.

[163] ⲧ may be classed as a root morpheme since in earlier stages *di* had remained a lexical item (Johnson 1976:272) despite providing the causative meaning of this construction, while in Coptic ⲧⲣⲉ exhibits a number of verbal properties (Reintges 2004:234), particularly those characteristic of infinitives.

pronominal subjects, in forms with nominal subjects the content verb was not involved in coalescence, but instead remained separable from the rest of the construction (Ex.381).

(381) ϩⲙ-ⲡ-ⲧⲣⲉ-ⲡ-ⲥⲱⲙⲁ ⲇⲉ ⲭⲱϩⲙ
at-the-AUX.CAUS_INF-the-body PART become_polluted.INF
ⲧ-ⲁⲛⲁⲅⲕⲏ ⲧⲉ ⲉ-ⲧⲣⲉ-ⲡ-ⲕⲉ-ϩⲏⲧ-ⲧⲁⲕⲟ ⲛⲙⲙⲁ-ⲥ
the-necessity COP for-AUX.CAUS_INF-the-also-heart-perish.INF with-3MSG
While the body is polluted it is necessity for the heart to also perish with it.
Discourse of Apa John, fol.39b.col.1
c.600-699CE

As with other constructions in which the auxiliary *ir* was reduced to ⲣⲉ[164], this element in the causative infinitive construction shows significant progression along each linguistic shift chain, reaching the final stage of each. This allows it to be categorised in stage G of the overarching verb-to-TAM chain.

	Desemanticisation	Decategorialisation	Cliticisation	Erosion	Verb-to-TAM
ir – verbal lexeme	1	1	1	1	A
ir – causative infinitive auxiliary	3	3	1	1	D/E
ⲣⲉ – causative infinitive affix	3	5	3	3	G

Table 44 – Stages reached by each form of ir and ⲣⲉ in each of the four linguistic shift chains and overarching verb-to-TAM chain.

The process of coalescence within the development of the causative infinitive caused an increase in the syntheticity of this construction, since it increased the interdependency between the elements of the construction. Furthermore, the erosion of each of the fixed elements of this construction also caused an increase in syntheticity, due to a reduction in the length of these elements, and consequently of the construction as a whole.

2.I.iii. Conclusions

The development of the causative infinitive construction is very similar to that of the causative imperative construction. Both of these were initially formed using an appropriate form of the verbal lexeme *rdi* followed by the future *sḏm=f*, which underwent auxiliarification with the addition of *ir*, causing an increase in analyticity, and subsequently

[164] Habitual, negative habitual, causative imperative, negative causative imperative, finalis, temporal.

coalescence and some phonological reduction, causing an increase in syntheticity. Orthographically, the only difference in the various written forms of these constructions was the form of the verbal lexeme *rdi* used as a semantic marker of the construction.

Also similar to the causative imperative construction, as well as several other constructions discussed so far, the marker (*r*)*dit/di* was unaffected by the auxiliarification and consequent analyticisation of the construction, but was affected by the processes of erosion and coalescence in the syntheticisation of the construction. As (*r*)*dit*/*di* was verbal in origin, it is theoretically possible for it to have undergone auxiliarification, as occurred with *m dy* in the negative causative imperative construction. However, similar to the causative imperative construction, in practice this did not occur.

2.m. Finalis

di=i sḏm=f > *di=y ir=f sḏm* > ⲧⲁⲣⲉϥⲥⲱⲧⲙ

The finalis construction provided a subordinate clause, which primarily functioned to state the result of its superordinate clause being carried out. This construction is definitively attested in Demotic and Coptic, but its origins, and several ambiguous examples which may be interpreted with finalis meaning, can be seen earlier.

2.m.i. Analyticisation (*di=i sḏm=f* > *di=y ir=f sḏm*)

The earliest attested linguistic form in the chain of development of the finalis construction was *di=i sḏm=f*. This was comprised of the fixed elements of the verbal lexeme *rdi* and a 1st person singular subject, conjugated in a circumstantial future *sḏm=f*, followed by the variable elements of a future *sḏm=f* of the content verb and subject. Within earlier Egyptian, this construction provided causative meaning and may be identified as a part of the full paradigm of *rdi=f sḏm=f*. However, despite early examples of *di=i sḏm=f* overwhelmingly showing standard causative usages, an example from the *Coffin Texts* has been suggested by Gilula to be 'perhaps the oldest known example of this [finalis] construction' (Gilula 1975:136).

(382)

ʿḥʿ	*ṯs*	*ṯw*	*di=i*	*mɜ=i*	*ṯw*
stand_up.IMP	raise.IMP	2MSG	FIN/cause.FUT.CIRC=1SG	see.FUT=1SG	2MSG

Stand up! Raise yourself and I will see you.
CT I, 230f[B10C] (Gilula 1975:136)
Early 12th dynasty

In this example, *di=i sḏm=f* follows an imperative, which is the only syntactic environment in which the finalis construction in subsequent stages of Egyptian are found (Junge 2001:146; Johnson 1976:277). However, the circumstantial future *sḏm=f* could also be used after an imperative, with a purpose clause meaning. Thus while this example could be translated as a finalis, it may also be taken to be a circumstantial future *sḏm=f*, translated 'raise yourself so that I may cause that I see you', with this being equally as semantically viable, and possibly more likely given the common contemporary causative usage of this construction. At most this example shows a period in the development of this construction where both interpretations are viable.

Within Late Egyptian and Demotic, *di=i sḏm=f* continued to be used following an imperative, including the causative imperative. During Late Egyptian and Demotic various

examples of *di=i sḏm=f* can be interpreted with either a finalis or circumstantial future meaning.

(383)

mi	*di=i*	*iry=k*	*p3*	*hrw*
come.IMP	FIN/cause.FUT.CIRC=1SG	spend.FUT=2MSG	the	day

iw=k	*snḥ.tw*
CIRC=2MSG	bind.STV

Come and you will spend the day bound....
..... so that I may cause you to spend.....
P. BM EA 10042, verso, 1.6 (Gilula 1975:135)
19th – 20th dynasties

(384)

im	*ḫ3ʿ.tw=f*	*r-bn[r]*	*irm=i*
cause.IMP	release.PASS=3MSG	outside	with=1SG

di=i	*[ptr]=k*	*ḏrt=i*
FIN/cause.FUT.CIRC=1SG	see.FUT=2MSG	hand=1SG

iw=f	*t3y{=f}*	*ḏrt=f*	*m-b3ḥ*	*t3*	*psḏt*
CIRC=3MSG	seize.INF	hand=3MSG	before	the	ennead

Let him be released outside with me and you will see my hand as it seizes his hand before the ennead.
.....so that I may cause you to see.....
LES, 38.3-5 (Junge 2001:147)
20th dynasty, Ramesses V

(385)

ḫm	*b3t*
be_small.IMP	presumptuousness

di=y	*ʿy*	*t3y=k*	*šfʿt*
FIN/cause.FUT.CIRC=1SG	be_great.FUT	POSS=2MSG	esteem

n	*ḥ3t*	*rmt*	*nb*
in	heart	people	all

Be modest and your esteem will be great in the hearts of all people.
.....so that I may cause your esteem to be great.....
Onchsheshonqy, 17.26 (Johnson 1976:277)
Late Ptolemaic

Within Demotic, the finalis construction underwent auxiliarification, resulting in the linguistic form *di=y ir=f sḏm*. This resultant linguistic form shows that by the time the finalis construction was auxiliarified, *di=i sḏm=f* was considered to be a full construction, rather than the future *sḏm=f* of *rdi* followed by another future *sḏm=f*, since the future *sḏm=f* never underwent auxiliarification within the development of the future construction, and thus the content verb and subject of the finalis construction were evidently no longer considered to be conjugated as such. *di=y ir=f sḏm* may consequently be clearly identified as the finalis construction, without any ambiguity with a standard causative meaning.

(386)

mts	*p3y=k*	*šr*	*di=y*	*ir*	*p3*	*t3*	*mr=f*
instruct.IMP	POSS=2MSG	son	FIN	AUX.FIN	the	land	love.INF=3MSG

Instruct your son and the land will love him.
P. Louvre 2414, 1.12 (Johnson 1976:277)
163 BCE

The auxiliarification of the finalis construction involved the addition of the verbal lexeme *ir* as an auxiliary, as occurred in multiple other Egyptian verbal constructions[165]. This auxiliarification occurred identically to these other auxiliarifications of *ir*[166], in which *ir* initially underwent desemanticisation and decategorialisation, but did not immediately undergo any form of cliticisation or erosion[167]. *ir* thus experienced divergence from its lexical source in terms of its syntax and semantics, but not in terms of its form.

	Desemanticisation	Decategorialisation	Cliticisation	Erosion	Verb-to-TAM
ir – verbal lexeme	1	1	1	1	A
ir – finalis auxiliary	3	3	1	1	D/E

Table 45 – Stages reached by each form of ir in each of the four linguistic shift chains and overarching verb-to-TAM chain.

The auxiliarification of the finalis also occurred concurrently with a change in word order from VS to SV, similar to many other cases of auxiliarification in Egyptian verbal constructions.

By late Demotic *di=y ir=f sḏm* had become the most common linguistic form used to express the finalis construction, with use of *di=i sḏm=f* dying out by the end of Demotic. This subsequently caused an increase in the analyticity of the construction since, in comparison to *di=y sḏm=f*, *di=y ir=f sḏm* contained a greater quantity of elements. It also exhibited a greater level of autonomy, since the auxiliarification of this construction had caused the content verb to be expressed in an infinitive form, with the subject no longer being dependent on it, thus becoming more autonomous.

2.m.ii. Syntheticisation (*di=y ir=f sḏm* > ⲧⲁⲣⲉⲥϭⲱⲧⲙ)

As with many other Egyptian verbal constructions, the syntheticisation of the finalis construction is evident from the linguistic form attested in Coptic, in this case ⲧⲁⲣⲉⲥϭⲱⲧⲙ. Furthermore, this syntheticisation occurred in the development of the linguistic form immediately following that in which analyticisation had begun, similar to several other constructions[168], including the two other affirmative constructions in which the verbal

[165] Past, habitual, negative habitual, causative imperative, negative causative imperative, causative infinitive, terminative, not yet, temporal.
[166] With the exception of the first auxiliarification of *ir* within the negative causative imperative.
[167] See pg.43-48 for further details.
[168] Past, perfect, habitual, negative habitual, causative imperative, causative infinitive, not yet.

lexeme *rdi* was utilised as a semantic marker. Thus written attestations of this construction indicate that its analyticisation was limited to the development of a single linguistic form, while the end of the use of the Egyptian language prevented any further developments, and ensured that the syntheticisation of this construction was also limited to the development of a single linguistic form.

While in earlier stages the finalis construction was restricted to use after imperatives, ⲧⲁⲣⲉⲫⲥⲱⲧⲙ could be used after imperatives or questions (Till 1970:157). Following an imperative (Ex.388) the finalis continued to express the result led to by obeying the command of the imperative (Polotsky 1944:2), while after a question (Ex.387) the finalis expressed the result which would occur should the answer to the question be positive (Polotsky 1944:2).

(387) ⲛⲓⲙ ⲡⲉ ⲧⲁⲣ-ⲛ-ⲙⲁⲕⲁⲣⲓⲍⲉ ⲙⲙⲟ-ⲫ
who COP AUX.FIN-1PL-bless.INF OBJ-3MSG
Who is he that we might bless him?
Sirach, 34[31].9 (Layton 2000:285)
c.550-599CE

(388) ⲁⲓⲧⲉⲓ ⲧⲁⲣ-ⲟⲩ-ϯ ⲛⲏ-ⲧⲛ ⲯⲓⲛⲉ ⲧⲁⲣⲉ-ⲧⲛ-ϭⲓⲛⲉ
ask.IMP AUX.FIN-3PL-give.INF DAT-2PL seek.IMP AUX.FIN-2PL-find.INF
ⲧⲱϧⲙ ⲧⲁⲣ-<ⲟⲩ>-ⲟⲩⲱⲛ ⲛⲏ-ⲧⲛ
knock.IMP AUX.FIN-3PL-open.INF DAT-2PL
Ask and they will give to you. Seek and you will find. Knock and they will open to you.
Matt., 7.7 (Loprieno 1995:96)
c.750-799CE

The use of the finalis construction following a question shows its syntactic broadening. Furthermore, the finalis could also be used independently, although this is rarely attested (Layton 2000:275).

(389) ⲧⲁⲣ-ⲛ-ϯ ϫⲛ ⲙⲡⲱⲣ
AUX.FIN-1PL-give.INF or not
Should we give or not?
Mark, 12.14 (Layton 2000:274)
c.450-499CE

This example shows a rare case of much further syntactic broadening of this construction, and it may be hypothesised that if the development of the finalis construction had continued that this syntactic broadening may have continued and spread, resulting in numerous further cases of the finalis in an independent use.

The development from *di=y ir=f sḏm* to ⲧⲁⲣⲉⲕⲥⲱⲧⲙ shows the phonological erosion of *di* and *ir* to ⲧ and ⲣⲉ respectively. The erosion of *di* to ⲧ reflects that in the causative infinitive and negative causative imperative constructions. The erosion of *ir* to ⲣⲉ also occurred in these two constructions, among others[169].

Coptic examples also illustrate the grammaticalisation of the fixed element ⲁ, which in previous linguistic forms was the 1st person singular pronominal subject of *di*, including its desemanticisation and decategorialisation. By Coptic, *=i* or *=y* had lost its original lexical meaning, becoming solely a semantic marker of the finalis construction, and no longer providing the 1st person singular pronoun. This ensured that the finalis construction could no longer express the causative meaning of 'so that I may cause that....', as was also the case in the linguistic form *di=y ir=f sḏm*.

The element *y* also underwent orthographic change, being written ⲁ. This reflected the change of the 1st person singular suffix pronoun in contexts in which it followed the phoneme *y* in Demotic, such as the possessive *pȝy=y*, which was written ⲡⲁ in Coptic. This indicates that although ⲁ in ⲧⲁⲣⲉⲕⲥⲱⲧⲙ no longer expressed the 1st person singular, and was part of the grammaticalised marker of the finalis, it may not have been fully disassociated from its lexical source.

When the subject was the 1st person singular, use of the linguistic form of the finalis, ⲧⲁⲣⲓⲥⲱⲧⲙ, was rare (Layton 2000:284), and this was typically replaced by the conjunctive ⲛⲧⲁⲥⲱⲧⲙ (Loprieno 1995:96).

(390)

ⲥⲱⲧⲙ	ⲛⲥⲁ-ⲡⲉ-ⲫⲣⲟⲟⲩ	ⲛ-ⲧⲉ-ⲕ-ⲫⲙⲫⲁⲗ		
listen	DAT-the-voice	GEN-POSS-2MSG-servant		
ⲛⲧ-ⲁ-ⲕⲱ	ⲉⲫⲣⲁⲓ	ⲫⲁⲣⲱ-ⲕ	ⲛ-ⲟⲩ-ⲫⲣⲉ	ⲛ-ⲟⲉⲓⲕ
AUX.CONJ-1SG-set_down.INF	down	before-2MSG	OBJ-a-food	GEN-bread

....listen to the voice of your servant,
and I will set some bread down before you....
1 Sam., 28.22 (Layton 2000:284)
892-893CE

Gilula has suggested that the use of the conjunctive for the 1st person singular finalis could only be possible if there was at least a notion that ⲧⲁⲣⲉⲕⲥⲱⲧⲙ contained a 1st person singular of the verb *rdi* (Gilula 1975:136), again suggesting that although the element ⲁ no longer explicitly expressed the 1st person singular, it was not fully disassociated from it. However, disassociation between ⲁ in the finalis ⲧⲁⲣⲉⲕⲥⲱⲧⲙ and the lexical 1st person singular ⲁ can be seen in the form ⲧⲁⲣⲓⲥⲱⲧⲙ, showing the use of a 1st person singular

[169] Habitual, negative habitual, causative imperative, temporal.

subject in the finalis construction, which was developed at a later stage by analogy (Gilula 1975:136).

(391) ⲁⲩⲱ ⲧⲓ-ⲡ-ⲣⲟⲟⲩⲯ ⲧⲁⲣ-ⲓ-ⲉⲓ ⲛⲥⲱ-ⲕ
and take.IMP-the-care AUX.FIN-1SG-come_to_fetch.INF OBJ-2MSG
ϩⲛ ⲟⲩ-ⲣⲁⲯⲉ
in a-joy
And take care, and I will come to fetch you in joy....
Isaac, 230.9-10 (Reintges 2004:325)
894-895CE

The development of the linguistic form ⲧⲁⲣⲉⲧⲥⲱⲧⲙ also involved the process of coalescence. Similarly to other Egyptian verbal constructions, this occurred slightly differently for the forms of the construction with pronominal subjects and that with a nominal subject. In forms with pronominal subjects, every element of the construction was involved in its coalescence, creating a single prosodic unit (Ex.392), while in forms with nominal subjects the content verb was exempt from coalescence, which involved all other elements (Ex.393).

(392) ⲣⲉϩⲧ-ⲟⲩ-ϩⲁⲧ ⲉ-ⲧ-ϩⲟⲟⲩ ⲧⲁⲣⲉ-ⲧ-ⲧⲃⲃⲟ ⲧⲏⲣ-ⲧ
strike.IMP-a-silver CIRC-3MSG-be_bad.INF AUX.FIN-3MSG-become_pure.INF all-3MSG
Strike bad silver and it will all become pure.
Prov., 25.4
c.500-599CE

(393) ⲛ-ⲧ-ϩⲙⲟⲟⲥ ⲛϩⲏⲧ-ⲧ ⲧⲁⲣⲉ-ⲛⲉ-ϩⲃⲏⲩⲉ ⲧⲏⲣ-ⲟⲩ ⲥⲱ
CONJ-3MSG-sit.INF OBJ-3MSG AUX.FIN-the-works all-3PL continue.INF
ⲉ-ⲩ-ⲙⲟⲟⲩⲯⲉ ⲛⲥⲁ-ⲡⲉ-ⲩ-ⲉⲣⲏⲩ
CIRC-3PL-progress.INF after-POSS-3PL-companion
....and he sat himself down and the works all continued progressing after each other.
Basil, fol.139a.col.1
c.600-699CE

As a result of coalescence, as well as erosion, the development of ⲧⲁⲣⲉⲧⲥⲱⲧⲙ caused the further progression of the auxiliary *ir*, now ⲣⲉ, along the verb-to-TAM chain. The involvement of this element in the coalescence of the construction caused it to develop from an independent word to an affix, and thus to progress to stage three of the cliticisation chain. This also shows the absence of any of the verbal properties of the lexeme *ir*, thus showing its progression to stage five of the decategorialisation chain. Furthermore, the slight phonological reduction from *ir* to ⲣⲉ, coupled with the inability of ⲣⲉ to carry stress, as was the case with all Coptic verbal prefixes (Reintges 2004:34), ensures that ⲣⲉ may be categorised within stage three of the erosion chain. The completion of each of

these chains, along with the earlier completion of the desemanticisation chain, allows ⲣⲉ to be categorised in stage G of the verb-to-TAM chain.

	Desemanticisation	Decategorialisation	Cliticisation	Erosion	Verb-to-TAM
ir – verbal lexeme	1	1	1	1	A
ir – finalis auxiliary	3	3	1	1	D/E
ⲣⲉ – finalis affix	3	5	3	3	G

Table 46 – Stages reached by each form of ir and ⲣⲉ in each of the four linguistic shift chains and overarching verb-to-TAM chain.

The coalescence of the finalis construction, along with the erosion of *di* and *ir*, caused an increase in syntheticity. This occurred due to the process of coalescence increasing the interdependency of the elements of the construction, while erosion caused a reduction in the length of the two elements it affected, and thus of the construction as a whole.

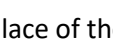
2.m.iii. Conclusions

The formation of the linguistic cycle pattern in the finalis construction involved the minimum possible number of linguistic forms needed for the linguistic cycle to occur, with each development of a new linguistic form being a complete stage of either analyticisation or syntheticisation. Furthermore, the formation of the linguistic cycle in this construction involved only the basic processes which were involved in the linguistic cycle pattern in all Egyptian verbal constructions. The analyticisation of the finalis construction was caused through the auxiliarification of *ir*, which was the most widely used auxiliary across Egyptian verbal constructions[170]. The syntheticisation of the finalis construction involved coalescence, evident from the linguistic form attested in Coptic, along with erosion. Each of these processes occurred in the developments of all Egyptian verbal constructions[171].

As with the constructions discussed in the previous three sections, the causative imperative, negative causative imperative and causative infinitive, the finalis construction utilised the verb *rdi* as the semantic marker of the construction. Thus, theoretically, the marker of this construction was able to undergo auxiliarification, as occurred in the negative causative imperative construction. However in practice this did not occur, and the

[170] See 3.a.ii.1.
[171] See 3.a., 4.a. and 4.c.

marker of the finalis shows the same impact of the linguistic cycle as those in all constructions which used semantic markers discussed so far, other than the negative causative imperative, in that it was unaffected by the process involved in analyticisation, it was affected by the processes involved in syntheticisation.

The lack of auxiliarification of the marker of the finalis construction may have been due to the linguistic form it was originally conjugated in. Before being grammaticalised, *dỉ=i* was conjugated as a future *sḏm=f*, which itself never underwent auxiliarification. This is the same case in the causative infinitive construction, in which the marker *(r)dỉt* was an infinitive, a linguistic form which was not auxiliarified by the time *(r)dỉt* was fully grammaticalised and no longer viewed as an infinitive. The causative imperative also shows this, as the imperative, in which the marker *dỉ* was conjugated, did not undergo auxiliarification. The imperative does show the addition of a prothetic yod in Late Egyptian, however this was not typically used with the imperative of the verb *rdỉ*, *ỉmỉ*. Winand (1992:173) noted only two examples where  appears before *ỉmỉ*, although in each of these it is in place of the initial *ỉ* of *ỉmỉ*, with  written for . Thus the prothetic yod was never used in the causative imperative construction. In contrast, in the negative causative imperative construction, in which the marker was auxiliarified, *rdỉ* was conjugated in the negative imperative, which did undergo auxiliarification itself. This auxiliarification in the negative imperative led to the linguistic form *m ỉr sḏm*, with *ỉr* used as an auxiliary, thus allowing *rdỉ* in the negative causative imperative to appear as *m ỉr dỉt*.

2.n. Terminative

r sḏm.t=f > *i-ir.t=f sḏm* > *šȝᶜ i-ir.t=f sḏm* > *šȝᶜ.t=f sḏm* > *šᶜ.t=f sḏm* > ⲯⲁⲧⲉⲫⲥⲱⲧⲙ

> *šᶜ.mt=f sḏm* > ⲯⲁⲛⲧⲉⲫⲥⲱⲧⲙ

The terminative construction was used to express the meaning of 'until he heard/hears/will hear' throughout the history of the Egyptian language.

2.n.i. Analyticisation (*r sḏm.t=f* > *i-ir.t=f sḏm* > *šȝᶜ i-ir.t=f sḏm*)

The earliest attested linguistic form of the terminative is *r sḏm.t=f*. The written form of this involved the preposition *r*, the content verb, the verb ending *.t*, and the subject. Within this linguistic form both the preposition *r* and the verb ending *.t* contributed to the terminative sense of the construction.

Within the corpus used for this thesis, the earliest examples date from the 6th dynasty, including from the linguistically conservative *Pyramid Texts*.

(394)

[*n*]	*rdi(=i)*	*ḥsf=sn*	*n(=i)*	*ḫt*	
NEG	cause.PST=1SG	punish=3PL	DAT=1SG	thing	
r	*s<ḏ>ȝ.t=sn*	*r*	*iz=sn*	*n*	[*ḥrt-nṯr*]
TRM	travel.TRM=3PL	to	tomb=3PL	DAT	necropolis

I did not cause them to punish me (on account of) anything, until they travelled to their tomb in the necropolis.
Urk. I, 216.7 (Edel 1955/1964:369)
6th dynasty, Pepy I

(395)

n	*wḏȝ*	*ib=n*	*ir*	*hȝ.t=k*
NEG	be_ prosperous.PST	heart=1PL	TRM	descend.TRM=2MSG

We were not glad, until you descended.
PT1198a[M] (Zonhoven 1997:37)
6th dynasty, Merenre

However, alternative readings of both of these are possible, and indeed in the case of (Ex.394) it has previously been suggested that *s<ḏ>ȝ.t* is an infinitive (Edel 1955/1964:369). In Old Egyptian the infinitive of the verb *sḏȝ*, since it was an *s*-causative, involved a *t* ending (Edel 1955/1964:348), as can be seen in Ex.396.

(396)

ḫpr	*sḏȝt*	*r*	*mȝ=f*	*ky*	*zp*
happen.PST	travel.INF	PURP	see.INF=3MSG	other	time

A travelling happened in order to see it another time.
Urk. I, 182.11
5th dynasty, Djedkare

Furthermore, *hȝ.t* in (Ex.395) could also be an infinitive form, since the verb *hȝi* was a weak verb and thus also took a *t* ending in the infinitive (Gardiner 1957:214). The use of the

preposition *r* followed by an infinitive is well documented from Old Egyptian (Ex.397), as is the infinitive taking its own subject after a preposition, thus it is viable for Ex.394-395 to show examples of *r* + infinitive + subject, rather than the terminative.

(397) *rḏi* *ḥm=f* *ḥ3y(=i)* *r* *sḏm* *wʿ.k*
cause.PST majesty=3MSG descend.FUT=1SG PURP hear.INF be_alone.STV
His majesty caused that I descend, in order to hear alone.
Urk. I, 100.14 (Edel 1955/1964:359)
6th dynasty

Consequently, the earliest indisputable example of the terminative, in which the content verb does not take a *.t* ending in its infinitive form and thus cannot be an infinitive, dates from the eighth dynasty[172] (Ex.398). However, examples of the writing *r sḏm.t=f* which are semantically viable with terminative meaning, such as Ex.394-395, are feasible candidates for interpretation as the terminative construction, even if this may not be conclusively determined on the basis of form.

(398) *ir* *{ḫr}* *ḥr(y)-tp* *sr* *nb* *nfr-n* *ḫsff* *ḫt*
as_for chief official any NEG oppose.PRS.PTCP things
m *sp3t=f* *n* *sw* *nb* *ỉr.t(y)=sn(y)* *sšrw* *pn*
in nome=3MSG against men any do.FUT.REL=3PL things this
r *pḥ.t* *nswt* *t3yty* *z3b* *ṯ3ty* *srw*
TRM arrive.TRM king shrouded_one dignitary vizier officials
As for any chief or official who does not take action in his nome, against any men who will do these things, until the king, the shrouded one, the dignitary, the vizier, and the officials arrive....
Urk. I, 306.2-4
8th dynasty, Demedjibtawy

As well as the preposition *r* being used with before the infinitive and *sḏm.t=f*, it is also attested before the future or nominal *sḏm=f*, and *sḏmw=f* (Edel 1955/1964:386-387). Furthermore, *sḏm.t=f* is also attested after the preposition *ḏr*[173], although *r* was the most commonly used preposition before *sḏm.t=f* (Allen 2010:316). *ḏr sḏm.t=f* typically provided the meaning of 'before' (Zonhoven 1997:18), and can be definitively attested from Old Egyptian (Edel 1955/1964:369-370).

[172] It has previously been remarked that the earliest certain evidence of the terminative is attested from Middle Egyptian (Edel 1955/1964:368), although this 8th dynasty example shows that that is not the case.

[173] Gardiner (1957:321-322) suggested several potential examples of *sḏm.t=f* after the prepositions *m* (BM EA 614, 12-13), *m-ḫt* (Urk. IV, 814.11-12), *ḫft* (Urk. IV, 740.7) and *mỉ* (Urk. IV, 492.7). However, since all potential examples of *sḏm.t=f* after these prepositions contain weak or irregular content verbs (Gardiner 1957:321), it is quite possible to interpret each of these verb forms as an infinitive. The lack of examples with verbs which do not take the ending *t* in the infinitive has led more recent Egyptological opinion to view these as examples of the infinitive, rather than of *sḏm.t=f* (Allen 2010:316).

(399) *i-nḏ* *wsir* *ppy* *pn* *m-ᶜ=f* *ḏr* *ḥḏ.t* *t3*
save.IMP Osiris Pepy this from=3MSG before become_bright.TRM land
Save this Osiris Pepy from him before the land becomes bright.
PT1334a[P] (Edel 1955/1964:370)
6th dynasty, Pepy I

(400) *ḏd* *rn=i* *in* *s3tw* *ḏr* *ḫnd.t=k* *ḥr=i*
say.IMP name=1SG so_says ground before tread.TRM=2MSG on=1SG
Say my name, so says the ground, before you tread on me.
CT V, 186f-g[B10C] (Allen 2010:316)
Early 12th dynasty

sḏm.t=f could also be found after the negative marker *n*, expressing the meaning 'not yet'. *n sḏm.t=f* will be discussed further in section 2.o.i.[174].

The linguistic form *r sḏm.t=f*, having been first attested in Old Egyptian, was used throughout Middle Egyptian without any changes visible from the written form.

(401) *m* *mdw* *n=f* *r* *i3š.t=f*
NEG.IMP speak.NCOMP DAT=3MSG TRM summon.TRM=3MSG
Don't speak to him until he summons.
P. Prisse, 7.1 (Gardiner 1957:321)
12th dynasty

(402) *wḫḏ=k* *3* *wi* *r* *ḫpr.t* *sp=i*
be_patient_with.FUT=2MSG PART 1SG TRM exist.TRM success=1SG
r *rḫ.t=k* *sḫrw[=i]*
TRM know.TRM=2MSG condition=1SG
May you be patient with me, until my success exists, until you know my condition.
Fowler, 38-39 (Komorowska 2012:257)
Late 12th dynasty

(403) *m* *sḏr* *grḥ* *mi* *hrw* *r* *spr.t=k* *r* *3bḏw*
NEG sleep.IMP night like day TRM arrive.TRM=2MSG at Abydos
Don't sleep (at) night like day, until you arrive at Abydos.
Stela of Neferhotep, 13 (Zonhoven 1997:31)
13th dynasty, Neferhotep I

By Late Egyptian, *r* was the only preposition which could be used before *sḏm.t=f*[175], with use of *ḏr sḏm.t=f* having died out by the New Kingdom (Zonhoven 1997:14) This shows the specialisation, in which the variety of formal choices narrows as grammaticalisation occurs (Hopper 1991:22), of *sḏm.t=f*. That it was *r sḏm.t=f* which survived, having been the mostly commonly used linguistic form in the structure of preposition + *sḏm.t=f* (Allen 2010:316),

[174] See pg.223-224.
[175] Use of *n sḏm.t=f*, which used a negative marker rather than a preposition, also continued into Late Egyptian.

shows that linguistic forms formed preposition + *sḏm.t=f* conformed to the 'survival of the frequent' theory (Haspelmath 2004:18, Winter 1971).

Use of the linguistic form *r sḏm.t=f* is still attested in the 19th dynasty.

(404)

di=f	*n=k*	*ỉ3wt*	*nfrt*	*sby=k*			
give.PST=3MSG	DAT=2MSG	old_age	good	pass.FUT=2MSG			
p3	*ʿḥʿw*	*n*	*nḏm-ib*	*r*	*pḥ.t=k*	[*r*]	*im3ḫ*
the	lifetime	in	joy	TRM	reach.TRM=2MSG	[to]	veneration

He gave to you a good old age so that you may pass the lifetime in joy, until you have reached veneration.
LEM, 37.9-10 (Winand 1992:295)
19th dynasty, Seti II, year 1

By this time another linguistic form, *ỉ-ỉr.t=f sḏm*[176], was also in use, and during the 19th dynasty the layering of these two linguistic forms can be seen.

(405)

im	*ḫ3*[ʿ].*tw=ỉ*	*ỉry=ỉ*	*n*	*ḥ3ty=ỉ*
allow.IMP	release.FUT.PASS=1SG	act.FUT=1SG	according_to	heart=1SG

ỉ-ỉr.t	*p3*	*nṯr*	*ỉrt*	*p3*	*nty*	*m*	*ỉb=f*
TRM-AUX.TRM	the	god	do.INF	the	REL	in	heart=3MSG

Allow me to be released so that I may act according to my heart, until the god does that which is in his heart.
LES, 2.13-14 (Gardiner 1930:233)
19th dynasty

(406)

mtw=k	*s3w*	*n=ỉ*	*p3*	*k3*
AUX.CONJ=2MSG	guard.INF	DAT=1SG	the	bull

ỉ-ỉr.t(=ỉ)	*ỉỉt*	*m*	*p3*	*dmyt*
TRM-AUX.TRM=1SG	return.INF	from	the	town

....and guard the bull for me until I return from the town.
LES, 34.3-4 (Gardiner 1930:232)
19th dynasty

(407)

ptr	*di=ỉ*	*n=tn*	*p3y*	*50*	*n*	*ḫ3r*	*n*	*bdt*	*r*	*r-ʿ-ʿnḫ*
look	give.PST=1SG	DAT=2PL	these	50	GEN	sack	GEN	emmer	for	sustenance

ỉ-ỉr.t	*pr-ʿ3*	*ʿ.w.s.*	*dit*	*n=tn*	*diw*
TRM-AUX.TRM	pharaoh	l.p.h.	give.INF	DAT=2PL	rations

Look, I gave you these 50 sacks of emmer for (your) sustenance until pharaoh l.p.h. gives you rations.
RAD, 57.4-5 (Frandsen 1974:107)
20th dynasty, Ramesses III, year 29

[176] It has previously been postulated that a distinct form of the terminative construction existed as a bridging stage between *r sḏm.t=f* and *ỉ-ỉr.t=f sḏm*. Gardiner (1930:234) suggested the hypothetical form *r ỉr.t=f sḏm*, with *ỉ-ỉr.t=f sḏm* following as a writing with 'graphic suppression of the preposition' (Gardiner 1930:234). This unattested form has been accepted as a stage of the terminative's development by scholars such as Junge, who wrote that after *r sḏm.t=f* the terminative 'then adopts the periphrastic form *r-ỉr.t=f-sḏm*' (Junge 2001:99), but produced no examples of this. It has also been postulated by Kruchten that the successor of the *r sḏm.t=f* form 'is found in early Ramesside texts as *ỉ.sḏm.tw.f*' (Kruchten 2000:63), however, like Junge, Kruchten provided no examples.

The linguistic form *i-ir.t=f sḏm* shows the auxiliarification of the terminative construction, through the addition of the verbal lexeme *ir*, as occurred in several other Egyptian verbal constructions[177]. As with such auxiliarifications of *ir*[178], the auxiliarification of *ir* in the terminative construction involved the loss of several of the verbal properties of *ir*, along with its lexical meaning, allowing it to be categorised in stage three of the decategorialisation and desemanticisation chains. This shows the syntactic and semantic divergence of this auxiliary from the verbal lexeme *ir*, although the lack of any observable cliticisation or erosion ensured there was no morphological divergence between these, nor any evidence in writing of phonological divergence.

	Desemanticisation	Decategorialisation	Cliticisation	Erosion	Verb-to-TAM
ir – verbal lexeme	1	1	1	1	A
ir – terminative auxiliary	3	3	1	1	D/E

Table 47 – Stages reached by each form of ir in each of the four linguistic shift chains and overarching verb-to-TAM chain.

The auxiliarification of the terminative construction also occurred concurrently with a change in word order from VS to SV. As in many other constructions, this occurred due to the auxiliary taking the place and form previously held by the content verb[179]. However, within the terminative construction, the pre-auxiliarification form of the content verb had a verb ending, *.t*, something not seen in any of the constructions discussed so far[180]. That the auxiliary *ir* took on the verb ending *.t* in the linguistic form *i-ir.t=f sḏm* provides more explicit evidence that an auxiliary of verbal origin took on the form previously held by the content verb than constructions in which the content verb did not have any verb ending in the pre-auxiliarification linguistic form.

[177] Past, habitual, negative habitual, causative imperative, negative causative imperative, causative infinitive, finalis, not yet, temporal.
[178] With the exception of the first auxiliarification of *ir* in the negative causative imperative. See pg.43-48 for further detail.
[179] See 3.a.iii.1. and 3.a.iv.1.
[180] The only exception to this is in the negative present construction, in which the linguistic form immediately prior to auxiliarification showed a verb ending *.n* after the content verb. However, the lexeme auxiliarified in this construction was a preposition, and would thus not have been able to, or expected to, take a verb ending. Furthermore, auxiliarification in this construction involved the auxiliarification of a previously non-verbal construction, which then replaced *n sḏm.n=f*, rather than the direct auxiliarification of *n sḏm.n=f* itself. See pg.106-109.

The auxiliarification of the terminative construction caused an increase in analyticity, focussed around the verb ending *.t* and the elements connected to it. Most obviously this was due to the increase in the quantity of distinct elements of the construction from the addition of the auxiliary *ir*. Furthermore, the auxiliarification of the terminative construction also caused an increase in the autonomy of the content verb, since the subject of the construction was no longer dependent upon it, and it was no longer in an inflected form, but an infinitive.

As well as auxiliarification and an increase in analyticity, *i-ir.t=f sḏm* also shows the erosion of its first element from *r* to *i*[181]. A similar erosion may be seen in the prepositional lexeme *r*, for which the writing *r* () alternated with *i* () in Late Egyptian (Erman 1933:299) before nouns (Junge 2001:28), as in Ex.201 and Ex.409. However, the preposition was more typically written with *r* (, or  before plural pronominal subjects (Černý & Groll 1993:96)), as in Ex.408, although the erosion of the preposition *r* to a vowel may certainly be seen in the Coptic writing ⲉ. Consequently, the fact that *i* was always used in the writing of the terminative, while the preposition predominantly used *r*, is enough to show that this element in the terminative construction was no longer thought of as the prepositional lexeme.

(408) *sꜣw=tn* *r* *pṯḥ*
guard.FUT=2PL against Ptah
May you guard against Ptah....
K*RI* III, 772.2
19th dynasty, Ramesses II

(409) *i-ḏbꜣ* *wsir*
on_behalf_of Osiris
....on behalf of Osiris....
P. BM EA 10800, 6
21st – 22nd dynasties

The divergence of *i* in the terminative construction from the prepositional lexeme *r* is emphasised further by the desemanticisation, decategorialisation and cliticisation of *i* in the terminative. Most importantly in relation to the linguistic cycle, this element underwent affixation (Komorowska 2012:259), and thus *i* may be categorised as a prefix rather than an independent word, as it had been as a prepositional lexeme. This consequently increased the interdependency of this element on other parts of the construction, since a prefix is more dependent on other elements than an independent word.

[181] In other constructions the opposite replacement of the writing *i* () by *r* () can be seen, such as in participles (see K*RI* IV, 316.2). This likely shows the phonological similarity of *r* and *i* at this stage.

The erosion and increased interdependency of *i* shows an increase in syntheticity of this element of the terminative construction. However, since this move towards the synthetic end of the analytic-synthetic scale was less substantial than the move towards the analytic end caused by auxiliarification, on the whole the development from *r sḏm.t=f* to *i-ir.t=f sḏm* shows a part of the analyticisation of the terminative construction. The concurrent increase in analyticity and syntheticity within different parts of the construction is similar to the development of the negative present construction in later Egyptian, in which the obligatorification of *iwn3/in* increased analyticity, while the loss of *ḥr* and *m* increased syntheticity[182].

The analyticisation of the terminative construction was continued further with the following linguistic form *š3ʿ i-ir.t=f sḏm*. This form is first attested in the *Tale of Wenamun*, from the 21st dynasty (Winand 2011:541).

(410)

im	*in.tw=f*	*š3ʿ*	*i-ir.t=i*	*šmi*	*r*	*rsy*
cause.IMP	bring.FUT.PASS=3MSG	TRM	TRM-AUX.TRM=1SG	return.INF	to	south

Cause that it be brought until I return to the South.
LES, 70.12
21st dynasty

This linguistic form shows the addition of the preposition *š3ʿ*, which in its lexical usage could expressed the meaning 'until'[183].

(411)

ntk	*p3y=w*	*nby*	*š3ʿ*	*ḏt*
2MSG	POSS=3PL	protector	until	eternity

You are their protector until eternity.
P. BM EA 9999, 9.5
20th dynasty, Ramesses IV

The use of *š3ʿ* in the terminative construction served to reinforce the semantic marker of its 'until' meaning, the expression of which had been weakened by the earlier desemanticisation of *r*.

As with the earlier addition of the auxiliary *ir*, the addition of *š3ʿ* increased the quantity of distinct elements which made up the terminative construction, consequently increasing the analyticity of the construction. Furthermore, the addition of *š3ʿ* to the terminative construction increased the overall autonomy of its elements, since *š3ʿ* was added as an independent word, rather than prefixed to the rest of the construction. At a localised level

[182] See pg.112-114.
[183] Although the lexical meaning of 'until' was similar to the meaning of the terminative construction, the other meanings of the prepositional lexeme *š3ʿ*, 'from' and 'since', could certainly not be applied in this context.

the addition of *šꜣˁ* caused an increase in the analyticity of the semantic marker, with no change taking place in the rest of the construction. Since this localised increase in analyticity was the only change in analyticity or syntheticity across the construction, at a generalised level the analyticity of the construction also increased.

2.n.ii. Syntheticisation (*šꜣˁ i-ir.t=f sḏm* > *šꜣˁ.t=f sḏm* > *šˁ.t=f sḏm* / *šˁ.mt=f sḏm* > ⲱⲁⲧⲉⲕⲥⲱⲧⲙ / ⲱⲁⲛⲧⲉⲕⲥⲱⲧⲙ)

The syntheticisation of the terminative began with the development from *šꜣˁ i-ir.t=f sḏm* to *šꜣˁ.t=f sḏm*. As with *šꜣˁ i-ir.t=f sḏm*, *šꜣˁ.t=f sḏm* is first attested in the 21st dynasty text the *Tale of Wenamun*[184], in which its use shows the interchangeability with *šꜣˁ i-ir.t=f sḏm* both within the same text and with the same content verb (Ex.412-413).

(412)

wn	*iw=i*	*ḏbꜣ=f*	*n=k*	*m*	*pꜣy=i*	*wḏꜣ*
IMPF	AUX.FUT=1SG	reimburse.INF=3MSG	DAT=2MSG	from	POSS=1SG	storehouse
šꜣˁ.t=w	*gmy*	*pꜣy=k*	*iṯꜣy*	*n*	*rn=f*	
AUX.TRM=3PL	fInd.INF	POSS=2MSG	thief	GEN	name=3MSG	

I would reimburse it for you from my storehouse, until they found your thief, whatever his name.
LES, 62.15-16
21st dynasty

(413)

iw=f	*wꜣḥ*	*m-di=i*		
AUX.FUT=3MSG	remain.INF	with=1SG		
[*šꜣ*]ˁ	*i-ir*(*.t*)*=n*	*gmy*	*pꜣ*	[....]
TRM	TRM-AUX.TRM=1PL	find.INF	the	

It shall remain with me until we have found the....
LES, 64.5-6
21st dynasty

šꜣˁ.t=f sḏm shows the orthographic loss of *i* and *ir* from the earlier *šꜣˁ i-ir.t=f sḏm*, with a lack of evidence of either of these elements in later writings indicating that loss also occurred in the spoken form of the construction. The loss of *ir* in particular removed the element to which the verb ending *.t* was attached, and thus an alternative was required. As the only other remaining expression of the construction's grammatical meaning, and as the only element written before *.t*, the obvious candidate for this was *šꜣˁ*. The ability to take a verb ending shows that *šꜣˁ* had become an auxiliary, likely caused by the contemporary use of *šꜣˁ* as a preposition and a verb, and the regular appearance of *šꜣˁ* in the terminative

[184] *šꜣˁ.t=f sḏm* is also attested in P. Boulaq 6 (11.6), which probably also dates to the 21st dynasty (Winand 2011:547), although it is not clear whether or not this text was composed earlier than *Wenamun*.

construction (Komorowska 2012:260). This would also have been possible due to the loss of *ir*, which left the construction without an auxiliary.

The loss of *ir* from this construction ensures that it may no longer be categorised in further stages of the verb-to-TAM chain, showing that it was never auxiliarified further than its initial stage of auxiliarification.

	Desemanticisation	Decategorialisation	Cliticisation	Erosion	Verb-to-TAM
ir – verbal lexeme	1	1	1	1	A
ir – terminative auxiliary	3	3	1	1	D/E
š3ʿ.t=f sḏm	N/A	N/A	N/A	N/A	N/A

Table 48 – Stages reached by each form of ir in each of the four linguistic shift chains and overarching verb-to-TAM chain.

However, the new auxiliary *š3ʿ* may be analysed with respect to the adposition-to-TAM chain. As with all lexical items, the prepositional lexeme *š3ʿ* may be classed in stage A of this chain. In contrast, *š3ʿ* in *š3ʿ.t=f sḏm* had undergone desemanticisation and decategorialisation, reaching the final stage of each of these chains. In terms of desemanticisation, *š3ʿ* may be found with non-human subjects, as in Ex.414, and had lost its lexical meaning, allowing it to be classed in stage three of the desemanticisation chain (Heine 1993:54). In terms of decategorialisation, it is clear that *š3ʿ* has lost is prepositional properties, as evidenced by its ability to take on the verb ending *.t*, and thus has reached stage five of this chain (Heine 1993:55). However, *š3ʿ* shows no evidence of cliticisation or erosion, thus ensuring it may be classed no further along the adposition-to-TAM chain than stage D, although it exhibits some features of stage E (Heine 1993:62-64).

(414)

š3ʿ.t	*iḫ*	*iy*	*iw=i*	*dy*	*ḫ3ʿ.tw*
AUX.TRM	what	come.INF	AUX.FUT=1SG	here	be_abandoned.STV

Until what comes shall I be abandoned here?
LES, 73.16-74.1
21st dynasty

	De-semanticisation	De-categorialisation	Cliticisation	Erosion	Adposition-to-TAM
šȝʿ – prepositional lexeme	1	1	1	1	A
šȝʿ – terminative auxiliary	3	5	1	1	D/E

Table 49 – Stages reached by each form of šȝʿ in each of the four linguistic shift chains and overarching verb-to-TAM chain.

The development of *šȝʿ i-ir.t=f sḏm* to *šȝʿ.t=f sḏm* caused an increase in the syntheticity of the terminative construction, through a decrease in the quantity of elements, and an increase in their interdependency. This increase in syntheticity at a localised level affected both the semantic marker elements and those centred around the verb ending *.t*. In the marker elements the loss of *i* caused a decrease in the quantity of elements, while in the elements centred around *.t*, the loss of *ir* caused the same. The increase in interdependency of the construction was due to the change in category of *šȝʿ*. As a preposition, *šȝʿ* had been rather autonomous from the other elements of the construction, but as an auxiliary it took on the ending *.t*, the subject was dependent on it, and in the case of the pronominal subject was suffixed to it, and the content verb was its complement. Thus the interdependency of *šȝʿ* to the rest of the construction had significantly increased. The coalescence of the verb ending *.t* and *šȝʿ* marked the first time in the written history of the terminative construction that the two elements which provided its meaning were not separated by at least one other element of the construction, with these becoming one grammatical unit. As *šȝʿ* and *.t* were both non-root morphemes, this instance of coalescence involved the process of compounding (Heine & Reh 1984:32).

Use of *šȝʿ.t=f sḏm* is attested until the 26th dynasty.

(415) *šȝʿ.t=i* *ptr* *mdt* […] *šmi* *pr-ʿȝ* [*ʿ.w.s.*]
AUX.TRM=1SG see.INF thing go.FUT pharaoh l.p.h.
Until I see a thing....that pharaoh l.p.h. will go.
P. Vandier, 5.9
26th dynasty

(416) [*b*]*w* *iry* *ḥȝty=f* *ḳr* *šȝ*[*.t*]*=f* *iry* *n=f*
NEG AUX.NEG.HBT heart=3MSG rest.INF AUX.TRM=3MSG acquire.INF DAT=3MSG
pȝ *ḏbȝw* *n* *tȝ* *i-ir=f* *n=f*
the reward GEN the REL-do.PST=3MSG DAT=3MSG
His heart does not rest until he acquires for himself the reward of that which he did to him.
P. Brooklyn 47.218.135, 2.16-17
26th dynasty or later

(417) *m* *ḥs* *šꜣʿ.t=f* *rḫ*
NEG.IMP praise.INF AUX.TRM=3MSG know.INF
pꜣ *ʿꜣ* *n* *tꜣ* *ir=k* *n=f*
the greatness GEN the do.PST.REL=2MSG DAT=3MSG
Don't praise until he knows the greatness of that which you did for him.
P. Brooklyn 47.218.135, 5.7
26th dynasty or later

In Demotic, the terminative was written *šʿ.t=f sḏm*[185], giving orthographic evidence of the erosion of *šꜣʿ* to *šʿ*. This reduced the length of this element, causing a slight increase in syntheticity.

	De-semanticisation	De-categorialisation	Cliticisation	Erosion	Adposition-to-TAM
šꜣʿ – prepositional lexeme	1	1	1	1	A
šꜣʿ – terminative auxiliary	3	5	1	1	D/E
šʿ – terminative auxiliary	3	5	1	2	E

Table 50 – Stages reached by each form of šꜣʿ and šʿ in each of the four linguistic shift chains and overarching verb-to-TAM chain.

(418) *šʿ.t* *ʿnḫ-ḥr* *sꜣ* *nswt* *di* *n=y* *pꜣ* *sʿnḫ*
AUX.TRM Ankh-Hor son king give.INF DAT=1SG the stipend
....until Ankh-Hor, the son of the king, has given me the stipend.
Petubastis, 3.10-11 (Johnson 1976:229)
c.0-99CE

[185] Some modern practice typically writes this linguistic form with the ending *.tw*, but earlier linguistic forms with the ending *.t*. However, the use of *.tw* (𓏏𓅱) for *.t* can first be seen in the linguistic form *i-ir.t=f sḏm*. The writing *.tw* for *.t* served to illustrate the retention of *t* in this construction, and was not unique to the terminative, but reflected the use of *.tw* to indicate a retained *t* in a broader context across the Egyptian language from Late Egyptian onwards. The alternation between *t* and an alternate orthography continued in the terminative construction through to Coptic, in which either ⲧ or ⲧⲉ could be used.

(419) *nhm* *ḳnḥyt* [....] *t3y=f* *wpt*
rejoice.PST shrine POSS=3MSG work
šʿ.t *sḏm* *t3* *imyt* *ikšt*
AUX.TRM hear.INF the cat Nubian
A shrine rejoiced[...] his work until the Nubian cat heard.
Mythus, 4.26-27[186] (Johnson 1976:229)
c.100-199CE

(420) *fy=s* *r* *kmy* *irm=f* *šʿ.t=s* *pḥ* *r* *nḫb*
fly.PST=3FSG to Egypt with=3MSG AUX.TRM=3FSG reach.INF to Nekheb
She flew to Egypt with him until she reached Nekheb.
Mythus, 21.3 (Johnson 1976:228)
c.100-199CE

Within Demotic, an orthographic variation of the terminative, *šʿ.mt=f sḏm*, was also in use in the written language (Johnson 1976:226).

(421) *iir=k* *ʿš* *n3y* *šʿ-mt* *p3* *wyn* *ḫpr*
AUX.FUT=2MSG recite these AUX.TRM the light come_into_being.INF
You should recite these until the light comes into being.
Magical, 7.18-19 (Johnson 1976:228)
c.200-299CE

(422) *my* *n=f* *p3* *wywy....*
give.IMP DAT=3MSG the quarrel
šʿ-mt=w *prḏ* *r* *n3y=w* *iryw*
AUX.TRM=3PL separate.INF from POSS=3PL companions
Give the quarrel to him....until (they) are separated from their companions....
Magical, 13.8-9 (Johnson 1976:201)
c.200-299CE

šʿ.mt=f sḏm is likely to be an unetymological writing, reflecting the contemporary pronunciation of the spoken form, while *šʿ.t=f sḏm* reflected the construction's historical spelling. The use of *.t* rather than *.mt* in certain texts indicates that any similarity of .t in the terminative with the conjunctive *mtw*[187] is coincidental, and the terminative *šʿ.mt=f sḏm* was not formed from the conjunctive (Johnson 1976:227-228), as was suggested by Spiegelberg (1925:71-72) and Gardiner (1930:234).

As an orthographic variation, the development of *šʿ.mt=f sḏm* did not impact the syntheticity of the construction.

The successors of both orthographies, *šʿ.t=f sḏm* and *šʿ.mt=f sḏm*, continued to be used in Coptic, although different Coptic dialects made use of different orthographies. Sahidic,

[186] This example shows the linguistic form *šʿ.t sḏm=f*, rather than the typical *šʿ.t=f sḏm*. The existence of such a form may suggest that *šʿ.t* underwent generalisation, or that the use of *sḏm=f* after semantic markers in other constructions spread to the terminative construction through analogy, although no other example of *šʿ.t sḏm=f* exists on the corpus used for this thesis, suggesting this may have been a scribal error.
[187] See pg.246-249.

Fayumic, Oxyrhynchitic and Lycopolitan used only ⲯⲁⲛⲧⲉⲫⲥⲱⲧⲙ (Allen 2013:179), successor of the Demotic *š^{c}.mt=f sḏm*, whilst the Boharic and Akmimic dialects used ⲯⲁⲧⲉⲫⲥⲱⲧⲙ[188], successor of *š^{c}.t=f sḏm*, alongside ⲯⲁⲛⲧⲉⲫⲥⲱⲧⲙ (Gardiner 1930:231).

The linguistic form ⲯⲁⲛⲧⲉⲫⲥⲱⲧⲙ exhibits the result of orthographic change from *m* to ⲛ. It is likely this involved little phonological change, if any, with the phonological value of these two graphemes having become similar at an earlier stage.

(423) ⲛⲉ-ϥ-ⲯⲟⲟⲡ ⲇⲉ ⲉⲙ-ⲡ-ⲙⲁ ⲉⲧ-ⲙⲙⲁⲩ ⲯⲁⲛⲧⲉ-ⲏⲣⲱⲇⲏⲥ ⲙⲟⲩ
IMPF-3MSG-be.INF PART in-the-place REL-there AUX.TRM-Herod die.INF
And he was in that place until Herod died.
Matt., 2.15 (Layton 2000:275)
c.750-799CE

The change from /m/ to /n/ was quite common across Egyptian during Demotic and Coptic, and can be seen both in other grammatical constructions, such as the temporal (Late Egyptian *m ḏr=f sḏm*> Demotic *n ḏr=f sḏm* > Coptic ⲛⲧⲉⲣⲉⲫⲥⲱⲧⲙ) and conjunctive (Demotic *mtw=f sḏm* > Coptic ⲛⲫⲥⲱⲧⲙ), and in lexemes, such as ⲛⲟⲩⲛⲉ, 'root', from *mnyt* (Černý 1976:109), and the preposition *n*/ⲛ, 'with', from *m* (Černý 1976:102). Consequently, this development in the terminative construction shows that it was affected by broader changes occurring across the Egyptian language.

ⲯⲁⲧⲉⲫⲥⲱⲧⲙ and ⲯⲁⲛⲧⲉⲫⲥⲱⲧⲙ also show the effects of coalescence. This occurred differently for forms of the terminative with pronominal subjects and those with nominal subjects. In forms with pronominal subjects the auxiliary and the subject were already inseparable, due to the historical use of suffix pronouns to express pronominal subjects in this construction. Subsequently, coalescence here involved the affixation of this auxiliary-subject group to the content verb (Ex.424). In forms with nominal subjects, coalescence involved the affixation of the auxiliary and subject, which had been independent in earlier linguistic forms, while the content verb remained separable (Ex.425).

[188] The element ⲧⲉ in both ⲯⲁⲛⲧⲉⲫⲥⲱⲧⲙ and ⲯⲁⲧⲉⲫⲥⲱⲧⲙ shows the orthographic change of the earlier *.t*. As in earlier forms of the terminative, this element could also appear as ⲧ, since the presence of ⲉ was simply used to indicate that this was a retained *t*, as the writing of an additional *w* was previously (see n.172). The presence of ⲉ was more common in certain forms than others, appearing more frequently in forms with 2nd person feminine singular and 2nd person plural pronominal subjects and those with nominal subjects, although it could appear optionally in forms with pronominal subjects in the 2nd person masculine singular, 3rd person masculine singular, 3rd person feminine singular and 1st person plural (Reintges 2004:294), and otherwise was omitted altogether.

(424) ⲧ-ⲛⲁ-ⲟⲱ ϣⲁⲛⲧ-ϣⲱⲡⲉ ⲟⲛ
1SG-AUX.FUT-wait.INF AUX.TRM.1SG-exist.INF again
I will wait until I exist again....
Job, 14 :14
c.900-999CE

(425) ⲁⲩⲱ ϣⲁⲛⲧⲉ-ⲟⲩ ⲟⲉ ϣⲱⲡⲉ
and AUX.TRM-what PART happen.INF
ⲛ-ⲓ-ⲛⲁ-ϫⲟⲟⲥ ⲁⲛ ⲙ-ⲡⲉ-ⲕ-ⲗⲁⲟⲥ
NEG-2MSG-AUX.FUT-say.INF NEG DAT-POSS-2MSG-people
ⲉ-ⲧⲣⲉ-ⲩ-ⲗⲟ ⲉ-ⲩ-ⲡⲏⲧ ⲛⲥⲁ-ⲛⲉ-ⲩ-ⲥⲛⲏⲩ
to-AUX.CAUS_INF-3PL-stop.INF CIRC-3PL-run.INF after-POSS-3PL-brothers
And until what happens will you not tell your people to stop pursuing their brothers?
2 Sam., 2.26
892-893CE

The coalescence of the terminative construction caused the auxiliary *šʿ* to become an affix as ϣⲁ, showing its completion of the cliticisation chain (Heine 1993:55-56). Furthermore, since verbal prefixes in Coptic could not carry stress (Reintges 2004:34), ϣⲁ had clearly also reached the final stage of the erosion chain (Heine 1993:56). This allows ϣⲁ to be categorised in stage G of the adposition-to-TAM chain.

	De-semanticisation	De-categorialisation	Cliticisation	Erosion	Adposition-to-TAM
šɜʿ – prepositional lexeme	1	1	1	1	A
šɜʿ – terminative auxiliary	3	5	1	1	D/E
šʿ – terminative auxiliary	3	5	1	2	E
ϣⲁ – terminative affix	3	5	3	3	G

Table 51 – Stages reached by each form of šɜʿ, šʿ and ϣⲁ in each of the four linguistic shift chains and overarching verb-to-TAM chain.

The coalescence of the terminative construction also caused an increase in the interdependency of its elements, which consequently caused an increase in the syntheticity of the construction.

2.n.iii. Conclusions

Overall the analyticisation and syntheticisation of the terminative construction show the linguistic cycle pattern at both a generalised and localised level. At a general level, the linguistic cycle can be seen in the initial increases in analyticity and subsequent increases in syntheticity in the of the terminative as a whole. At a localised level, the linguistic cycle can be seen separately in the semantic marker elements of prepositional origin, *r* and *šɜʿ*, and the verb ending *.t* and its attached elements. The linguistic cycle can be seen in the development of the semantic marker of the construction through it initially becoming more synthetic through phonological reduction, then becoming more analytic through the addition of *šɜʿ*, and finally becoming more synthetic again through the loss of *i* and erosion of *šɜʿ* to *šʿ*. This pattern of syntheticisation, analyticisation, syntheticisation shows a more extended linguistic cycle pattern than that which the terminative construction as a whole went through, with an additional initial syntheticisation stage.

The linguistic cycle in the development of the verb ending *.t* and its connected elements first involved analyticisation, caused by the auxiliarification which affected the terminative construction. This is first attested at the same time as the first localised syntheticisation of the semantic marker, showing that at a localised level different parts of a construction did not necessarily undergo changes in the same direction on the analytic-synthetic scale. The syntheticisation of the elements connected to *.t* is first evidenced at the same time as the first process in the second syntheticisation of the semantic marker (*šɜʿ i* > *šɜʿ*), and began through the loss of *ir*. The fact that no change in the analyticity or syntheticity of the elements centred around *.t* occurred concurrently to the analyticisation of the semantic marker shows that the level of syntheticity of part of a construction could change without affecting that of the rest of the construction, but still affecting the analyticity or syntheticity of the construction as a whole. The localised linguistic cycle pattern for the verb ending *.t* and its connected elements is the same as that of the full forms of the terminative, in that it first went through analyticisation and then syntheticisation. However, unlike the full forms of the terminative, the analyticisation of the elements connected to the verb ending *.t* occurred across only one change in linguistic form, rather than across several, showing that this process was more gradual at the generalised level.

The terminative construction is the only construction other than the negative causative imperative in which the linguistic cycle is visible at both a general level, and within the construction at a localised level. In the negative causative imperative construction this was

caused by the auxiliarification of the semantic marker *m dy* in addition to the processes which typically caused analyticisation and syntheticisation in other constructions. However, in the terminative construction, this was caused by the weakening of the preposition which served as the semantic marker and the consequent addition of a second preposition to contribute to the terminative meaning of the construction, which was only later auxiliarified once the auxiliary added in the auxiliarification of the content verb had been lost.

Consequently, the terminative construction does not fit into the pattern regularly attested from other constructions, in which the semantic markers of constructions were not affected by auxiliarification or analyticisation, but instead the development of the semantic marker in the terminative construction contributed significantly to the analyticisation of this construction. However, the terminative construction does concur with other constructions in that its semantic marker was affected by the processes involved in the syntheticisation of the construction.

2.o. Not Yet

n sḏm.t=f > *bw sḏm.t=f* > *bw ỉr.t=f sḏm* > ⲙⲡⲁⲧⲣⲥⲱⲧⲙ

The not yet construction was used frequently in narrative contexts (Zonhoven 1997:42), typically being translated with 'not yet' or 'before'. Throughout each language stage it most typically 'expresses a present-based description of the past in terms of what has not happened up to now and expresses the expectation that it can or will eventually occur' (Layton 2000:261).

2.o.i. Analyticisation (*n sḏm.t=f* > *bw sḏm.t=f* > *bw ỉr.t=f sḏm*)

The earliest attested linguistic form of the not yet construction is *n sḏm.t=f*, formed from the negative marker *n*, the content verb, the verb ending *.t* and the subject. *n sḏm.t=f* is first attested from Old Egyptian.

(426)

ms(w)	*ppy*	*nfr-kꜣ-rꜥ*	*pn*	*ỉn*	*ỉt=f*	*ỉtm*
bear.PST.PASS	Pepy	Neferkare	this	by	father=3MSG	Atum
n	*ḫpr.t*	*pt*	*n*	*ḫpr.t*	*tꜣ*	
NY	come_into_being.NY	sky	NY	come_into_being.NY	earth	

This Pepy Neferkare was born by his father Atum when the sky had not yet come into being, and when the earth had not yet come into being....
PT1466b-c[P] (Edel 1955/1964:370)
6th dynasty, Pepy I

(427)

ms(w)	*ppy*	*nfr-kꜣ-rꜥ*	*ỉn*	*nw*	*ḥr*	*ḏrt=f*	*ỉꜣbt*
bear.PST.PASS	Pepy	Neferkare	by	Nun	at	hand=3MSG	left
ppy	*nfr-kꜣ-rꜥ*	*nḫn(.w)*	*n*	*sꜣꜣ.t=f*			
Pepy	Neferkare	be_young.STV	NY	be_wise.NY=3MSG			

Pepy Neferkare was born by Nun at his left hand while Pepy Neferkare was young, when he was not yet wise.
PT1701a-b[N] (Zonhoven 1997:42)
6th dynasty, Pepy II

The linguistic form *n sḏm.t=f* shows a strong similarity to the earliest attested form of the terminative construction, *r sḏm.t=f*[189], through its use of *sḏm.t=f* to express the content verb and subject of the construction.

As with the comparable terminative *r sḏm.t=f*, *n sḏm.t=f* remained orthographically stable throughout Old and Middle Egyptian.

[189] See pg.207-208.

(428) *sr=sn* *ḏꜥ* *n* *ii.t=Ø*
foretell.FUT=3PL stormy_wind NY come.NY
nšny *n* *ḫpr.t=f*
violent_storm NY happen.NY=3MSG
They would foretell a stormy wind when (it) had not yet come, and a violent storm when it had not yet happened.
MES, 42.10-11 (Gardiner 1957:317)
12th dynasty

(429) *mḥy=i* *ḥr* *msw=s* *sdw* *m* *swḥt*
be_concerned.FUT=1SG for children=3FSG break.PST.PTCP.PASS in egg
mɜw *ḥr* *n* *ḫnty* *n* *ꜥnḫ.t=sn*
see.PST.PTCP face GEN Khenty NY live.NY=3PL
I will be concerned for her children, who were broken in the egg,
who saw the face of Khenty when they had not yet lived.
Man & Ba, 78-80
12th dynasty, Amenemhat III

(430) *ḥɜḳ.n=[f* *dmi* *n]* *ḳdšw*
capture.PST.2nd=3MSG town GEN Kadesh
n *tš.t=i* *r* *bw* *ḫr=f*
NY be_absent.NY=1SG from place under=3MSG
It was before I was absent from his presence that he captured the town of Kadesh.
Urk. IV, 892.8-9
18th dynasty, Thutmose III & Amenhotep II

By Late Egyptian the negative marker *n* in this linguistic form had undergone an orthographic change to *bw*, leading to the writing *bw sḏm.t=f* which was used in early Late Egyptian (Neveu 2015:74). This orthographic change from *n* to *bw* also occurred around the same time in the negative past[190] and negative habitual[191] constructions, and in each construction involved no phonological change, since *n* and *b*(*w*) had the same phonological value at the time at which these changes occurred (Clère 1956). Consequently, the development from *n* to *bw* shows no change in the phonological length of this element, and thus did not affect the analyticity of the construction.

[190] See pg.74-75.
[191] See pg.128.

(431) *wnn* *bw* *dy.t=Ø* *n=f*
AUX.NOM[192] NY give.NY DAT=3MSG
[n]hy *n* *ḥryt* *ḳ3y* *n* *šnty*
some GEN gunwale high GEN acacia_wood
ḫr *bw* *dy.t=Ø* *n=f*
PART NY give.NY DAT=3MSG
nhy *n* *ḥryt* *ḳ3y* *n* *im* *gr*
some GEN gunwale high GEN *im*_wood either
The fact is that it had not yet been given some high gunwales of acacia wood, and it had not yet been given some high gunwales of *im*-wood either.
LEM, 42.14-16 (Neveu 2015:75)
19th dynasty, Seti II, year 1

(432) *bw* *rḫ.t=tw* *pḥ* *n* *n3* *mšwš* *r-mi-n3*
NY know.NY=PASS arrival GEN the Meshwesh here
An arrival of the Meshwesh here is not yet known.
LRL, 24.6-7 (Frandsen 1974:40)
20th dynasty, Ramesses XI, year 2 or later

By the 19th and 20th dynasties, use of *bw sḏm.t=f* was rare, and only occurred with a small variety of verbs, namely *rdi*, *iri*, *šm*, and *rḫ* (Neveu 2015:74), as in Ex.431-432.

However, by this time a new linguistic form, *bw ir.t=f sḏm*, was in use, being first attested from the reign of Seti I (Winand 1992:291). *bw ir.t=f sḏm* is attested more frequently than *bw sḏm.t=f* during the 19th dynasty (Neveu 2015:74), and consequently replaced *bw sḏm.t=f* as the most common linguistic form used to express the not yet construction, later becoming the only linguistic form by the end of 20th dynasty. Use of *bw ir.t=f sḏm* as the only linguistic form of the not yet construction also continued throughout Demotic.

(433) *ḫr* *bw* *ir.t* *rmṯ* *m* *n3* *nty* *tw=k* *h3b=w* *{ḥr}* *snny*
and NY AUX.NY person from the REL 2MSG send.INF=3PL pass_by.INF
ḥr=i *ḏd=f* *n=i* *ḥr* *ʿ=k*
upon=1SG say.FUT=3MSG DAT=1SG about condition=2MSG
....and no person from those who you sent has yet passed by me so that he may speak to me about your condition....
LEM, 67.15-16 (Neveu 2015:74)
19th dynasty, Seti II

(434) *ḫr* *bw* *ir.t=k* *h3b* *n=i* *nfr* *bin*
PART NY AUX.NY=2MSG send.INF DAT=1SG good bad
But you have not yet sent (word) to me, good or bad.
P. Nevill, verso, 3-4 (Neveu 2015:74)
20th dynasty

[192] For *wnn* as a nominalisation converter see Neveu (2015:152).

(435) *ỉir* *irp* *ꜥw* *ỉw* *bw* *ỉr.t=w* *glp=f*
2nd wine mature.INF CIRC NY AUX.NY=3PL uncover.INF=3MSG
Wine matures only when it has not yet been uncovered.
Onchsheshonqy, 19.23 (Johnson 1976:217)
Late Ptolemaic

(436) *bw* *ỉr.t* *rʒ=t* *šwy*
NY AUX.NY mouth=2MSG be_dry.INF
Your mouth had not yet become dry.
Mythus, 7.32 (Johnson 1976:217)
c.100-199CE

(437) *mtw=k* *ỉny* *wꜥ* *ḫm-ḫl* *ỉw=f* *wꜥb*
AUX.CONJ=2SG bring.INF a young_man CIRC=3MSG be_pure.STV
ỉw *bw* *ỉr.t=f* *šm* *ỉrm* *sḥmt*
CIRC NY AUX.NY=3MSG go.INF with woman
And you should bring a young man who is pure, who has not yet gone with a woman.
Magical, 3.11 (Johnson 1976:217)
c.200-299CE

The development of *bw ỉr.t=f sḏm* involved the process of auxiliarification, through the addition of *ỉr* as an auxiliary. This occurred similarly to auxiliarification with *ỉr* in other constructions[193], with *ỉr* experiencing desemanticisation and decategorialisation, but showing no evidence of cliticisation or erosion[194]. This auxiliarification also occurred concurrently with a change in word order from VS to SV.

	Desemanticisation	Decategorialisation	Cliticisation	Erosion	Verb-to-TAM
ỉr – verbal lexeme	1	1	1	1	A
ỉr – not yet auxiliary	3	3	1	1	D/E

Table 52 – Stages reached by each form of ỉr in each of the four linguistic shift chains and overarching verb-to-TAM chain.

Due to the addition of *ỉr* as an auxiliary, the linguistic form *bw ỉr.t=f sḏm* contained a greater quantity of elements than its predecessor *bw sḏm.t=f*, and thus exhibited a greater level of analyticity. Furthermore, this auxiliarification resulted in the movement of the subject from being dependent on the content verb to being dependent on the auxiliary, as

[193] Past, habitual, negative habitual, causative imperative, negative causative imperative, causative infinitive, finalis, terminative, temporal. With the exception of the first auxiliarification of *ỉr* in the negative causative imperative.
[194] See pg.43-48 for further detail.

well as the content verb taking an infinitive form, and thus caused an increase in the autonomy of the content verb, further increasing the analyticity of the not yet construction.

2.o.ii. Syntheticisation (*bw ir.t=f sḏm* > ⲙⲡⲁⲧⲣⲥⲱⲧⲙ)

Within the Coptic language stage, the attested linguistic form of the not yet construction is ⲙⲡⲁⲧⲣⲥⲱⲧⲙ, the successor of *bw ir.t=f sḏm*.

(438) ⲡ-ϫⲟⲉⲓⲥ ⲁⲙⲟⲩ ⲉⲡⲉϣⲏⲧ ⲉ-ⲙⲡⲁⲧⲉ-ⲡ-ⲁ-ϣⲏⲣⲉ ⲙⲟⲩ
the-lord come.IMP down CIRC-AUX.NY-POSS-1SG-son die.INF
Lord, come down while my son has not yet died.
John, 4.49 (Layton 2000:261)
c.400-499CE

(439) ⲙⲡⲁⲧⲉ-ⲟⲩ-ⲗⲗⲉⲕⲧⲱⲣ ⲙⲟⲩⲧⲉ ⲛ-ⲥⲉⲡ-ⲥⲛⲁⲩ
AUX.NY-a-rooster call.INF on-time-two
ⲕ-ⲛⲁ-ⲁⲡⲁⲣⲛⲁ ⲙⲙⲟ-ⲓ ⲛ-ϣⲙⲛⲧ-ⲥⲱⲙⲡ
2MSG-AUX.FUT-deny.INF OBJ-1SG on-three-time
When a rooster has not yet crowed twice, you will deny me three times.
Mark, 14.72 (Layton 2000:261)
c.450-499CE

(440) ⲉ-ⲙⲡⲁⲧⲉ-ⲥⲟⲟⲩ ⲛⲛⲉⲃⲟⲧ ⲟⲩⲉⲓⲛⲉ
CIRC-AUX.NY-six GEN-the-month pass_by.INF
ⲉ-ⲡ-ⲙⲟⲩ ⲛ-ⲛⲉ-ⲩ-ⲉⲓⲟⲧⲉ
from-the-death GEN-POSS-3MSG-parents
While six months had not yet passed since the death of his parents....
Antony, 2
822-823CE

ⲙⲡⲁⲧⲣⲥⲱⲧⲙ shows the development of the negative marker from *bw* to ⲙⲡ. This involved orthographic change, from which phonological change is not necessarily indicated, similar to the comparable development from *m* to ⲙⲡ in the negative causative imperative[195]. It is most likely that ⲡ was intrusive in such contexts, possibly acquired by analogy from the negative past ⲙⲡⲉⲩⲥⲱⲧⲙ. However, a full investigation into this is beyond the scope of this thesis.

ⲙⲡⲁⲧⲣⲥⲱⲧⲙ also shows the erosion of *ir* to ⲁ. Although this differed from the change from *ir* to ⲣⲉ which occurred in the majority of constructions in which *ir* was used as an auxiliary[196], it was identical to the erosion of *ir* to ⲁ visible from the Coptic form of the past construction[197]. Consequently, ⲁ in the not yet construction may be categorised in the same stages of the desemanticisation, decategorialisation, cliticisation and erosion chains, as well

[195] See pg.189.
[196] Habitual, negative habitual, causative imperative, negative causative imperative, causative infinitive, finalis, temporal.
[197] See pg.48.

as the verb-to-TAM chain, as ⲁ in the past construction, having reached the final stage of each of these chains of development[198].

	Desemanticisation	Decategorialisation	Cliticisation	Erosion	Verb-to-TAM
ir – verbal lexeme	1	1	1	1	A
ir – not yet auxiliary	3	3	1	1	D/E
ⲁ – not yet affix	3	5	3	3	G

Table 53 – Stages reached by each form of ir and ⲁ in each of the four linguistic shift chains and overarching verb-to-TAM chain.

The final fixed element within the not yet construction remained identical in ⲙⲡⲁⲧⲫⲥⲱⲧⲙ, where it appeared as ⲧ, to its phonological form in earlier forms of the construction, where it was written *.t*. This element remained consistent in its form and its position directly before the subject throughout the entire development of this construction, just as occurred with the similar *.t*/ⲧ in the terminative construction[199].

As with other Egyptian verbal constructions, the not yet construction experienced coalescence, which is visible from its Coptic written form. As in the majority of cases of coalescence in other constructions this involved the coalescence of all elements of the construction in the forms used with pronominal subjects (Ex.441), and all elements save for the content verb in the forms used with nominal subjects (Ex.442).

(441) ⲙⲡⲁⲧⲉ-ⲧⲛ-ⲉⲓ ⲅⲁⲣ
AUX.NY-2PL-come.INF PART
For you have not yet come....
Deut., 12.9
c.300-399CE

(442) ⲉ-ⲙⲡⲁⲧⲉ-ⲥⲟⲓⲛⲉ ⲅⲁⲣ ⲉⲓ ⲉⲃⲟⲗ ⲥⲓⲧⲛ-ⲓⲁⲕⲱⲃⲟⲥ
CIRC-AUX.NY-certain PART come.INF out from-James
For before certain (people) came from James....
Gal., 2.12
c.500-599CE

This coalescence was the primary cause of the increase of syntheticity within the not yet construction, as it significantly increased the interdependency between the elements of the

[198] See pg.49-50 for further detail.
[199] See 2.n.

construction. The erosion of *ir* to ⲁ also caused a slight increase in syntheticity, since it reduced the length of this element.

2.o.iii. Conclusions

The use of the linguistic form *n sḏm.t=f* as the earliest attested form of the not yet construction may lead to the expectation that the development of this construction would be similar to that of the terminative construction, due to the significant morphological similarity between *n sḏm.t=f* and the earliest attested terminative form *r sḏm.t=f*.

One development which was identical in these two constructions was the retention of the verb ending *.t* from the earliest linguistic form of a marker followed by *sḏm.t=f*, through each subsequent linguistic form, down to the final attested linguistic form of the construction in Coptic. This shows that this element was consistently considered vital within each construction. Furthermore, both constructions utilised the verbal lexeme *ir* as an auxiliary, although this also occurred in eight other constructions[200], and so does not necessarily show a similarity which is due to the early commonality between these two constructions.

However, the not yet construction exhibits significantly fewer changes and a lower quantity of linguistic forms across its development than the terminative construction. This is due in part to the weakening and subsequent strengthening of *r* within the terminative construction, since the element in the equivalent position in the earliest linguistic form of the not yet construction, *n*, only underwent orthographic changes in the development of this construction. Consequently, the development of the not yet construction does not exhibit localised cases of the linguistic cycle pattern, as occurred in the terminative construction[201], but instead shows a similar pattern to many of the other constructions discussed so far, in that the initial marker (*n* > *bw* > ⲙⲡ) was unaffected by the analyticisation of the construction, but was affected by the processes involved in its syntheticisation. Furthermore, the terminative construction indicates the loss of the elements *i* and *ir*, as well as the erosion of *š3ʿ* to *šʿ*, before exhibiting the results of coalescence, ensuring that the syntheticisation of this construction involved multiple different forms and is visible across three language stages, beginning within Late Egyptian and continuing into Demotic and Coptic. In contrast, the syntheticisation of the not yet

[200] Past, habitual, negative habitual, causative imperative, negative causative imperative, causative infinitive, finalis, temporal.
[201] See pg.221-222.

construction only involved the development of one linguistic form, which occurred through coalescence and erosion visible in Coptic .

2.p. Temporal

ḏr sḏm=f > *m ḏr sḏm=f* > *n drt sḏm=f* > *n drt ir=f sḏm* > ⲛⲧⲉⲣⲉⲫⲥⲱⲧⲙ

The temporal was used throughout each Egyptian language stage in a subordinate clause, in which 'the time of the action of the temporal clause was [most typically] anterior to the time of the action of the main clause' (Johnson 1976:232)[202]. This construction is typically translated using 'when', 'after' or 'since'.

2.p.i. Analyticisation (*ḏr sḏm=f* > *m ḏr sḏm=f* > *n drt sḏm=f* > *n drt ir=f sḏm*)

The earliest attested form of the temporal construction was *ḏr sḏm=f*, which is attested from Old Egyptian. This was comprised of the preposition *ḏr*, meaning 'when' or 'since', followed by the content verb and subject. Winand has shown that in Late Egyptian the content verb and subject appeared in the future *sḏm=f* (Winand 1992:256), although in earlier periods it is possible that the expression of the content verb and subject after *ḏr* was not limited to the future *sḏm=f*[203].

(443)

ꜣbd	*1*	*r*	*nn*	*n*	*hrww*	*ḏr*	*wḏ(=i)*
month	1	to	these	GEN	days	TEMP	place.FUT=1SG
ḥ(=i)	*m*	*twt*	*pn*	*nt*	*m*	*ḥ(=i)*	
hand=1SG	on	statue	this	REL	in	hand=1SG	

It is 1 month to these days since I placed my hand on this statue, which is in my hand.
Wepemnefret, 6th register, 2nd scene (Edel 1955/1964:224)
Mid-late 5th dynasty

(444)

ꜣw	*ib*	*n*	*nṯrw*	*m*	*tti*	*ḏr*	*mꜣꜣ=sn*	*tti*
rejoice.FUT	heart	GEN	gods	through	Teti	TEMP	see.FUT=3PL	Teti

The hearts of the gods will rejoice through Teti when they have seen Teti.
PT715c[T] (Edel 1955/1964:224)
6th dynasty, Teti

The preposition *ḏr* could also be used before *sḏm.t=f*[204], resulting in a similar linguistic form to the earliest attested linguistic forms of the terminative and not yet constructions.

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[202] See also Junge (2001:226); Reintges (2004:291); Layton (2000:270).
[203] The form of the content verb *mꜣꜣ* in Ex.444 shows that, if this is taken to be a future form like in later periods, in Old Egyptian this appeared in the prospective *sḏm=f*, in which the doubling of the final consonant in geminating verbs occurred, rather than the subjunctive *sḏm=f*, in which this doubling did not occur, and in which case the expected form of *mꜣꜣ* would be *mꜣ*. However, the doubling in *mꜣꜣ* could also indicate that this is a nominal *sḏm=f*. Since the prospective *sḏm=f* had mostly died out by Middle Egyptian, and the Middle Egyptian future *sḏm=f* morphologically corresponded to the subjunctive *sḏm=f*, it is possible that the form of the content verb and subject in the temporal experienced a slight change.
[204] See Ex.399-400 (pg.209).

ḏr sḏm.t=f most commonly gave the meaning 'before' or 'until' (Zonhoven 1997:18), contrasting with the anteriority of the temporal *ḏr sḏm=f*.

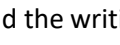
The temporal *ḏr sḏm=f* continued to be used in Middle Egyptian.

(445) *ḥr=f* *r=s* *[ḏr]* *ms.tw=f*
face=3MSG to=3SG TEMP bear.FUT.PASS=3MSG
His face was towards it since he was born.
MES, 21.10 & 12 (Gardiner 1957:131)
Late Middle Kingdom

(446) *iw* *ṯs.n(=i)* *i-stp*
AUX raise_up.PST=1SG PTCP-dismantle.PST.PASS.NOM
ḥ3t-ʿ *ḏr* *wn* *ʿ3mw* *m* *ḳb* *n* *t3-mḥw* *ḥwt-wʿrt*
beginning TEMP be.FUT ʿ3mw in middle GEN Lower_Egypt Avaris
I raised up what had been dismantled, beginning when the Aamu were in the middle of the land of Lower Egypt (in) Avaris.
Urk. IV, 390.6-7 (Gardiner 1957:131)
18th dynasty, Hatshepsut

However, within Late Egyptian *ḏr sḏm=f* is only attested for a short time, being last attested from the reign of Ramesses II in the 19th dynasty (Winand 1992:249).

(447) *m* *di* *ḫpr=f* *mi* *p3* *sḫr*
NEG allow.IMP become.FUT=3MSG like the attitude
ir.n=k *n=i* *ḏr* *wnn=i* *dy* *m* *mn-nfr*
make.PST=2MSG DAT=1SG TEMP be.FUT=1SG here in Memphis
Don't allow that he become like the attitude you had to me when I was here in Memphis.
K*RI* I, 239.11-12 (Winand 1992:247)
19th dynasty, Seti I

Within the same time period, during the reign of Ramesses II, a new linguistic form of the temporal is first attested, with an additional element having been added to the construction, expanding the marker *ḏr*. The first attested form was written with *m n ḏr* () (Ex.448) before the future *sḏm=f* of the content verb and subject (Winand 1992:248). However this orthography was not particularly common throughout Late Egyptian, and instead the writing *m ḏr* () (Ex.449-451) appeared far more frequently (Winand 1992:248). The writing *m ḏr sḏm=f* is first attested from the reign of Merenptah (Winand 1992:248).

(448) *m-mitt* *ḏd* *n=i* *p3y=i* *nb* *m n ḏr* *iwt=i*
like say.PST.REL.NOM DAT=1SG POSS=1SG lord TEMP come.FUT=1SG
....like what my lord said to me when I came.
K*RI* II, 895.2
19th dynasty, Ramesses II

(449) *bw* *sḏm=f<k>* *m ḏr* *i-ḏd*[205]*(=i)* *n=k*
NEG listen.HBT=2MSG TEMP speak.FUT=1SG DAT=2MSG
You do not listen when I speak to you.
LEM, 82.13-14 (Winand 1992:248)
19th dynasty, Merenptah, year 1

(450) *ḫd* *in* *tȝ[ty]* *tȝ* *m ḏr* *iw=f*
travel_northwards.INF by vizier Ta TEMP come.FUT=3MSG
r *iṯȝ* *nȝ* *nṯrw* *n* *ʿ-rsy* *r* *pȝ* *ḥb-sd*
PURP take.INF the gods GEN southern_province to the Sed_festival
Travelling northwards by the vizier Ta after he came to take the gods of the southern province to the Sed festival.
RAD, 55.15-16 (Neveu 2015:113)
20th dynasty, Ramesses III, year 29

(451) *iw=tw* *dit* *n=f* *irt=f* *m ḏr* *pḥ=f* *st*
AUX.SEQ=PASS give.INF DAT=3MSG sight=3MSG TEMP reach.FUT=3MSG 3PL
....and he was given his sight when he reached them.
K*RI* VI, 474.12-13
20th dynasty, Ramesses IX, year 16

The development of *m ḏr sḏm=f* shows the expansion of the semantic marker through the addition of a second prepositional element, essentially turning the simple preposition *ḏr* into a compound preposition. This caused an increase in the quantity of elements within the construction, and consequently caused an increase in the analyticity of the temporal construction.

Although *m ḏr* is the most common orthography attested for the marker of the temporal construction throughout Late Egyptian (Winand 1992:248), the use of several other orthographies of this element in *m ḏr sḏm=f* can be seen, indicating the functional change of *m ḏr* from a compound preposition to a more grammatical marker. Winand (1992:248) noted eight different orthographies[206] of the marker of the temporal construction in Late Egyptian: the older *ḏr* (), not attested after the reign of Ramesses II as noted above; *m n ḏr* () and the more common *m ḏr* (); and several writings which are 'des essais pour serrer de plus près la réalité phonologique' (Winand 1992:249): *m ḏrty* () (Ex.452) and *n ḏrty* () (Ex.453), attested only in the *Tale of the Two Brothers*; and *m di* () (Ex.454), *m dit* (), and *m diȝyt* () (Ex.455).

[205] *i-ḏd* is 'une graphie exceptionnelle du verbe *ḏd* derrière *m-ḏr*' (Winand 1992:248).
[206] Each of these is provided here with every phonetic sign transliterated to highlight the orthographic variation. It would not have been the case that each of these would have been pronounced, or that these orthographies would have varied as much in pronunciation as it may seem from the variety in literal transliterations given here.

(452) *iw=f* *rmy* *m ḏrty* *ptr<=f*
AUX.SEQ=3MSG weep.INF TEMP see.FUT=3MSG
pȝy=f> *sn* *šri* *sḏr* *m-r-ˁ* *mt*
POSS=3MSG brother younger lie_down.STV also be_dead.STV
And he wept when he saw his younger brother lying down and dead.
LES, 22.16-23.1
19th dynasty

(453) *ir* *n ḏrty* *iwt=f* [*r*] *itȝ* *n=k* *prt*
PART TEMP come.FUT=3MSG PURP take.INF DAT=2MSG seed
....when he came to take seed for you....
LES, 14.3
19th dynasty

(454) *ḫr-iw* *mbwpw=w* *ḳrs* *irm* *pȝy=i* *it*
although AUX.NEG.PST=3PL bury.INF with POSS=1SG father
m di *ḳrs=f* *pȝy=f* *it* *ḥnˁ* *tȝy=f* *m(w)t*
TEMP bury.FUT=3MSG POSS=3MSG father and POSS=3MSG mother
....although they did not bury with my father when he buried his father and his mother.
P. Boulaq 10, 9-10
20th dynasty, Ramesses III, year 8

(455) *iw=f* *ḫpr* *mtt* *n=f* *m diȝyt* *pḥ=n* *niwt*
AUX.SEQ=3MSG become.INF sink.STV DAT=3MSG TEMP reach.FUT=1PL town
....it had become sunk when we reached the town.
LRL, 46.6-7
20th dynasty, Ramesses XI, year 28

These variations in orthography reflect changes in the phonological form of *m ḏr sḏm=f*. The writings with *di* show the loss or erosion of *r*[207] in the spoken form of *m ḏr*, while writings with *ty* or *t* show similarities to the later writing of this element in Coptic, ⲛⲧⲉ, and indicate the devoicing of *d*.

Such developments can also be seen in the orthographies of this element attested in Demotic. The linguistic form of the temporal used in Demotic is typically referred to as *n drt=f sḏm* in modern practice. However, writings with orthographic but phonologically equivalent variations of *n drt*, such as *n tȝy* (Ex.457) or *nty iw*, are also attested (Johnson 1976:230).

(456) *ḥlg=f* *r* *nȝy=f* *ḫrṯw*
embrace.PST=3MSG OBJ POSS=3MSG children
n drt *gm=f* *st* *iw=w* *ˁnḫ*
TEMP find.FUT=3MSG 3PL CIRC=3PL live.STV
He embraced his children when he found them alive.
Setne, 5.35 (Johnson 1976:232)
Ptolemaic

[207] For an example of the erosion of *r* to *i* see pg.212.

(457) *nꜣ* *mdwt* *n tꜣy* *ḏd=w* *st* *n=k*
the words TEMP say=3PL 3PL DAT=2MSG
ỉn *ḏd=k* *st* *ỉir-ḥr* *rmt* *nb* *n* *pꜣ* *tꜣ*
PART say.PST=2MSG 3PL to person any in the land
The words, when they said them to you, did you say them to any person in the land?
Onchsheshonqy, 3.15 (Johnson 1976:232)
Late Ptolemaic

(458) *n drt* *gm=k* *wsir* *ḥr* *pꜣy=f* *rms* *n* *ḏwfe* *tḥn*
TEMP find.FUT=2MSG Osiris upon POSS=3MSG boat GEN papyrus faience
When you find Osiris upon his boat of papyrus and faience....
Magical, 6.31 (Johnson 1976:232)
c.200-299CE

The orthographic change from *m* to *n* is concurrent with the broader phonological environment. The elements *m* and *n* were often interchangeable at this time and later, showing that they were phonologically similar[208].

Like several of the Late Egyptian orthographic variations of *m ḏr*, the orthography *n tꜣy* indicates a similar phonology to the Coptic ⲛⲧⲉ, suggesting that the spoken form of this element already had a phonological value more similar to that indicated from the Coptic orthography than that of Middle Egyptian. The orthography *n drt* likely shows a historical spelling of this element.

Evidence of an auxiliarified form of the temporal construction, *n drt ỉr=f sḏm*, can be seen from Demotic, although Johnson (1976:230-232) has noted that this only appears in one text, the Demotic chronicle.

(459) *n drt* *ỉr=f* *sḫn*
TEMP AUX.TEMP=3MSG command.INF
When he commanded....
Demotic Chronicle, 4.1 (Johnson 1976:232)
First half of Ptolemaic period

This linguistic form shows the auxiliarification of the temporal construction through the addition of the verbal lexeme *ỉr* as an auxiliary, similar to the auxiliarification which occurred in multiple other constructions[209]. As in other constructions, this auxiliarification ensured that *ỉr* in *n drt ỉr=f sḏm* may be categorised in stage three of the desemanticisation and decategorialisation (Heine 1993:54-55) chains, stage one of the cliticisation and erosion chains (Heine 1993:55-56), and stage D of the overarching verb-to-TAM chain (Heine

[208] See pg.219.
[209] Past, habitual, negative habitual, causative imperative, negative causative imperative, causative infinitive, finalis, terminative, not yet.

1993:61-62), while exhibiting some features of stage E (Heine 1993:62-64)[210]. This auxiliarification also occurred concurrently with a change in word order from VS to SV.

	Desemanticisation	Decategorialisation	Cliticisation	Erosion	Verb-to-TAM
ir – verbal lexeme	1	1	1	1	A
ir – temporal auxiliary	3	3	1	1	D/E

Table 54 – Stages reached by each form of ir in each of the four linguistic shift chains and overarching verb-to-TAM chain.

The addition of *ir* to the temporal construction caused an increase in the quantity of elements within the constructions, and consequently caused an increase in analyticity. As with other constructions, this auxiliarification of *ir* also caused an increase in the autonomy of the content verb.

Despite there being extremely limited attestations of *n drt ir=f sḏm* (Johnson 1976:230-232), it is highly likely that this linguistic form was more widely used than is evident from surviving texts. Since it was this linguistic form which provided the predecessor for the subsequent most common form of the temporal construction, **ⲛⲧⲉⲣⲉⲫⲥⲱⲧⲙ**, which was the only linguistic form in use for this construction in Coptic, *n drt ir=f sḏm* must have become the most common form of the temporal construction by late Demotic, at the very least in the spoken language, with use of *n drt sḏm=f* having died out by Coptic.

2.p.ii. Syntheticisation (*n drt ir=f sḏm* > **ⲛⲧⲉⲣⲉⲫⲥⲱⲧⲙ**)

As with multiple other Egyptian verbal constructions, the syntheticisation of the temporal construction is visible from the linguistic form which was used in Coptic, in this case **ⲛⲧⲉⲣⲉⲫⲥⲱⲧⲙ**.

(460) **ⲛⲧⲉⲣⲉ-ⲣⲟⲩϩⲉ** **ⲇⲉ** **ⲟⲛ** *ⲯⲱⲡⲉ* **ⲁ-ⲩ-ⲧ-ⲟⲩⲱ** **ⲉ-ⲩ-ⲣ-ϩⲱⲃ**
AUX.TEMP-evening PART again occur.INF AUX.PST-3PL-stop.INF CIRC-3PL- do.INF-work
When evening occurred again they stopped working.
Pachomius, 6.5 (Reintges 2004:292)
c.800-899CE

[210] See pg.43-48 for further detail.

(461) ⲁ-ⲥ-ⲯⲱⲡⲉ ⲇⲉ ⲛⲧⲉⲣⲉ-ⲓ-ⲃⲱⲕ ⲉ-ⲡ-ⲛⲟⲩⲛ
AUX.PST-3FSG-happen.INF PART AUX.TEMP-1SG-go.INF to-the-abyss_of_hell
ⲁ-ⲓ-ⲛⲁⲩ ⲉ-ⲙ-ⲙⲁ-ⲛ-ⲯⲱⲡⲉ ⲛ-ⲛⲉ-ⲫⲩⲭⲟⲟⲩⲉ ⲧⲏⲣ-ⲟⲩ
AUX.PST-1SG-see.INF OBJ-the-place-GEN-existence GEN-the-souls all-3PL
It happened that when I went to the abyss of hell, I saw the places of existence of all the souls.
Ac. A&P, 198.72-73 (Reintges 2004:293)
800CE or later

The development of ⲛⲧⲉⲣⲉⲫⲥⲱⲧⲙ shows the standardisation of an orthography which reflected the phonological form of this construction more closely than its historical spelling. However, some orthographic variation remains visible across the Coptic dialects, with Akhmimic using the writing (ⲛ)ⲧⲁ- rather than ⲛⲧⲉ- (Till 1931:55), in which ⲁ appears in place of ⲉ and ⲛ was non-obligatory.

ⲛⲧⲉⲣⲉⲫⲥⲱⲧⲛ also shows the slight erosion of *ir* to ⲣⲉ. This corresponds with the development of *ir* in several other constructions in which it was used as an auxiliary[211]. As in such other constructions, this development of *ir* to ⲣⲉ involved sufficient erosion to allow ⲣⲉ to be categorised in stage three of the erosion chain. Moreover, the involvement of this element in the coalescence of the construction, as detailed below, caused the development of this element from an independent word to an affix, allowing it to be classed in stage three of the cliticisation chain, as well as stage five of the decategorialisation chain, since this affixation shows the loss of any remaining verbal properties, such as the ability to be conjugated. Consequently, ⲣⲉ may be categorised in stage G of the verb-to-TAM chain.

	Desemanticisation	Decategorialisation	Cliticisation	Erosion	Verb-to-TAM
ir – verbal lexeme	1	1	1	1	A
ir – temporal auxiliary	3	3	1	1	D/E
ⲣⲉ – temporal affix	3	5	3	3	G

Table 55 – Stages reached by each form of ir and ⲣⲉ in each of the four linguistic shift chains and overarching verb-to-TAM chain.

[211] Habitual, negative habitual, causative imperative, negative causative imperative, causative infinitive, finalis.

The coalescence of the temporal construction in the development of the linguistic form ⲛⲧⲉⲣⲉⲫⲥⲱⲧⲙ was similar to that in other Egyptian verbal constructions, in that it involved the coalescence of all elements within the construction in the forms used with pronominal subjects, and all elements save for the content verb in the forms used with nominal subjects. Evidence for the inseparability of all elements in forms with pronominal subjects, but the possible separability of the content verb from the other elements of the construction in forms with nominal subjects can be evidenced from the placement of external elements in each form of the construction, such as the particle ⲇⲉ as illustrated in Ex.462-463. In a form with a pronominal subject (Ex.462), ⲇⲉ was placed after the entirety of the temporal construction, showing that this form behaved as a single prosodic unit. However, in a form with a nominal subject (Ex.463), ⲇⲉ was placed after ⲛⲧⲉⲣⲉ and the subject, but before the content verb, showing that ⲛⲧⲉⲣⲉ and the subject formed a single prosodic unit, but the content verb was separable from the rest of the construction.

(462) ⲛⲧⲉⲣⲉ-ⲟⲩ-ⲥⲉⲓ ⲇⲉ ⲡⲉϫⲁ-ⲥ ⲛ-ⲛⲉ-ⲥ-ⲙⲁⲑⲏⲧⲏⲥ
AUX.TEMP-3PL-be_satisfied.INF PART speak.PST-3MSG DAT-POSS-3MSG-disciple
But when they were satisfied, he spoke to his disciples.
John, 6.12 (Layton 2000:271)
c.400-499CE

(463) ⲛⲧⲉⲣⲉ-ϩⲧⲟⲟⲩⲉ ⲇⲉ ⲯⲱⲡⲉ
AUX.TEMP-dawn PART come_into_existence.INF
ⲛⲉ-ⲩⲛ-ⲟⲩ-ⲛⲟⲃ ⲛ-ⲯⲧⲟⲣⲃ ⲯⲟⲟⲡ ϩⲛ-ⲙ-ⲙⲁⲧⲟⲓ
IMPF-INDEF-a-great ADJ-disturbance occur.STV among-the-soldier
When dawn came to be, a great disturbance occurred among the soldiers.
Acts, 12.18 (Layton 2000:271)
c.525-575CE

This coalescence caused a significant increase in the interdependency of the elements of the temporal construction, and consequently caused an increase in the syntheticity of the construction. This syntheticity was further increased by the erosion of *ir* to ⲣⲉ, which reduced the length of this element, and consequently caused a slight reduction in the length of the construction.

2.p.iii. Conclusions

While in a significant number of Egyptian verbal constructions analyticisation was caused by auxiliarification alone, the development of the temporal construction shows an alternative means of increasing analyticity. This occurred through the expansion of the marker of the construction, which developed from *ḏr* to *m ḏr*, with the addition of the preposition *m* increasing the length of the semantic marker, and subsequently the length of the construction. This contrasts with many other constructions, in which semantic markers

were not affected by analyticisation, however it does show a similarity to the development of the terminative construction, in which the expansion of the marker from  to caused an increase in analyticity. The temporal construction did also undergo auxiliarification of the content verb, as occurred in all Egyptian verbal constructions, in addition to the expansion of its semantic marker. The lack of any increase in syntheticity between these developments ensured that they each contributed to the same analyticisation stage. Furthermore, the syntheticisation of the temporal construction was caused by similar processes as those involved in the syntheticisation of other Egyptian verbal constructions, involving coalescence and erosion, with syntheticisation affecting all elements of the construction.

2.q. Conjunctive

ḥnᶜ sḏm ntf > *ḥnᶜ ntf sḏm* > *mtw=f sḏm* > ⲛⲏⲥⲱⲧⲙ

The conjunctive construction detailed here is not attested in the corpus used for this thesis until Middle Egyptian. This is similar to the perfect, in which a separate perfect construction is not attested in earlier Egyptian, and is only attested from Demotic onwards[212]. However, while in earlier Egyptian the perfect could be expressed through the use of the contemporary linguistic form of the past construction, Old and 'Middle Egyptian ha[ve] no form limited to the function of the Late Egyptian conjunctive' (Loprieno 1980:6), although Middle Egyptian shows the emergence of a linguistic form which would later develop this function.

Throughout each language stage in which it was used the Egyptian conjunctive construction functioned syntactically as a non-initial main clause (Černý & Groll 1993:440), in which it 'expresses mere continuation or succession; it does not express any kind of subordination' (Černý & Groll 1993:440), and thus was 'a form which "conjoins" various expressions' (Junge 2001:104).

2.q.i. Development of a Separate Conjunctive Construction (*ḥnᶜ sḏm ntf* > *ḥnᶜ ntf sḏm*)

The first attested linguistic form of the conjunctive construction is *ḥnᶜ sḏm ntf*, comprised of the auxiliarified preposition *ḥnᶜ*, an infinitive of the content verb, and the actor[213]. This was based on the construction *ḥnᶜ sḏm* (Ex.465), containing a form of *ḥnᶜ*, which was slightly grammaticalised in comparison to the fully lexical preposition *ḥnᶜ* used with noun complements, followed by an infinitive of the content verb. *ḥnᶜ sḏm* in turn derived from the prepositional lexeme *ḥnᶜ*, 'and', followed by a noun phrase (Ex.464). *ḥnᶜ sḏm* could be used to continue an injunction or to 'co-ordinate an infinitive with a preceding infinitive' (Gardiner 1957:130). The primary difference between *ḥnᶜ sḏm ntf* and its source construction *ḥnᶜ sḏm* was that 'the latter cannot con-join actions with different actors, because it [typically] does not have an actor expression of its own' (Depuydt 1993b:109), while, in contrast, *ḥnᶜ sḏm ntf* always contained an actor expression.

[212] See pg.54.

[213] The expression of the actor using the independent pronoun or *in* + noun did not have the direct properties of a subject, so is referred to as 'actor' here. This element within the conjunctive construction can be seen to have been reanalysed into a direct subject in the linguistic form *mtw=f sḏm* (see pg.248).

(464) *wiꜣ=f* *wr* *n* *nḥḥ* *ḥnꜥ* *ḏt*
sacred_bark=3MSG great GEN eternity and forever
....his great sacred bark of eternity and forever....
Lesestücke, 71.4
12th dynasty, Senwosret III

(465) *swḏꜣ-ib* *[pw* *n]* *nb* *ꜥ.w.s.*
communication COP DAT lord l.p.h.
[ḥr *r]dit* *di=tw* *ib* *ḫnt….*
about cause.INF give.FUT=IMPRS heart in_front_of
ḥnꜥ *rdit* *di=tw* *ib* *ḫnt*
and cause.INF give.FUT=IMPRS heart in_front_of
This is a communication to the lord l.p.h. about causing that one give attention to.... and causing that one give attention to....
P. UC 32210, 9-14
Second half of 12th dynasty

Within the corpus used for this thesis, the earliest example of the linguistic form *ḥnꜥ sḏm ntf* dates from the early 12th dynasty. When the actor of this linguistic form was pronominal an independent pronoun was used as the actor expression (Ex.466), whilst when the actor was nominal *in* + noun was used (Ex.467).

(466) *m-ḫt* *st(ꜣ)* *tkꜣ* *m* *ḥwt-nṯr*
after light.INF torch in temple
ḥnꜥ *prt* *ntsn* *m-sꜣ* *ḥm-kꜣ=f*
and go_out.INF 3PL after ka_priest=3MSG
....after lighting a torch in the temple, and their going out after his ka-priest....
Siut I, 278 (Zonhoven 1997:31)
Early 12th dynasty

(467) *iw* *ȝw(w)=Ø* *n* *nb=i* *ʿ.w.s.* [....]
AUX present.PST.PASS DAT lord=1SG l.p.h.
ḫr *bȝk* *[i]m* *m* *nhw*
under servant there as loss
ḥnʿ *wnn* *in* *nb=i* *ʿ.w.s.* *ḥr* *rdit*
AUX.CONJ be.INF by lord=1SG l.p.h. AUX.PRS cause.INF
ḥȝb.t(w) *šʿwt*
send.FUT.PASS documents
(It) was presented[214] to my lord l.p.h.....under the servant there as a loss, and my lord l.p.h. was causing that the documents be sent....
P. Berlin 10025, 2-3 (Johnson 1976:296)
12th dynasty, Amenemhat III, last decade of reign

The use of the independent pronoun and *in* + noun to express the actor in *ḥnʿ sḏm ntf* shows that the actor was not grammatically understood as a direct subject in this construction. However, this construction shows a greater grammatical closeness between the actor and the remainder of the construction than other similar constructions. For example, in the similarly structured *m sḏm in* N, in which the verb appears in the infinitive, the actor expression *in* + noun could be separated from *m sḏm* by elements such as the direct object and indirect object (Ex.468), whilst there is no evidence of this in *ḥnʿ sḏm ntf*.

(468) *m* *rdit* *n=f* *t* *ḥḏ* *in* *wʿ* *im* *nb*
for give.INF DAT=3MSG loaf white by one there every
....for the giving of a white loaf to him by everyone there....
Siut I, 277
Early 12th dynasty

Gardiner has noted that, within the late 18th and early 19th dynasty, the linguistic form *ḥnʿ ntf sḏm*, the successor of *ḥnʿ sḏm ntf*, was 'used as a conjunctive tense with future meaning after imperatives, injunctions, and relative clauses referring to future time' (Gardiner 1928:90). However, the 12th dynasty examples of *ḥnʿ sḏm ntf* show alternative syntactic environments and do not appear to have been restricted to having future meaning, as is exemplified by the past tense continued by the conjunctive in Ex.467. It is possible that semantic and syntactic restrictions may have changed as use of the conjunctive became more widespread, and as it became more grammaticalised.

[214] Silverman has stated that *ḥnʿ wnn in nb=i* in Ex.467 'continues what appears to be *jw sḏm.n=f*' (Silverman 1980:46 n.260), interpreting the beginning of this example as *iw ȝw.n nb=i*, 'my lord presented (it....'. Various other translations of this text have also translated *ȝw* as active, with *n* as a verb ending (Such as Luft (1983:130 & 178), Parkinson (1991:92) and Thesaurus Linguae Aegyptiae (aaew.bbaw.de/tla/servlet/GetCtxt?u=guest&f=Ø&l=Ø&db=Ø&tc=18491&ws=40&mv=3)), whilst others have translated *ȝw* as passive, with *n* as the dative (Such as Wente (1990:77) and Scharff (1924:30)). Here this clause is taken to be passive, due to the meaning of *ȝw* as 'to deliver a document to an authority'. However, whether *ȝw* is taken to be in the active *iw sḏm.n=f* or the passive *iw sḏmw=f* is unimportant, as each of these expresses the same past tense, which is subsequently adopted by the following conjunctive construction.

Furthermore, the observation that throughout Late Egyptian the conjunctive was used to express future events, which often had optative nuance (Loprieno 1980:5) is likely due to the fact that in late Middle Egyptian and Late Egyptian it is principally attested as being used to continue clauses with inherently future meanings (Gardiner 1928:90), since the conjunctive served as a continuation of the previous clause, from which it was able to adopt the tense, aspect and mood.

The infinitive form of the content verb in the conjunctive *ḥnʿ sḏm ntf* contained very limited grammatical information, similar to content verbs in other constructions after auxiliarification had occurred. The conjunctive meaning of this linguistic form was provided by *ḥnʿ*, with its original lexical meaning of 'and' allowing it to provide the meaning of continuation from the previous clause. Since *ḥnʿ* within *ḥnʿ sḏm ntf* was the element which provided the link between the conjunctive and the clause it followed, it was *ḥnʿ* which allowed the conjunctive to take on the tense, aspect and mood of its superordinate clause. This could not be done by the prepositional lexeme *ḥnʿ*, and thus shows that *ḥnʿ* in *ḥnʿ sḏm ntf* had begun to be grammaticalised into an auxiliary.

As with the auxiliarification of other prepositions, as occurred with *ḥr* in the present and negative present constructions and *r* in the future and negative future constructions, the auxiliarification of *ḥnʿ* must be considered in the context of the adposition-to-TAM chain[215] rather than the verb-to-TAM chain.

The prepositional lexeme *ḥnʿ* (Ex.464) may be classed within stage one of each of the four linguistic shift chains, since it expressed a lexical concept (Heine 1993:54), contained its full set of prepositional properties[216], was an independent word (Heine 1993:55) and appeared in its full phonological form (Heine 1993:56). Consequently, like the lexical sources of all other auxiliaries used in Egyptian verbal constructions, *ḥnʿ* may be categorised in stage A of the overarching chain, the adposition-to-TAM chain.

Similar to its lexical source, the auxiliary *ḥnʿ* in *ḥnʿ sḏm ntf* was an independent word with its full phonological form, and thus remained in stage one of the cliticisation and erosion chains respectively (Heine 1993:55-56). However, *ḥnʿ* does show some progression along the desemanticisation and decategorialisation chains.

[215] For the adaption of the verb-to-TAM chain to the adposition-to-TAM chain see pg.87.
[216] See pg.87 for a list of properties of Egyptian prepositions.

The ability of *ḥnꜥ* to take an infinitive as its complement in *ḥnꜥ sḏm ntf*, shows that *ḥnꜥ* had progressed to stage two of the desemanticisation chain at this stage, since it had a complement which expressed a dynamic situation (Heine 1993:54), as opposed to a concrete object or location. However, since there is no evidence of *ḥnꜥ sḏm ntf* with a non-wilful actor, it may not yet be categorised in stage three of the desemanticisation chain (Heine 1993:54).

ḥnꜥ within *ḥnꜥ sḏm ntf* can also be seen to have lost a number of its prepositional properties. The complement of this form of *ḥnꜥ* was restricted to the infinitive, and it could no longer take a noun phrase as a complement. Furthermore, this form of *ḥnꜥ* was unable to form compound prepositions or to be used in prepositional verbs. This loss of prepositional properties shows significant advancement of *ḥnꜥ* along the decategorialisation chain (Heine 1993:55).

These developments of *ḥnꜥ* along the desemanticisation and decategorialisation chains allow it to be categorised in stage B of the overarching adposition-to-TAM chain. *ḥnꜥ* also shows characteristics of stage C, however the lack of attestations of *ḥnꜥ sḏm ntf* with non-willful/human referents ensures that it cannot be fully categorised in that stage.

	De-semanticisation	De-categorialisation	Cliticisation	Erosion	Adposition-to-TAM
ḥnꜥ – prepositional lexeme	1	1	1	1	A
ḥnꜥ – conjunctive auxiliary	2	3	1	1	B/C

Table 56 – Stages reached by each form of ḥnꜥ in each of the four linguistic shift chains and overarching adposition-to-TAM chain.

The process of auxiliarification within the development of the conjunctive construction is broadly similar to auxiliarification in the developments of other Egyptian verbal constructions, initially showing the occurrence of desemanticisation and decategorialisation, but no cliticisation or erosion. However, in every other construction a change of word order from VS to SV occurred concurrently with auxiliarification[217], being caused by the word order in the source construction for the auxiliarified linguistic form, but in the conjunctive construction no such change occurred at the time of auxiliarification. This

[217] See 3.a.iv.1. In constructions which show two cases of auxiliarification during their developments this change of word order was only concurrent with one.

was due to the source construction for the auxiliarified form of the conjunctive using an infinitive to express the content verb, since when an infinitive expressed an actor this always followed the verb (Gardiner 1957:225), ensuring that *ḥnᶜ ntf sḏm* had VS word order.

(469) *sȝw* *ỉmyt* *tȝ* *mw* *ḫfȝww* *ḥnᶜ* *grt* *ỉr-sšw* *ntk*
watch.IMP who_is_in land water snakes AUX.CONJ PART make_writings.INF 2MSG
r *ỉȝt* *nbt* *n* *ḫfȝwt=k* *ntt* *ỉm*
to region every DAT snakes=2MSG REL there
Watch those who are in the earth and the water, the snakes, and you must make writings to every region, for your snakes who are there....
Heavenly Cow[T], 6-7, (Gardiner 1928:95)
18th dynasty, Tutankhamun

The conjunctive *ḥnᶜ sḏm ntf* shows an increase in analyticity from its source construction *ḥnᶜ sḏm*, due to *ḥnᶜ sḏm ntf* consistently expressing an actor, while *ḥnᶜ sḏm* contained no actor expression. This addition of an actor allowed *ḥnᶜ sḏm ntf* to express a full clause, rather than the reduced clause which *ḥnᶜ sḏm* provided.

The successive linguistic form of the conjunctive construction to *ḥnᶜ sḏm ntf* was *ḥnᶜ ntf sḏm*[218], attested from the 18th dynasty within this corpus. *ḥnᶜ ntf sḏm* exhibits the result of a change in word order from VS to SV. Thus, although in the conjunctive this change in word order did not happen concurrently to the auxiliarification of the construction as in all other Egyptian verbal constructions, this did not preclude it from happening at all.

(470) *ỉn* *st....*
bring.IMP 3PL
ḥnᶜ *ntk* *ḥn* *n* *nȝ* *n* *mnỉwy*
AUX.CONJ 2MSG command.INF DAT the GEN herdsmen
Bring them....and command the herdsmen....
P. Berlin 10463, 7 – verso, 1
Mid 18th dynasty

(471) *ỉm* *ḫpr=sn* *mḥ* *6* *m* *ḳȝ=sn*
cause.IMP become.FUT=3PL cubit 6 as height=3PL
ḥnᶜ *ntk* *ḏd* *n* *ḳd* *ỉmn-ms*
AUX.CONJ 2MSG say.INF DAT builder Amenmose
ỉry=f *st* *m-mỉtt*
do.FUT=3MSG 3SG likewise
Let them become 6 cubits as their height, and you shall tell the builder Amenmose that he will do it likewise....
P. BM EA 10102, 13-15 (Gardiner 1928:86)
18th dynasty, Hatshepsut

[218] The writing of nominal actors in *ḥnᶜ ntf sḏm* has not been well investigated, but no example of the form *ḥnᶜ ỉn* N *sḏm* is attested in this corpus, as may be expected from the writing *ḥnᶜ sḏm ỉn* N in Ex.467 (pg.231). However, Gardiner (1928:90) noted several examples of *ḥnᶜ nty* N *sḏm*, likely indicating a transition to *mtw* N *sḏm*, as is found in Late Egyptian.

Gardiner has suggested that the change in word order from VS to SV in the conjunctive may have been influenced by constructions such as *mi ntf* + predicate and *ḏr ntt=k* + predicate (Gardiner 1928:94). However, more recently Winand has indicated that this suggestion is not particularly convincing (Winand 1992:465). Instead, Winand advocates that this change in word order may have resulted from the general tendency of Late Egyptian to have SV word order, rather than the VS word order of Middle Egyptian (Winand 1992:465). However, of the 17 verbal constructions considered in this thesis, only 9 show evidence of a change in word order by Late Egyptian[219], although these do include several of the constructions which were most common and had the most basic meanings. Within the developments of these 9 constructions, although the forms with SV word orders are attested from various stages between Old Egyptian and Late Egyptian, these typically remain secondary forms of each construction until Late Egyptian. Only the conjunctive shows evidence of a form with SV word order being the most common form of the construction before Late Egyptian, suggesting that this change in word order may have occurred earlier in the conjunctive, in which case this change would not have resulted from the 'general tendency' referred to by Winand. However, it is possible that changes occurred at different times and in a different order in the spoken language than indicated by the written language.

It is perhaps more likely that the conjunctive was influenced by other constructions which similarly used the independent pronoun to express pronominal actors, such as cleft sentences or the identification pattern, which each exhibit a subject first word order.

Since the change in word order was the only change evident in the development between *ḥnꜥ sḏm ntf* and *ḥnꜥ ntf sḏm*, this development had no effect on the analyticity of the construction. However, *ḥnꜥ ntf sḏm* is attested more frequently than *ḥnꜥ sḏm ntf*, preceding a further increase in usage of the conjunctive construction in Late Egyptian.

2.q.ii. Syntheticisation (*ḥnꜥ ntf sḏm* > *mtw=f sḏm* > ⲛⲉⲥⲥⲱⲧⲙ)

The most common linguistic form of the conjunctive construction in Late Egyptian, *mtw=f sḏm*, likely developed through the loss of *ḥnꜥ* and the reanalysis of the independent pronoun (Neveu 2015:110) from *ḥnꜥ ntf sḏm*[220]. *mtw=f sḏm* is far more commonly attested

[219] See pg.275.

[220] Gardiner noted an example of the form *ntf sḏm* (KRI V 344.5-6) which he stated provides the missing link between *ḥnꜥ ntf sḏm* and *mtw=f sḏm* (Gardiner 1928:95). However, Winand has stated that 'vu la date du texte, je pense qu'il s'agit plutôt d'une graphie fautive explicable par des raisons phonétiques' (Winand 1992:465).

than either *ḥnᶜ sḏm ntf* or *ḥnᶜ ntf sḏm*, and may be found in the same text as *ḥnᶜ ntf sḏm* (Ex.473-474), showing the layering of these two linguistic forms of the conjunctive construction.

(472) *m-mitt* *mtw=k* *ii[t]* *r* *sḫt* *ḫr* *prt*
likewise AUX.CONJ=2MSG come.INF to field under seed
pɜ-wn *iw=n* *r* *mḥ* *<r>* *skɜ* [*m*] *dwɜ*
because AUX.FUT=1PL AUX.FUT begin.INF PURP plough.INF at dawn
Likewise you are to come to the field with seed, because we shall start to plough at dawn.
LES, 11.3-5
19th dynasty

(473) *iḫ* *di=k* *ḥr=k* *n* *mry-ms*
PART give.FUT=2MSG face=2MSG DAT Merymes
mtw=k *sḏm* *tɜ* *wpt*
AUX.CONJ=2MSG hear.INF the litigation
hɜb *n=k* *pɜ* *mr-mšᶜ* *ḥr=s*
send.PST.REL DAT=2MSG the general about=3FSG
Will you apply yourself to Merymes, and hear the litigation which the general sent to you about....?
K*RI* I, 240.1-2 (Neveu 2015:110)
19th dynasty, Seti I

(474) *iḫ* *di=k* *int* *n=i* *mry-ms*
PART cause.FUT=2MSG bring.FUT DAT=1SG Merymose
wᶜ *n* *ᶜw* *ḏmᶜ....*
one GEN papyrus_rolls papyrus_rolls
ḥnᶜ *ntk* *hɜb* *n=i* *ḥr* *snb=k* *nb* *sp-sn*
AUX.CONJ 2MSG send.INF DAT=1SG about health=2MSG every PART
Will you cause that Merymose bring a papyrus roll to me....and send to me absolutely everything about your health....
K*RI* I, 240.4-6 (Neveu 2015:110)
19th dynasty, Seti I

The loss of *ḥnᶜ* from the conjunctive construction ensured that it made no further progression along any of the linguistic shift chains, or the adposition-to-TAM chain, than the stages it had reached in *ḥnᶜ sḏm ntf*. Furthermore, the loss of *ḥnᶜ* involved the loss of the only fixed and non-lexical element (Borghouts 1979:15 n.9), leaving no element which expressed the grammatical information of the conjunctive construction. Within *mtw=f sḏm*, `this grammatical information was subsequently taken on by *mtw*. It has been suggested that *mtw* is likely an unstressed descendant of the earlier independent pronoun (Allen 2013:180). The link between the independent pronoun and *mtw* is further supported by the existence of several late writings of the independent pronoun which resemble the writing of *mtw* (Borghouts 1979:15). *mtw* must have undergone reanalysis, as may be seen from its use with the 1st person singular as *mtw=i sḏm* (Ex.475), since this cannot have developed

from the 1st person singular independent pronoun *ink*. This shows that the 2nd and 3rd person independent pronouns, which began *nt-*, must have been reanalysed as the conjunctive marker *mtw* and a suffix pronoun, with this then spreading to 1st person and nominal subjects. This also ensured that the conjunctive construction was more commensurate with the contemporary forms of other Egyptian verbal constructions, which in Late Egyptian all utilised suffix pronouns to express a pronominal subject[221]. The use of suffix pronouns also shows a reanalysis of the actor, previously expressed by independent pronouns and *in* + noun, as a direct subject, showing an increase in the grammatical closeness of the subject to other parts of the construction, particularly *mtw*, to which it was suffixed when pronominal. This is also shown by the lack of use of *in* before nominal subjects (Ex.476).

(475)

mtw=i	*mḥ*	*ḳn=i*	*im=k*
AUX.CONJ=1SG	fill.INF	embrace=1SG	with=2MSG

....and I will fill my embrace with you.
LRL, 28.2
20th dynasty, Ramesses XI, after year 25

This reanalysis shows the splitting of one element into two, to express the grammatical information of the construction and the subject in two separate elements. This means of increasing analyticity is not seen in any other Egyptian verbal construction, and shows a direct contrast with coalescence, found in the syntheticisation of all Egyptian verbal constructions, which shows the process of two elements becoming one.

mtw=f sḏm could be used in a wider range of syntactic environments than *ḥnꜥ sḏm ntf* and *ḥnꜥ ntf sḏm*, being used after imperatives, causative imperatives, the future forms *sḏm=f* and *iw=f r sḏm*, the negative habitual, and the not yet construction (Junge 2001:233), as well as after an adverb as in Ex.472. This shows some expansion on the contexts in which the linguistic form *ḥnꜥ ntf sḏm* could appear, with these predominantly being attested after imperatives, injunctions and relative futures (Gardiner 1928:90). Within Demotic the conjunctive could be found in a still wider range of contexts, including following the habitual, second tense with future meaning, terminative, irrealis, *r* + infinitive purpose clause, and conditional, in addition to the syntactic environments in which it could appear in Late Egyptian (Johnson 1976:284-291). The conjunctive in Demotic could also be found in some cases following a particle (Ex.476), as was common in Coptic (Johnson 1976:287).

[221] See 3.a.iii.3. With the exceptions of 3rd personal pronominal subjects in the present and negative present.

(476) ꜥ*rw* *mtw* *p3* *ntr* *di* *st* [*n* *ḥ3t=f*
PART AUX.CONJ the God put.INF 3SG in heart=3MSG
r] *ir* *n=y* *p3* *nty* *mtr.w*
PURP do.INF DAT=1SG the REL to_be_right.STV
Perhaps God will put it [in his heart] to do for me what is right....
Onchsheshonqy, 1.19 (Johnson 1976:287)
Late Ptolemaic

The development of the most common linguistic form of the conjunctive construction from *ḥnꜥ ntf sḏm* to *mtw=f sḏm* caused an increase in syntheticity. The loss of *ḥnꜥ* decreased the quantity of elements within the construction, however, since the conversion of the independent pronoun from *ntf* into *mtw=f* involved the reanalysis of this single element as two distinct elements, this consequently cancelled out the drop in the quantity of elements caused by the loss of *ḥnꜥ*. Despite this, the change in the type of pronominal subject used in the development from *ntf* to *mtw=f* caused a further increase in the syntheticity of the construction, since the understanding of the pronominal subject as a suffix pronoun in *mtw=f sḏm* identified the subject as being far more dependent on its preceding element than the earlier independent pronoun (Ex.469). Consequently, with the changes in the quantity of elements within the construction caused by the loss of *ḥnꜥ* and split of *ntf* into two elements essentially cancelling the other out, it was the increase in the interdependency of pronominal subjects which caused an increase in the syntheticity of the conjunctive construction at this stage.

Further increases in the syntheticity of the conjunctive construction are evident from the successor of *mtw=f sḏm*, ⲛⲉⲥⲱⲧⲙ, which provided the linguistic form of the conjunctive construction used in Coptic. Early usage of *n* in place of *mtw* can be seen in Demotic in examples from the 3rd century CE (Johnson 1976:282).

(477) *iir=k* *r* *di* *ir=w* *ir*
AUX.FUT=2MSG AUX.FUT CAUS_INF AUX.CAUS_INF=3PL do.INF
n *p3y=y* *ḥb* *n=st* *di* *mšꜥ* *t3y=y* *wpt*
OBJ POSS=1SG work AUX.CONJ=3PL cause.INF proceed.FUT POSS=1SG job
You should cause that they do my work and they should cause that my job proceed.
Magical, 2.9 (Johnson 1976:282)
c.200-299CE

ⲛⲉⲥⲱⲧⲙ could be used in a wider range of syntactic environments than previous linguistic forms of the conjunctive construction, following the ongoing widening of the contexts in which the construction could be used in earlier language stages. The syntactic environments in which ⲛⲉⲥⲱⲧⲙ could be used included 'extending a non-narrative verb;

extension within a subordinate clause extending or completing other elements; following ⲭⲉⲕⲁⲥ; as a main clause in sequel to an adverbial clause' (Layton 2000:277).

(478) ⲧⲱⲟⲩⲛ-ⲣ ⲛ-ⲣ-ⲡⲱⲧ ⲛ-ⲣ-ⲧⲁϫⲟ-ⲩ
rise_up.IMP-2MSG AUX.CONJ-2MSG-run.INF AUX.CONJ-2MSG-catch_up_to.INF-3MSG
Raise yourself up and run and you will catch up to him.
AP224
c.300-499CE

(479) ⲙⲛⲛⲥⲱ-ⲥ ⲇⲉ ⲟⲛ ϯ-ⲛⲁ-ⲛⲁⲩ ⲉⲣⲱ-ⲧⲛ
after-3FSG PART again 1SG-AUX.FUT-see.INF OBJ-2PL
ⲛⲧⲉ-ⲡⲉ-ⲧⲛ-ϩⲏⲧ ⲣⲁⲯⲉ
AUX.CONJ-POSS-2PL-heart rejoice.INF
After it I will see you again and your hearts will rejoice.
John, 16.22 (Layton 2000:279)
c.400-499CE

(480) ϯ-ⲛⲁ-ⲯⲟⲣⲯⲣ-ⲛ-ⲁ-ⲁⲡⲟⲑⲏⲕⲏ ⲛⲧ-ⲁ-ⲕⲟⲧ-ⲟⲩ ⲛ-ϩⲉⲛ-ⲛⲟⲩ
1SG-AUX.FUT-destroy.INF-POSS-1SG-storehouse AUX.CONJ-1SG-build.INF-3PL into-some-big
ⲧ-ⲁ-ⲥⲱⲟⲩϩ ⲉⲣⲟ-ⲟⲩ ⲙ-ⲡ-ⲥⲟⲩⲟ ⲧⲏⲣ-ⲩ ⲛⲙ-ⲛ-ⲁ-ⲁⲅⲁⲑⲟⲛ
AUX.CONJ-1SG-gather.INF in-3PL OBJ-the-grain all=3MSG and-POSS-1SG-good
I will destroy my storehouses and I will build them into bigger ones, and I will gather in them all the grain and my goods.
Luke, 12.18 (Layton 2000:278)
c.450-499CE

(481) ⲉ-ⲯⲱⲡⲉ ⲇⲉ ⲉ-ⲩ-ϩⲛ-ⲧ-ⲙⲏⲧⲉ ⲛⲛ-ⲟⲩ-ⲙⲏⲏⲯⲉ ⲙ-ⲙⲟⲛⲁⲭⲟⲥ
CIRC-happen.INF PART CIRC-3MSG-in-the-middle GEN-a-crowd GEN-monks
ⲛ̄ⲧⲉ-ⲟⲩⲁ ⲟⲩⲱⲯ ⲉ-ⲛⲁⲩ ⲉⲣⲟ-ⲩ
AUX.CONJ-someone wish.INF PURP-see.INF OBJ-3MSG
If it happened that he was in the middle of a crowd of monks, and someone wished to see him....
Antony, 67
822-823CE

ⲛⲩⲥⲱⲧⲙ shows the erosion of the conjunctive marker from *mtw* to ⲛ. However, this likely occurred through an intermediate stage, in which *mtw* was written ⲛⲧⲉ, with the full linguistic form being ⲛⲧⲉⲩⲥⲱⲧⲙ. This form is preserved in Boharic, in which the conjunctive is formed with ⲛⲧⲉ, followed by the subject and content verb (Allen 2021:63). The writing ⲛⲧⲉ is also preserved in the form of the conjunctive used with nominal subjects in Sahidic, Oxyrhynchitic, Fayumic and Lycopolitan (Allen 2021:63). However, in the forms used with pronominal subjects in these four dialects, it was typically ⲛ alone which provided the marker of the conjunctive construction[222], save for in the 1st person singular, in which either ⲛⲧ or ⲧ appeared before the pronoun. In Akhmimic, however, the

[222] For the 2nd person plural, Fayumic used ⲛⲧⲉⲧⲉⲛ, like Boharic, rather than ⲛⲧⲉⲧⲛ, which appeared in Sahidic, Oxyrhynchitic and Lycopolitan (Allen 2021:63).

conjunctive was reduced to resemble the present ϥⲥⲱⲧⲙ (Till 1928:157), appearing with no marker at all, save for with nominal subjects, when ⲛⲧⲉ was used (Allen 2021:63).

The direction of linguistic change is more likely to have occurred through the change of *mtw* to ⲛⲧⲉ first, involving the orthographic change of *m* to ⲛ and slight erosion of *w* to ⲉ[223], followed by the erosion, or loss in most Akhmimic forms, of ⲛⲧⲉ. Thus it may be assumed that ⲛⲧⲉϥⲥⲱⲧⲙ provided a bridge between *mtw=f sḏm* and ⲛϥⲥⲱⲧⲙ, with ⲛⲧⲉϥⲥⲱⲧⲙ being maintained in Boharic, as well as in forms with nominal subjects in other dialects. The erosion of ⲛⲧⲉ to ⲛ in forms with pronominal subjects, alongside the retention of ⲛⲧⲉ in forms with nominal subjects, resulted in a similar paradigm to those of the habitual and negative habitual constructions, in which forms with pronominal subjects used the respective markers ⲣⲁ and ⲙⲉ, with the auxiliary ⲣⲉ having been lost from an earlier linguistic form, but forms with a nominal subject maintained the fuller markers ⲣⲁⲣⲉ and ⲙⲉⲣⲉ respectively[224].

As well as orthographic change and erosion (or loss), ⲛϥⲥⲱⲧⲙ also shows the results of coalescence. However, this was not fully completed, since within the negation of the conjunctive construction, the negative marker ⲧⲙ could be placed between two elements of the construction. In examples from Demotic and Coptic the negative marker *tm*/ⲧⲙ was placed between the subject and content verb in a form with a pronominal subject (Ex.482 and Ex.484), and between the marker *mtw* and the subject in a form with a nominal subject (Ex.483 and Ex.485).

(482)

pꜣ	*nty*	*ʿn-smy*	*nkt*	*m-bꜣḥ*	*pꜣ*	*ntr*
the	REL	report.INF	thing	before	the	god

mtw=f	*tm*	*dỉ=s*
AUX.CONJ=3MSG	NEG	give.INF=3FSG

The one who reports a thing before the god and does not give it.
P. Louvre 2414, 1.2 (Johnson 1976:291-2)
163 BCE

(483)

nꜣ-ʿn	*ḥḳꜣ*	*n*	*pꜣ*	*nty*	*ỉw*	*ỉw=f*	*rḏ*
be_pleasing.PRS	hunger	DAT	the	REL	CIRC	AUX.FUT=3MSG	be_able.INF

sỉy	*mtw*	*tm*	*btw*	*pḥ=f*
satisfy.INF	AUX.CONJ	NEG	abomination	reach.INF=3MSG

Hunger is pleasing for the one shall will be able to satisfy (it), and abomination shall not reach him.
P. Insinger, 7.8 (Johnson 1976:296)
c.0-99CE

[223] These are each also attested elsewhere in Egyptian. For *m* > *n*/ⲛ see pg.219 & 235, for *w* > ⲉ see pg.79.
[224] See 5.b for further detail on this paradigmatic variation.

(484) ⲱⲁⲣⲉ-ⲡ-ⲣⲉⲕⲣⲛⲟⲃⲉ ⲭⲓ ⲉⲭⲱ-ⲕ ⲛ-ⲕ-ⲧⲙ-ⲧⲁⲁ-ⲩ
AUX.HBT-the-sinner take.INF for-3MSG AUX.CONJ-3MSG-NEG-give.INF-3PL
ⲱⲁⲣⲉ-ⲡ-ⲇⲓⲕⲁⲓⲟⲥ ⲇⲉ ⲱⲛϩⲧⲏ-ⲕ ⲁⲩⲱ ⲛ-ⲕ-ⲧ
AUX.HBT-the-righteous PART have_pity.INF-3MSG and AUX.CONJ-3MSG-give.INF
The sinner takes for himself and does not give, but the righteous has pity and gives.
Ps., 36.21 (Layton 2000:277)
575-625CE

(485) ϩⲱⲥⲧⲉ ⲉ-ⲛⲉⲭ-ⲧⲉ-ⲕ-ⲱⲧⲏⲛ ⲙⲡⲃⲟⲗ ⲛⲧⲉ-ⲕ-ⲣⲓ
so_that PURP-throw.INF-POSS-3MSG-tunic outside GEN-3MSG-cell
ⲛ-ⲱⲟⲙⲛⲧ ⲛ-ϩⲟⲟⲩ ⲛⲧⲉ-ⲧⲙ-ⲁⲁⲩ ⲧⲁⲓⲟ-ⲥ
for-three GEN-day AUX.CONJ-NEG-anyone pick_up.INF-3FSG
....so that he throws his tunic outside of his cell and no one picks it up....
AP25
c.300-499CE

This shows that the inseparability of the entire construction in forms with pronominal subjects, and of all but the content verb in forms with nominal subjects, which is seen in the Coptic in the majority of Egyptian verbal constructions, was not fully achieved in this case. Furthermore, the insertion of ⲧⲙ between two elements of the affirmative construction shows a contrast with other negative verbal constructions which utilised morphological negations, or used the negation ⲛ···· ⲁⲛ, in which the negation did not separate the elements of the affirmative form, but either replaced the fixed elements, or appeared either side of the full affirmative linguistic form.

However, within the conjunctive construction, the negation ⲧⲙ and the verbal prefix ⲱ-[225] were the only elements which able to separate the content verb and subject in a form with a pronominal subject, and the marker and subject in a form with a nominal subject. External elements appeared outside of the construction when the subject was pronominal (Ex.486), showing that in the majority of cases in forms with pronominal subjects the elements of the conjunctive construction were inseparable. Within forms with nominal subjects, the subject and content verb could be separated by external elements, as in Ex.487, but the marker and subject were inseparable.

(486) ⲉⲩⲱⲁⲛ-ⲧⲙ-ⲣ-ⲁⲛⲁⲱ ⲙ-ⲡ-ⲣⲁⲛ ⲙ-ⲡ-ⲛⲟⲩⲧⲉ
COND.3PL-NEG-make.INF-oath in-the-name GEN-the-god
ⲛ-ⲥⲉ-ⲉⲓⲣⲉ ⲇⲉ ⲛ-ⲕⲉ-ⲁⲛⲁⲱ
AUX.CONJ-3PL-make.INF PART OBJ-other-oath
If they do not make an oath in the name of god, but make another oath....
Sh.III, 19:4-6 (Layton 2000:280)
c.800-899CE

[225] Within the corpus used for this thesis, ⲱ- is only attested in the conjunctive in forms with pronominal subjects, where it appears between the subject and content verb. In all but one example (Mark 4.32), such examples also contain the negation ⲧⲙ.

(487) ⲯⲁ-ϥ-ⲯⲁⲁⲣ ⲛⲧⲉ-ⲧⲉ-ϥ-ⲟⲓⲝ ⲟⲛ ⲧⲁⲗⲟ
AUX.HBT-3MSG-smite.INF AUX.CONJ-POSS-3MSG-hand also heal.INF
....he smites, and his hand also heals.
Job, 5.18
c.900-999CE

This coalescence shows an increase in the interdependency of the elements in the conjunctive construction, which consequently caused an increase in the syntheticity of the construction. The syntheticity of this construction was also increased by the erosion of the marker to ⲛ in forms of the construction with pronominal subjects in most dialects.

2.q.iii. Conclusions

As with the present, negative present, future and negative future constructions, the conjunctive shows the addition of a prepositional lexeme as an auxiliary and, also similarly to the auxiliaries in the present and future constructions[226], this auxiliary was lost within the development of the construction, being absent in the writing of later linguistic forms. The loss of *ḥnꜥ* was completed during the Late Egyptian language stage, slightly earlier than the loss of *ḥr* and *r* from the present and future constructions respectively.

The conjunctive construction also shows a similarity to the habitual and negative habitual constructions with the linguistic forms attested in Coptic, in which the form used with a pronominal subject was an eroded form of that used with nominal subjects[227].

However, the conjunctive construction was unique in that it was the only Egyptian verbal construction which did not experience a change in word order from VS to SV concurrently with auxiliarification. Instead, in this construction, this change in word order occurred in the successive linguistic form to that in which the auxiliary was first used. This was due to the form of the content verb of the initial linguistic form of the conjunctive construction being taken from that of the source construction *ḥnꜥ sḏm*, in which the content verb appeared in an infinitive form, thus ensuring that any subject appeared after the verb, as was the general position of the subject of an infinitive (Gardiner 1957:225). That the word order of the earliest auxiliarified form was determined by its source construction was also the case in all other Egyptian verbal constructions, however in all other constructions the word order of the source construction led to the word order of the verbal construction with an auxiliary being SV[228]. The subsequent word order change in the conjunctive construction to

[226] With the exception of the survival of *r* as ϵ in the form of the affirmative future construction with pronominal subjects, ϵϥϵⲥⲱⲧⲙ.
[227] For each of these variation is seen across different dialects. See pg.122, 132 & 250-251.
[228] See 3.a.iii.1. and 3.a.iv1.

SV in *ḥnꜥ ntf sḏm* can likely be viewed as an effect of the general tendency of several Late Egyptian constructions to contain SV word order (Winand 1992:465), since even though many constructions did not develop forms with SV word order until Demotic, the majority of the most basic and commonly used constructions, such as the negative past, present, negative present, future, and negative future, had already developed linguistic forms with SV word order, which were in use as the most common form of expressing each construction by this time.

3. Analyticisation

The present chapter will comparatively examine the analyticisation stages of all verbal constructions discussed in chapter 2, exploring in detail the process of auxiliarification, the most common process involved in analyticisation, as well as examining other means of increasing analyticity.

3.a. Auxiliarification of the Content Verb

The predominant cause of analyticisation across Egyptian verbal constructions was the process of auxiliarification, in which a periphrastic form containing an auxiliary emerged and replaced the existing most common linguistic form in each construction. In each case, auxiliarification shows the initial stages of grammaticalisation of either a verbal or prepositional lexeme as an auxiliary.

As illustrated in table 57, auxiliarification occurred either through direct development, in which the auxiliary was added to the existing most common form of the construction, or replacement, in which the auxiliary was auxiliarified in an alternative construction, with this auxiliarified form then replacing the existing most common form of the construction.

In each case, auxiliarification increased the analyticity of the construction it affected by increasing its quantity of elements, caused by the additional presence of an auxiliary which had not been used in the pre-auxiliarification form. Auxiliarification also increased analyticity by increasing the autonomy of the construction, through an increase in the autonomy of the content verb. In most cases of auxiliarification, the content verb pre-auxiliarification was inflected and was the element which the subject was dependent on. In contrast, post-auxiliarification the content verb was in an uninflected infinitive form, and was no longer the element on which the subject was dependent, thus being more autonomous.

Auxiliarification as a cause of analyticisation is well attested crosslinguistically. For example, it is evident in the Latin/French and Greek future constructions detailed in 1.b.[229]. It is clear that the analyticisation of the Latin/French future construction occurred primarily through auxiliarification, with *habeo* used as an auxiliary in the first case of analyticisation, and *vais*

[229] See pg.13-14 & 16-17.

providing the auxiliary in the second analyticisation. These caused an increase in the analyticity of the construction through an increase in the quantity of elements in the construction, and an increase in the autonomy of the content verb which began to appear in an infinitive form[230], similar to auxiliarification in Egyptian verbal constructions. The first analyticisation of the Greek future construction was similarly caused by auxiliarification[231], which increased the quantity of elements in the construction and caused an increase in the autonomy of the elements, with the auxiliary and subject ending being separable from the verb and its infinitive by any number of external elements. Similar to the majority of cases in Egyptian verbal constructions, auxiliarification in the Greek future construction also occurred concurrently with a change in word order from VS to SV[232]. However, contrastingly to both Egyptian verbal constructions[233] and the Greek future construction, in the Latin/French future construction the first auxiliarification did not involve any change in word order, while the second auxiliarification involved a change in word order from SVS to SV, following a change in word order from VS to SVS caused by the addition and obligatorification of a subject expression before the content verb[234]. Furthermore, the second stage of analyticisation within the Greek future construction did not involve auxiliarification at all, but was caused by the addition of the particle νά, showing that although auxiliarification is a regular cause of analyticisation in Egyptian verbal constructions and crosslinguistically, it is not required for analyticisation to occur. This may also be seen in Egyptian verbal constructions, with the processes discussed in 3.b.

[230] See pg.13-14.
[231] See pg.16.
[232] See pg.275.
[233] See 3.a.iii.1 and 3.a.iv.
[234] See pg.14 & pg.275-276.

Construction	Immediate pre-auxiliarification form	Immediate post-auxiliarification form	Auxiliary	Form of content verb post-auxiliarification
Auxiliarification through direct development				
Past	*sḏm=f*	*ỉr=f sḏm*	*ỉr*	Infinitive
Perfect (1st auxiliarification)	Past *sḏm=f* (source construction)	*wꜣḥ=f sḏm*	*wꜣḥ*	Infinitive
Perfect (2nd auxiliarification)	ⲉⲁⲫⲥⲱⲧⲙ	(ⲉ)ⲁⲫⲟⲩⲱ ⲉⲫⲥⲱⲧⲙ	ⲟⲩⲱ	Infinitive
Negative past	*n sḏm=f*	*n pꜣ=f sḏm*	*pꜣ*	Infinitive
Habitual	*ḫr sḏm=f*	*ḫr ỉr=f sḏm*	*ỉr*	Infinitive
Negative habitual	*bw sḏm=f*	*bw ỉr=f sḏm*	*ỉr*	Infinitive
Future (2nd auxiliarification)	*sw ḥr sḏm* (source construction)	*tw=ỉ m nꜥy r sḏm*	*nꜥy*	Infinitive
Causative imperative	*my sḏm=f*	*my ỉr=f sḏm*	*ỉr*	Infinitive
Negative causative imperative	*m ỉr dỉ sḏm=f*	*m ỉr dỉ ỉr=f sḏm*	*ỉr*	Infinitive
Causative infinitive	*dỉ sḏm=f*	*dỉ ỉr=f sḏm*	*ỉr*	Infinitive
Finalis	*dỉ=ỉ sḏm=f*	*dỉ=y ỉr=f sḏm*	*ỉr*	Infinitive
Terminative	*r sḏm.t=f*	*ỉ-ỉr.t=f sḏm*	*ỉr*	Infinitive
Not Yet	*bw sḏm.t=f*	*bw ỉr.t=f sḏm*	*ỉr*	Infinitive
Temporal	*n drt sḏm=f*	*n drt ỉr=f sḏm*	*ỉr*	Infinitive
Conjunctive	*ḥnꜥ sḏm* (source construction)	*ḥnꜥ sḏm ntf*	*ḥnꜥ*	Infinitive
Auxiliarification through replacement				
Present	(*ỉw*) (Subject) *sḏm=f*	*ỉw=f ḥr sḏm*	*ḥr*	Infinitive
Negative present	*n sḏm.n=f*	*nn sw ḥr sḏm*	*ḥr*	Infinitive
Future (1st auxiliarification)	*sḏm=f*	*ỉw=f r sḏm*	*r*	Infinitive
Negative future	*nn sḏm=f*	*nn ỉw=f r sḏm*	*r*	Infinitive

Table 57 – Linguistic forms of verbal constructions immediately before and after auxiliarification.

3.a.i. Reanalysis

The mechanism of reanalysis involves changes in the underlying structure of a syntactic pattern, without any immediate or intrinsic modification of its surface manifestation (Harris & Campbell 1995:61; Langacker 1977:58). Reanalysis affects the morphosyntactic and semantic properties of a construction (Hopper & Traugott 2003:39) is linked with metonymic change, in which one meaning is stated in regard to another meaning which is contiguous in the context (Hopper & Traugott 2003:93). Reanalysis may also be linked to grammaticalisation, but while all grammaticalisation involves reanalysis, not all cases of reanalysis result in grammaticalisation (Hopper & Traugott 2003:59).

The process of auxiliarification which provided the most common cause of analyticisation in Egyptian verbal constructions involved the reanalysis of a lexical item as a grammatical auxiliary. In this case the reanalysis from lexeme to auxiliary results in the initial grammaticalisation of the lexeme. Grammaticalisation may be defined as an item becoming more grammatical, advancing from a lexical item to a grammatical item, or from less grammatical to more grammatical (Kuryłowicz 1965:69). With regards to the auxiliaries used in Egyptian verbal constructions, the development from lexical to grammatical item may be seen in the reanalysis involved in auxiliarification. The development from grammatical to more grammatical may be seen in the subsequent developments of each auxiliary, which in the context of the linguistic cycle was a cause of syntheticisation[235].

While the innovations of reanalysis are not made visible in the surface manifestation of the constructions by reanalysis itself, such innovations are made observable by the mechanism of analogy (Hopper & Traugott 2003:68). Analogy is the process of spread across the linguistic system (Hopper & Traugott 2003:69), and is linked with metaphorical change, in which one meaning is stated in regard to another meaning which is not present in the context (Hopper & Traugott 2003:92). Analogy is seen in the auxiliarification of Egyptian verbal constructions in the spread of the auxiliarified linguistic form across the linguistics system, making visible the reanalysis of a lexeme as an auxiliary in each construction. For example, within the present construction the auxiliarified linguistic form *ỉw=f ḥr sḏm* is initially attested in late Old Egyptian only with transitive verbs and expressing progressive meaning. This linguistic form subsequently spread by analogy to express progressive meaning with all verbs in the First Intermediate Period – early 12th dynasty, then to express gnomic meaning with transitive verbs in the late 12th dynasty, and with all verbs in the late 12th dynasty – New Kingdom[236]. This spread made the reanalysis of *ḥr* as an auxiliary visible.

[235] See 4.a-c.
[236] See table 13 (pg.85).

The process of reanalysis may shift an item from one grammatical category to another, or may create an entirely new grammatical category within the language in question (Marchese 1986:272). In the earliest cases of auxiliarification within Egyptian verbal constructions, occurring in Old Egyptian[237], the reanalysis of prepositional and verbal lexemes created the new grammatical category of auxiliary, which until these cases of reanalysis had not been attested in the Egyptian language. However, during later cases of auxiliarification, such as in which auxiliarified forms are first evident in Demotic[238], the grammatical category of auxiliary already existed in the Egyptian language, and thus the reanalysis involved in later cases of auxiliarification involved a shift in category rather than the creation of a new category.

3.a.ii. Sources of Auxiliaries

In the 19 cases of auxiliarification in the 17 verbal constructions[239] analysed in this thesis, seven different lexical elements were auxiliarified. These included the verbal lexemes *iri*, which was auxiliarified from several different forms in multiple different verbal constructions, *wꜣḥ*/**ογω**[240], *pꜣw* and *nᶜy*[241], and the prepositional lexemes *ḥr*, *r* and *ḥnᶜ*. This initially shows that the categories from which words were selected as auxiliaries was restricted to verbs and prepositions. The grammaticalisation path of verbal lexeme > auxiliary is very common crosslinguistically (Anderson 2006:5) while, in contrast, the auxiliarification of prepositional lexemes is crosslinguistically rare (Heine 1993:77).

Of these seven lexical sources of Egyptian auxiliaries, the various forms of *iri* were those most commonly utilised, providing the auxiliary in ten constructions, in 53% of the cases of auxiliarification examined here. *r* and *ḥr* were each added as auxiliaries in two constructions, although these each involved an affirmative form and its corresponding isomorphic negation. *wꜣḥ*/**ογω**, *pꜣ*, *nᶜy* and *ḥnᶜ* were involved in the auxiliarification of one construction each, although for *wꜣḥ*/**ογω** this involved two auxiliarifications of the same construction. This data shows a strong preference for the use of *ir* as an auxiliary, with it being auxiliarified in at least five times as many constructions as any other of these lexemes. As will be shown throughout this chapter, when a

[237] In the negative past, present and future constructions.
[238] In the perfect, habitual, causative imperative, negative causative imperative, causative infinitive, finalis, and temporal constructions.
[239] Including two cases of auxiliarification within the developments of the perfect and future constructions. The auxiliarification of the semantic marker in the negative causative imperative construction (*m dy* > *m ir dit*) will be discussed in 3.b.iii.
[240] Added to the perfect construction along with the circumstantial marker **ϵ** and a second expression of the subject. **ογω** is a later writing of the verbal lexeme *wꜣḥ*, and thus these are considered together.
[241] Added to the future construction as the central element of the preposition-infinitive-preposition group *m nᶜy r*.

verbal lexeme provided the source of an auxiliary, this was typically added into the construction through the direct development of the existing most common linguistic form. In contrast, when it was a prepositional lexeme which provided the source for an auxiliary, this became part of the construction through the replacement of the existing most common linguistic form of the construction by an alternative linguistic form containing the auxiliary[242].

3.a.ii.1. Semantics and Token Frequency

Typological studies have shown that the lexical sources which are grammaticalised to become auxiliaries are typically those which have particularly general meanings. Bybee at el. have noted that

> 'we know that the elements that enter into grammatical periphrases are always among the most frequently used items in the language; that is, they are already highly generalized in semantic content before entering into grammatical constructions' (Bybee et al.1994:130).

The lexemes which underwent auxiliarification in Egyptian verbal constructions predominantly expressed generalised meanings, and often concur with common lexical sources of auxiliaries crosslinguistically. Their token frequencies, the number of times they each appear in texts (Hopper & Traugott 2003:127), are also relatively high, corresponding with the crosslinguistic trend that lexemes with high token frequency are those most likely to be grammaticalised, including the lexical sources of auxiliaries (Bybee & Pagliuca 1985:72). This will be illustrated for each lexeme auxiliarified in Egyptian verbal constructions with reference to the Thesaurus Linguae Aegyptiae (TLA) database[243], which comprises of around 1,400,000 words in texts dating from Old Egyptian to Demotic, separated into (non-Demotic) Egyptian and Demotic lemma lists.

iri

The verbal lexeme *iri* provided the lexical source for the auxiliaries in ten of the constructions[244] examined in this thesis. The lexical meaning of *iri*, 'to do', is highly generalised, and this is reflected in the high frequency of usage. Within the TLA database, *iri* with the meaning 'to do' or 'to make' is attested 11551 times in Egyptian and Demotic (lemma nos 592, 28550 & 851809). The high frequency of verbs meaning 'to do' is attested crosslinguistically. For example, 'do' is recorded as the third most commonly used verb in English in both the Oxford English Corpus[245] and the Corpus of

[242] The only exception to this is the conjunctive, in which the auxiliary was prepositional in origin. The auxiliarified form *ḥnꜥ sḏm ntf* was the first attested form of this construction, and thus it may only show direct development from its source construction and not replacement of an existing form of the conjunctive construction.
[243] http://aaew.bbaw.de/tla/index.html
[244] Past, habitual, negative habitual, causative imperative, negative causative imperative, causative infinitive, finalis, terminative, not yet, temporal.
[245] https://www.sketchengine.eu/oxford-english-corpus/

Contemporary American English[246], and is subsequently used as an auxiliary in several English constructions, including negatives clauses, questions and emphatic statements (Aarts et al. 2014:127-128). The particularly general meaning and high frequency of use of *iri* in Egyptian can be seen as a significant factor behind its widespread use as an auxiliary.

w3ḥ/ⲟⲩⲱ

The verb *w3ḥ* most commonly carried the meaning 'to place' or 'to lay down', attested 616 times in the TLA Egyptian and Demotic databases (lemma nos 1187 & 43010), but in Demotic could mean 'to stop' or 'to finish', although this is only attested 20 times in the TLA Demotic database (lemma no. 1192). This meaning is similar to the crosslinguistic trend that verbs with meanings such as 'finish', 'come from' or 'throw away' grammatical markers of the perfect (Bybee & Dahl 1989:57). In Coptic the descendant of *w3ḥ*, ⲟⲩⲱ, meant 'to cease' or 'to finish', again being similar to crosslinguistic sources of perfect auxiliaries, and allowing it to be used in the auxiliarification of the perfect construction a second time.

p3w

As a verbal lexeme with a nominal complement *p3w* is unattested in Egyptian, and thus its lexical meaning is not overtly clear. However, several comparable translations have been proposed, including 'to do in the past' (Gardiner 1908:77-78, repeated in Gardiner 1957:395 and Loprieno 1995:221), 'faire pour la première fois, commencer à' (Grandet & Mathieu 2003:363), 'to happen' (Allen 2013:128), and 'to come into being for the first time' (Neveu 2015:52). Each of these proposed meanings is relatively generalised, but most contain a limitation such as 'in the past' or 'for the first time'[247]. Consequently, it may be inferred that although its meaning may have been similar to that of *iri*, the meaning of *p3w* was less generalised. This is reflected in the use of *p3w* as an auxiliary significantly less frequently than *iri*.

Furthermore, unlike *iri*, *p3w* was not in use as a lexeme throughout the entire history of the Egyptian language, and was not in use when constructions were auxiliarified in later periods of Egyptian. Thus when an auxiliarified form of the past construction is first attested in Late Egyptian it was not *p3w* which was used as the auxiliary, despite it providing the origin of the auxiliary of the corresponding negative construction, since as a verbal lexeme it was long out of use. Furthermore, the auxiliarified form used in the negative past construction had become *pw*, a form not used outside of the negative past auxiliary *bwpw*, and one disassociated with its origin of *p3w*.

[246] https://www.english-corpora.org/coca/

[247] Allen instead associates the 'consistent past reference' (Allen 2013:162) with the linguistic form *n p3=f sḏm*, rather than the lexical meaning of *p3w* itself.

nʿy

Unlike other sources of auxiliaries used in Egyptian verbal constructions, *nʿy* shows the process of generalisation, rather than having expressed a general meaning from its earliest attestation. In earlier Egyptian, the verbal lexeme *nʿy* gives the meaning of motion over water (Grossman et al. 2014a:93). However, by Late Egyptian *nʿy* could be used with the more general meaning of 'to go' or 'to travel' by any means, with this no longer restricted to travel by boat (Grossman et al. 2014a:93).

(488)

ḫr-ỉr	*sw*	*m*	*nʿy*	*ḫr*	*nȝ*	*šnw*
PART	3FSG	AUX.PRS	go.INF	under	the	trees

Now she was going under the trees.
LES, 44.5-6
20th dynasty, Ramesses V

This generalised meaning allowed *nʿy* to be auxiliarified within the future construction, despite apparently not having a high frequency of usage, with only 81 attestations in the TLA Egyptian database (lemma nos 80410 & 854518). However, *nʿy* was not added to the future construction alone, but as the central element of the preposition-infinitive-preposition group *m nʿy r*. Within this grouping, the preposition *r* helped provide the allative component which must be present in order for future meaning to be derived, as noted by Bybee et al.

> 'Since we find movement verbs as sources for future, pasts, and progressives, we hypothesize that the semantics of movement is not sufficient in itself to give rise to future sense. Rather movement constructions that are sources for future grams actually signal that the subject is in the process of moving towards a goal. That is, along with movement as a component of meaning, the source of such futures includes an imperfective (or progressive) component and an allative component' (Bybee et al. 1991:30).

The addition of a group including *nʿy* as a future auxiliary is commensurate with crosslinguistic studies, which have found that movement verbs are the most frequent sources of future auxiliaries (Bybee et al. 1994:253).

ḥr

While the prepositional lexeme *ḥr* could convey a variety of meanings, the most common of these was 'on' or 'upon', a particularly general prepositional meaning, attested 5272 times in the TLA Egyptian database (lemma no. 400090). This high frequency is also reflected in the use of *ḥr* with a following infinitive, which is attested 5312 times in the TLA Egyptian database (lemma no. 107529).

As well as having a rather general meaning within the prepositional class[248], and a high frequency of usage, *ḥr* also concurs with the findings of typological studies, that constructions formed 'X is at/in/on Y' are regularly reinterpreted as 'X is doing Y' (Heine et al. 1991:36). Furthermore, Bybee et al. noted that the majority of progressive forms within their database derive from sources which involve locative elements (Bybee et al. 1994:129), although this locative meaning may come from either verbs or adpositions. Bybee et al. also describe a progressive construction which shows a similar development to the Egyptian *iw=f ḥr sḏm* form.

> 'The Abkhaz construction uses the postposition in', which derives from the noun 'mouth', as an auxiliary by adding inflections to it and couples it with a nominal form of the main verb... The meaning of the locative construction which gives rise to the progressive is probably 'be in the place of verbing' or 'be at verbing'.' (Bybee et al. 1994:130).

Despite the fact that the auxiliarification of adpositions is not frequently attested crosslinguistically (Heine 1993:77), the Egyptian auxiliary *ḥr* shows remarkable similarities to the Abkhaz construction discussed by Bybee et al., in that its source was a locative adposition which originally derived from a noun for a part of the head (in Egyptian from *ḥr*, 'face'), and the form taken by the content verb was the infinitive, a nominal verb form (Edel 1955/1964:351).

r

Similar to *ḥr*, the prepositional lexeme *r* expressed a quite generalised meaning among prepositions, and was subsequently frequently used, with the most common meaning, 'to' (spatial) attested 6166 times in the TLA Egyptian database (lemma no. 91901), and the related purpose meaning 'in order to' attested 2636 times (lemma no. 91909). Within the spatial semantics of *r*, 'motion is not overtly expressed, but is an inferential meaning' (Grossman & Polis 2014:48), providing an allative meaning. Its spatial and allative meaning ensures *r* resembles crosslinguistic sources of future constructions, in which

> 'the temporal meaning that comes to dominate the semantics of the construction is already present as an inference from the spatial meaning. When one moves along a path toward a goal in space, one also moves in time. The major change that takes place is the loss of spatial meaning' (Bybee et al. 1994:269).

[248] Although the prepositional lexeme *m*, which was utilised as the present auxiliary when the content verb was a verb of motion, had a yet more generalised meaning than *ḥr*.

In the Egyptian affirmative and negative future constructions, this loss of spatial meaning occurred in the desemanticisation of *r*[249].

ḥnꜥ

The prepositional lexeme *ḥnꜥ* meant 'together with', as occurs in 1615 attestations within the TLA Egyptian database (lemma no. 106200), or 'and', as attested 607 times (lemma no. 550300). Each of these meanings made *ḥnꜥ* a particularly appropriate source for the auxiliary of the conjunctive construction in which it was used, since this construction indicated the conjoining of the events of two content verbs.

3.a.ii.2. The Overlap Model

The grammaticalisation of verbal and prepositional lexemes into the auxiliaries used in Egyptian verbal constructions can be seen to fit into the overlap model proposed by Heine (1993:48-53). This model is formed of three stages:

> 'i There is a linguistic expression A that is recruited for grammaticalization.
>
> ii This expression acquires a second use pattern, B, with the effect that there is ambiguity between A and B.
>
> iii Finally, A is lost, that is, there is now only B.' (Heine 2003:579).

This is often referred to as 'a chain-like structure: A > A/B > B' (Breban et al. 2012:10). It has been noted that the overlap model has three main variants (Heine & Narrog 2015a:409), in which either A is lost, A/B is lost, or there is no B. in the developments of Egyptian verbal constructions the variant typically followed is that in which A/B is lost, which results in A and B remaining (Heine & Narrog 2015a:409). The stages of morphosyntactic shift within the overlap model followed in the developments of verbal and prepositional lexemes to auxiliaries in Egyptian verbal constructions is illustrated in table 58.

Stage:	I (A)	II (A/B)	III (B)
Morphosyntax:	Verbal/Prepositional	Verbal/Prepositional Grammatical	Grammatical

Table 58 – An overlap model of morphosyntactic shift. Adapted from Heine 1993:50.

Prior to their addition into Egyptian verbal constructions, the lexical sources of Egyptian auxiliaries were within stage I of the overlap model, in which they had either fully verbal or prepositional

[249] See pg.140-141.

morphosyntax. Once a source began to be auxiliarified, stage II was reached, in which the lexeme remained in use with a fully verbal or prepositional morphosyntax, while the new auxiliary took on a grammatical morphosyntax. At this stage there was ambiguity between the two forms, since the auxiliary had not yet undergone any phonological or morphological changes, and was thus identical in its written and spoken form to its lexical source. Thus in many contexts, the interpretations of the word in question as lexical or grammatical are both viable. Within stage III, this ambiguity was no longer in place, since the auxiliary had undergone phonological and morphological changes, ensuring that its divergence from its lexical origin was now evident in its spoken and orthographic forms, as well as in its syntax and semantics. Within Egyptian, the lexical sources of auxiliaries each survived as verbal or prepositional lexemes through to the Coptic stage, with the exceptions of *pꜣ*, which is unattested as a lexeme, and *ḥnꜥ*, which was used as a preposition through to Demotic, but had no Coptic successor. This shows the continued presence of both A and B in the overlap model in the majority of cases, but the loss of the ambiguity between these shows the loss of A/B.

3.a.iii. How Similar were Pre- and Post-Auxiliarification Forms?

3.a.iii.1. Word Order of the Subject and Content Verb

One of the most distinctive differences between the auxiliarified forms of constructions and the pre-auxiliarification forms they replaced is the change in word order from V(erb)S(ubject) to SV. This will be discussed at length in section 3.a.iii., but must be noted here as a significant difference between pre- and post-auxiliarification linguistic forms in almost every construction.

One construction which does not exhibit a change in word order concurrently with auxiliarification is the conjunctive[250]. Within the development of the conjunctive, the auxiliarified linguistic form, *ḥnꜥ sḏm ntf*, had VS word order. Although prior to *ḥnꜥ sḏm ntf* there was no separate conjunctive construction, and its source construction *ḥnꜥ sḏm* did not take a subject, the form of the content verb as an infinitive in *ḥnꜥ sḏm* and *ḥnꜥ sḏm ntf* ensured that *ḥnꜥ sḏm ntf* had the same VS word order as any infinitive with a subject (Gardiner 1957:225). A change in word order to SV occurred later, evident from the subsequent form *ḥnꜥ ntf sḏm*.

Further exceptions to the concurrency of auxiliarification and word order change are evident in the second instances of auxiliarification in the perfect and future constructions[251]. However this is simply due to the word order of these constructions already having undergone a change from VS to SV in

[250] See pg.244-246.
[251] See pg.61-64 & 147-149.

each of their first auxiliarifications[252]. Thus they could not undergo this change in word order in their second auxiliarifications, since the existing word order of each construction was already SV.

3.a.iii.2. Markers

Of the 17 constructions considered in this thesis, 12 contained other elements in addition to the content verb and subject pre-auxiliarification, and in addition to the content verb, subject and auxiliary post-auxiliarification. These semantic markers were used to aid in conveying the nuanced meaning of the construction. In all cases but the three constructions in which the content verb carried a verb ending pre-auxiliarification[253], the semantic markers morphologically differentiated each construction from the bare *sḏm=f* forms used for the past, present and future at various stages, and from each other. In six of these 12 constructions the marker was used to express negation.

Almost all of the 12 markers behaved the same during the auxiliarification of the content verb, being unaffected by this process[254], and being formally identical in both the immediate pre-auxiliarification and newly auxiliarified forms of each construction. Furthermore, all 12 markers remained in the same position, appearing as the first element of all forms in each construction. The only marker which shows a change in form is that of the negative present, although like other markers this retained its position at the beginning of the construction. The marker used in the negative present, used to mark negation, appeared as *n* in the pre-auxiliarification form *n sḏm=f*, but as *nn* in the auxiliarified *nn sw ḥr sḏm*[255]. This latter negation, *nn*, was the standard negation of the non-verbal location pattern (Gardiner 1957:97) on which the auxiliarified present and negative present forms were based, and was also used in the auxiliarified negative future form, since this was also based on the location pattern. However, since the pre-auxiliarification form of the negative future also used the negative marker *nn* in the pre-auxiliarification *nn sḏm=f*, the marker in this construction did not experience a change in form concurrent to the auxiliarification of the *sḏm=f* section of the construction, and such a change is seen only in the negative present construction.

The lack of change to the majority of markers concurrent with auxiliarification, along with the lack of markers in the remaining five constructions, ensured that in all but one construction the content verb and subject of the pre-auxiliarification forms were the only elements impacted by the auxiliarification of the content verb.

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[252] See pg.56 & 141.
[253] Negative present, terminative, not yet.
[254] Change to markers during analyticisation which occurred at a separate time from that of the auxiliarification of the content verb will be discussed in 3.b.iii.
[255] See p.106-108.

3.a.iii.3. Forms of Pronominal Subjects

In their immediately pre-auxiliarification forms, 16 verbal constructions used an affix to represent pronominal subjects[256]. In their initial post-auxiliarification forms, 15 constructions[257] continued to utilise affixes for this purpose.

In each of the two constructions which used other forms of pronouns post-auxiliarification constructions the auxiliary was prepositional in origin. One of these, the negative present *nn sw ḥr sḏm*, utilised dependent pronouns, which may be classified as clitics, to express pronominal subjects, while the other, the conjunctive *ḥnꜥ sḏm ntf*, used independent pronouns, which may be categorised as independent words[258]. The use of dependent or independent pronouns here stemmed from the source construction of each linguistic form.

The negative present *nn sw ḥr sḏm* was developed from the negative non-verbal location pattern, in which a pronominal subject was expressed using a dependent pronoun (Gardiner 1957:97), as in Ex.489.

(489) *nn* *wi* *m-ḥr-ib=sn*
NEG 1SG in_the_middle_of=3PL
I was not in the middle of them.
MES, 45.8-9 (Gardiner 1957:97)
12th dynasty

The conjunctive *ḥnꜥ sḏm ntf* developed from *ḥnꜥ sḏm*, in which the content verb was in the infinitive form, which used independent pronouns when expressing a pronominal agent (Gardiner 1957:225).

However, despite the use of dependent or independent pronouns in the initial auxiliarified forms of the negative present and conjunctive respectively, both of these constructions did use affixes in later forms. The negative present used affixes within a pronominal compound to express 1st and 2nd person pronominal subjects in *bn sw ḥr sḏm* (*iwn3*), the immediate successor of its first auxiliarified form *nn sw ḥr sḏm*, and in Demotic also expressed 3rd person singular subjects using suffix pronouns, although 3rd person plural subjects were not expressed using an affix until Coptic[259]. The conjunctive first used affixes[260] in *mtw=f sḏm*, the second successor of its first auxiliarified form *ḥnꜥ sḏm ntf*. It is interesting to note that in both of these constructions, it was the first auxiliarified form in which

[256] The exception being the conjunctive construction.
[257] Involving 18 cases of auxiliarification, since this occurred in both cases of auxiliarification in the perfect and future constructions.
[258] See 5.b. for more on the discrepancy between the use of affixes, clitics and independent words to express pronominal subjects.
[259] See pg.109 & 112, and compare Ex.206 (pg.111) with Ex.220 (pg.115).
[260] This involved the reanalysis of the independent pronoun as the conjunctive marker *mtw* followed by a suffix pronoun. See pg.247-248.

affixes were used to express pronominal subjects which replaced the pre-auxiliarification form as the most common form of the construction, rather than simply the first auxiliarified form. Instead the first auxiliarified form was used alongside the pre-auxiliarification form as a secondary means of expressing the construction, until it developed into a form in which pronominal subjects were identified as affixes.

3.a.iii.4. Forms of the Content Verb

3.a.iii.4.a. Pre-auxiliarification

In the pre-auxiliarification forms of each construction, the content verb typically appeared in an inflected form, containing the grammatical information of the construction. Within several constructions which used markers to help express the distinct meaning of the construction, the content verb utilised a linguistic form of another construction, typically the future *sḏm=f*[261]. In three constructions, the negative present, not yet and terminative, the content verb took a verb ending. Furthermore, some categories of verbs in certain constructions exhibited morphological distinctions.

3.a.iii.4.a.i. Distinctions in Geminating (2AE-GEM), Weak (3AE-INF) and Irregular Verbs

Within Middle Egyptian, geminating, weak and irregular verbs displayed morphological distinctions within the past (*iw*) *sḏm.n=f*, present (*iw*) (Subject) *sḏm=f*, and future *sḏm=f*, as illustrated in table 59. This was not the case for strong verbs, for which the forms used in these three constructions were morphologically identical.

	Past (*iw*) *sḏm.n=f*	Present (*iw*) (Subject) *sḏm=f*	Future *sḏm=f*
Strong Verbs (2-LIT & 3-LIT)	*sḏm*	*sḏm*	*sḏm*
Geminating Verbs (2AE-GEM)	*mȝ*	*mȝȝ*	*mȝ*
Weak Verbs (3AE-INF)	*mr*	*mr*	*mr / mry*
Irregular Verb (*rdi*)	*rdi / di*	*di*	*di*
Irregular Verb (*ii*)	*ii / iw*	*ii / iw / iy*	*iwt*

Table 59 – Morphological forms of various classes of verbs in the Middle Egyptian forms of the past, present and future constructions. Adapted from Allen 2010:300.

The main distinctions evident are that geminating verbs expressed both the second and third consonants of their root in the writing of the present (*iw*) (Subject) *sḏm=f*, but only one of these two

[261] As used in the in the causative imperative, negative causative imperative, causative infinitive, finalis and temporal.

identical consonants was expressed in the writing of the future *sḏm=f*, while weak verbs, whose third weak consonant was not expressed in the writing of most constructions, could sometimes display a *y* ending in the writing of the future *sḏm=f*, although this was not obligatory. Each of these features could theoretically have been adopted by an auxiliary of verbal origin which belonged to the geminating, weak or irregular categories. However, since the auxiliaries added in the present and future constructions were both prepositional in origin and thus could not adopt verbal features, while the content verb took on an infinitival morphology, these morphological distinctions were not present in auxiliarified forms. Furthermore, within each of the other constructions in which the future *sḏm=f* was used, auxiliarification occurred within Demotic, which does not show regular morphological distinctions between different constructions (Johnson 1976:11).

3.a.iii.4.a.ii. *sḏm.t*

In the pre-auxiliarification forms of the terminative and not yet constructions, the content verb appeared with the obligatory verb ending *.t*. During auxiliarification, both of these constructions added *ir* as an auxiliary, and in the auxiliarified form expressed the auxiliary, subject and content verb as *ir.t=f sḏm*. This shows the retention of the verb ending *.t* in the auxiliarified form, with it appearing as the ending of the auxiliary, since the auxiliary appeared in the position previously occupied by the content verb, and contained the grammatical information of the construction. In both constructions, *.t* is visible in every subsequent form, showing that it was retained throughout the auxiliarification process, and beyond the loss of the auxiliary *ir* in the case of the terminative.

3.a.iii.4.a.iii. *sḏm.n*

The verb ending *.n* was written in three constructions, in the past (*iw*) *sḏm.n=f*, the negative habitual *n sḏm.n=f* and *bw sḏm.n=f*, and the negative present *n sḏm.n=f*. However, since (*iw*) *sḏm.n=f* was replaced[262] as the most common form of the past construction by *sḏm=f* before an auxiliary was added to the past construction, the process of auxiliarification did not affect (*iw*) *sḏm.n=f*. Similarly, the negative habitual *bw sḏm.n=f*, developed into *bw sḏm=f*[263] prior to the auxiliarification the construction, and thus *bw sḏm.n=f* was unaffected by auxiliarification.

However, in the negative present the linguistic form containing the verb ending *.n* was the immediate pre-auxiliarification form of the construction. In *n sḏm.n=f*, the presence of *.n* was obligatory, and based on the evidence of the retention of the verb ending *.t* from the *sḏm.t* form, it might be expected that if the negative present took an auxiliary which had a verbal lexical origin, with auxiliarification involving direct development, the ending *.n* would appear on the auxiliary post-

[262] Or directly developed into. See pg.39.
[263] See pg.129.

auxiliarification. However, the auxiliary added to the negative present construction was sourced from the prepositional lexeme *ḥr*, which consequently could not take on verbal properties such as verb endings. Furthermore, auxiliarification in the negative present occurred through replacement rather than direct development. Thus the ending *.n* was not present in the initial auxiliarified form of the negative present, nor in any subsequent forms.

3.a.iii.4.b. Post-auxiliarification

3.a.iii.4.b.i. The Infinitive

The most common form taken by the content verb in the auxiliarified forms of each construction was the infinitive. This was used as either the only or the most common form for the content verb post-auxiliarification in every construction considered in this thesis, with the exception of the perfect form **ⲁϥⲟⲩⲱ ⲉϥⲥⲱⲧⲙ**, in which the content verb was an infinitive, but within a full clause[264]. This shows a commonality between constructions, with it being the auxiliary which caused differences post-auxiliarification rather than the content verb, which could be the source of differences in pre-auxiliarification forms.

In constructions in which the auxiliary used had a verbal lexical origin, the content verb, as the complement of the auxiliary, took the place which would have been occupied by the noun phrase object of the content verb in pre-auxiliarification forms. In constructions which used auxiliaries of prepositional origin, the content verb took the place previously occupied by the noun phrase object of the prepositional lexeme in the non-verbal construction which was the source construction for the auxiliarified linguistic form[265].

The infinitive was particularly suited to the expression of the content verb as the complement of an auxiliary, as it did not require an extra subject expression in a shared subject construction, and thus could express a second verb without the need for an additional full clause. Furthermore, in all stages of the Egyptian language, the infinitive was the verbal form which contained the least grammatical information, expressing the action of the verb without expressing tense, aspect, mood, or voice (Allen 2013:104). This consequently shows that the content verb in forms of each construction which also contained an auxiliary contained no grammatical information, with this being expressed by the auxiliary instead.

[264] See pg.61-63.
[265] Within the conjunctive this occurred in the development from *ḥnʿ* + noun to *ḥnʿ* + infinitive, with the latter of these subsequently providing the source construction for the conjunctive *ḥnʿ sḏm ntf*.

3.a.iii.4.b.ii. Other Forms

The majority of constructions[266] were only able to express their content verbs in the infinitive form post-auxiliarification. However, the present and negative present constructions were also able to utilise the stative, although this was used as an alternative not to the infinitive alone, but to the combination of the auxiliary and infinitive. This replacement of both the auxiliary and infinitive suggests that the grammatical information of this construction was not tied strongly enough to the auxiliary to make it obligatory, which can also be seen through the later loss of *ḥr* and consequent unmarked expression of present tense. The stative itself became less marked over time, with the endings used in Demotic no longer being required to agree with the subject but simply marking the form in question as a stative (Johnson 1976:21), and Coptic statives often not requiring an ending at all, showing the loss of expression of grammatical information from this form.

As well as the stative, the present and negative present could also replace the auxiliary and infinitive with an adverb or prepositional phrase, creating a non-verbal present tense construction, and again showing the unobligatoriness of the auxiliary in expressing the grammatical information of the construction.

The future and negative future constructions were also able to use alternative prepositional phrases (Groll 1970:126) to replace the auxiliary and infinitive elements of their respective auxiliarified forms *iw=f r sḏm* and *nn iw=f r sḏm*, albeit for only a short time within Late Egyptian. This illustrates the unobligatoriness of the auxiliary *r* in expressing the grammatical information of each construction. However, in this case this role had been taken on by another element within the construction, *iw*.

It is interesting to note that the four constructions which were able to use alternative forms to the infinitive to express their content verbs each contained an auxiliary of prepositional origin, and were each based on the non-verbal location pattern, with the auxiliarification of each consequently occurring through replacement.

3.a.iii.5. Conclusions

Broadly speaking, the initial auxiliarified forms of each construction were similar to the immediate pre-auxiliarification forms with regards to any marker within the construction, whilst the grouping of the auxiliary, subject and content verb in the auxiliarified form exhibited several differences from the content verb and subject group in the pre-auxiliarification form. The most obvious difference here is the additional presence of the auxiliary, as well as the change in word order from VS to SV, which occurred in all cases auxiliarification but that of the conjunctive and the second

[266] 13 out of 17.

auxiliarifications of the perfect and future constructions. Any markers used in each construction were exempt from the effects of auxiliarification, remaining identical in form, position, and function. The negative present shows the only exception to this, with the change in the marker from *n* to *nn* showing a slight change in form, although it shows no change in position or function.

In most constructions, the form taken by pronominal subjects was also identical in the pre- and immediately post-auxiliarification forms, with affixes typically being used in every linguistic form. However, the negative present again provides an exception, using suffix pronouns pre-auxiliarification, but using dependent pronouns in its first post-auxiliarification form. Furthermore, within the conjunctive construction, the subject was not expressed pre-auxiliarification, but independent pronouns were used in the immediate post-auxiliarification form.

In contrast to the form of pronominal subjects, the form of the content verb was changed in each construction, being in an inflected form pre-auxiliarification, and an infinitive post-auxiliarification. The only exception to this was the conjunctive construction, the source construction of which also expressed the content verb as an infinitive. Furthermore, the majority of cases in which the pre-auxiliarification form of the content verb was made morphologically distinct through the use of verb endings or doubling of the final consonant, this distinction was not evident in the written realisation of the auxiliarified form. However, in the two constructions which used the form *sḏm.t* for the content verb in the pre-auxiliarification form, the verb ending *.t* was retained in the auxiliarified form, appearing on the auxiliary rather than the content verb post-auxiliarification.

3.a.iv. Word Order

3.a.iv.1. Concurrency of Auxiliarification and a Change in Word Order of the Verb and Subject

As noted above, in 16 of the 19 cases of auxiliarification there was a concurrent change of word order from VS to SV. Such a change in word order did not occur with any other process involved in analyticisation.

This change in word order was a result of the reanalysis and grammaticalisation of verbal and prepositional lexemes as auxiliaries, with the newly auxiliarified form being initially subject to the grammar of its source construction. This concurs with the crosslinguistic trend that grammaticalisation interacts extensively with word order change, although word order change is not part of grammaticalisation itself (Hopper & Traugott 2003:232), with word order change being one possible outcome of, or enabling factor for, grammaticalisation (Hopper & Traugott 2003:60). In the case of Egyptian verbal constructions, word order change was an outcome of grammaticalisation, rather than an enabling factor.

For Egyptian verbal constructions which used auxiliaries of verbal origin, the newly auxiliarified form was based on the existing most common linguistic form of the construction it was used in, with auxiliarification involving direct development. In contrast, for constructions which used auxiliaries of prepositional origins, the newly auxiliarified form was based on an alternative source construction, with auxiliarification subsequently involving the replacement of the existing most common form of the construction.

When the auxiliary added to a construction was verbal in origin, it took the position previously occupied by the content verb, while the content verb took the place previously occupied by its own nominal complement, becoming the complement of the auxiliary. The subject retained its position from pre-auxiliarification linguistic forms, in which it followed (in the case of nominal subjects) or was suffixed to (in the case of pronominal subjects) the content verb, with pre-auxiliarification forms thus having VS word order. However, since in the newly auxiliarified forms the auxiliary had taken the place of the content verb, the subject consequently appeared following or suffixed to the auxiliary. Since in pre-auxiliarification forms the complement was unable to appear between the content verb and subject, in the auxiliarified form the content verb, having taken the position previously occupied by its complement, was consequently unable to separate the auxiliary and subject. It thus appeared after both of these elements, leading to SV word order post-auxiliarification.

When the auxiliary was prepositional in origin, the word order taken by the auxiliarified construction was not related to the word order of its pre-auxiliarification form, but instead was related to the word order of a non-verbal pattern which provided the source construction for the auxiliarified form. For the majority of constructions which took an auxiliary of prepositional origin, the word order of the auxiliarified form was based on that of the location pattern. This was not the case for the conjunctive construction, but as this was the sole construction in which the addition of an auxiliary did not coincide with a change in word order, this will be discussed separately below.

For the constructions in which the initial auxiliarified form was based on the location pattern, the word order was taken from the location pattern's S PREP NP word order. The subject took the same place in the auxiliarified forms of verbal constructions as in the location pattern, and the auxiliarified preposition remained in the same position as the lexical preposition. The content verb took the position which in the location pattern was occupied by the noun phrase complement of the preposition, becoming the complement of the auxiliary. The content verb consequently appeared after the subject, resulting in SV word order, and showing a change from the VS word order used in the pre-auxiliarification forms of each construction.

The sole construction of the 17 considered in this thesis which did not undergo a change in word order to SV concurrently to the addition of an auxiliary was the conjunctive. That is not to say that it did not undergo a change in word order at all within its development, but that the change in word order did not occur due to auxiliarification as in other constructions. This was due to the form of the verb in the source construction of the auxiliarified form of the conjunctive construction. This auxiliarified form, *ḥnᶜ sḏm ntf*, was based on *ḥnᶜ sḏm*, formed of *ḥnᶜ* followed by an infinitive[267]. While the construction *ḥnᶜ* + infinitive did not take a subject, the form of the verb as an infinitive ensured that when a subject was expressed in *ḥnᶜ sḏm ntf* it followed the word order of other cases of the infinitive with a subject, in which the subject appeared after the infinitive (Gardiner 1957:225), causing the VS word order of *ḥnᶜ sḏm ntf*.

The word order of the conjunctive construction became SV in the subsequent form, *ḥnᶜ ntf sḏm*, with this likely occurring due to the influence of other constructions in which the independent pronoun appeared, or the contemporary general tendency of an increasing number of verbal constructions to have SV word order (Winand 1992:465)[268].

The second instances of auxiliarification within the perfect and future construction also show no concurrent change in word order. However, in each of these an earlier instance of auxiliarification had already caused a change in word order from VS to SV. Within the second auxiliarification of the perfect construction the auxiliary **ⲟⲩⲱ** took the place of the content verb in the previous form **ⲉⲁϥⲥⲱⲧⲙ**, with the subject and content verb appearing as its complement in a circumstantial present construction. Thus within **(ⲉ)ⲁϥⲟⲩⲱ ⲉϥⲥⲱⲧⲙ** both expressions of the subject appeared before the content verb, maintaining the SV word order. Within the second auxiliarification of the future construction, the auxiliarified form *tw=i m nᶜy r sḏm* was based on the present *sw ḥr sḏm* with the predicate *m* + infinitive, and thus ultimately derived from the location pattern. Since the resultant form of the first auxiliarification, *iw=f r sḏm*, also derived from the location pattern, these two linguistic forms ended up with the same SV word order.

It has previously been stated that the widespread change in word order from VS to SV in the Egyptian verbal system 'affects constructions in Demotic and Coptic' (Allen 2013:153). However, of the 17 verbal constructions examined in this thesis, only eight exhibit this change in word order as late as Demotic. Of these, seven involve a construction where the auxiliary used was *ir*[269], with the remaining construction being the perfect, in which the auxiliary was *wꜣḥ*. That the auxiliarified forms

[267] See pg.240-241.
[268] See pg.245-246.
[269] Namely the past, habitual, causative imperative, negative causative imperative, causative infinitive, finalis, and terminative.

of seven out of the ten constructions which used *ir* as an auxiliary were not used to replace the existing most common form until Demotic, while six out of the seven constructions which took auxiliaries from other lexical sources had replaced the pre-auxiliarification form with an auxiliarified form by Late Egyptian, suggests that it was not until later Late Egyptian and Demotic that a standardisation of the source used in auxiliarification occurred.

In eight of the nine constructions which show a change in word order before Demotic, the change in word order is evident within the Late Egyptian stage, while the conjunctive shows this change in word order in late Middle Egyptian. However, while in these eight constructions Late Egyptian was the stage during which an auxiliarified form replaced the pre-auxiliarification form as the most common linguistic form of the construction, causing a change in word order, it was not necessarily the stage at which each auxiliarified form is first attested. In three constructions, the negative past, present and future, the auxiliarified form is first attested from Old Egyptian, while in the negative present and negative future constructions the earliest auxiliarified form is first attested from Middle Egyptian. Only three constructions, the negative habitual, not yet and terminative, exhibit both the first attestation of an auxiliarified form and the replacement of a pre-auxiliarification form within Late Egyptian. Each of these three constructions used *ir* as its auxiliary, again indicating that those constructions in which auxiliarification occurred in Late Egyptian or later were largely part of a standardisation of the auxiliary used, while in constructions in which auxiliarification occurred earlier, a wider range of sources could be used to provide the auxiliary. Furthermore, the time difference between the first attestation of an auxiliarified form and the time at which this auxiliarified form replaced the existing most common form of the construction indicates that, despite new auxiliarified forms being attested in all language stages, it was not until Late Egyptian that their use became widespread.

The concurrence of auxiliarification and a change in word order is also attested crosslinguistically. For example, the Greek future construction described in 1.b.iii[270] shows a change in word order from VS to SV, similar to that in Egyptian verbal constructions, concurrently with auxiliarification of παύσω to μὲλλω παύειν (and less common forms with alternative auxiliaries). However, evidence from the Latin/French future construction shows that a change in word order was not always a result of auxiliarification, concurring with evidence from the second auxiliarifications of the Egyptian perfect and future constructions[271]. In the auxiliarified Latin form *amare habeo* the auxiliary, on which the subject appeared as a verb ending, was written after the content verb. This ensured that

[270] See pg.16-17.
[271] See pg.265-266.

the word order remained VS, as it had been in the preceding form *amabo*[272]. This contrasts with auxiliarified forms in Egyptian verbal constructions, in which the auxiliary, which the subject immediately followed, was written before the content verb, resulting in SV word order. The second auxiliarification of the Latin/French future construction did result in a change in word order to SV, with the subject pronoun and auxiliary with a subject ending in *je vais aimer* all appearing before the content verb. However, this change in word order did not occur through auxiliarification alone, and was aided by an earlier addition of an extra subject expression in *j'aimerai*, which had resulted in the word order SVS[273].

3.a.iv.2. Word Order of the Verb, Subject and Auxiliary

The majority of constructions exhibit a trend in which the auxiliarified forms of constructions with auxiliaries of verbal origin have the word order A(uxiliary)SV, while the auxiliarified forms of constructions with auxiliaries of prepositional origin have the word order SAV. This trend occurred primarily due to the word order of the source constructions on which the initial auxiliarified form of each construction was based.

When the auxiliary added to the construction was verbal in origin, it took the place previously occupied by the content verb of the construction, while the subject remained in the same position, following or suffixed to what had been the content verb and was now the auxiliary, and the content verb took the place previously occupied by its complement, becoming the complement of the auxiliary. Thus the word order of such constructions changed from VS COMP to ASV. This concurs with the findings of typological studies regarding the word order taken following the addition of an auxiliary of verbal origin to a construction, that auxiliaries and their complements regularly exhibit the same linear relation as the source verb of the auxiliary and its object (Anderson 2006:23).

On the other hand, when the auxiliary was prepositional in origin, the auxiliarified form was predominantly based on the auxiliarified location pattern, which followed the word order S PREP NP. In the auxiliarified verbal constructions, the auxiliarified preposition took the place of the prepositional lexeme in the location pattern, while the content verb took the place of the noun phrase and the subject remained in the same position, thus creating the word order SAV.

However, in each of these categories there was one exception. Despite its auxiliary *ḥnꜥ* being of prepositional origin, the conjunctive construction never exhibited the word order SAV, but instead its first auxiliarified form had the word order AVS, a unique word order among the Egyptian verbal

[272] See pg.13.
[273] See pg.14.

constructions analysed in this thesis, while its later forms followed the order ASV, similar to constructions with auxiliaries of verbal origin. This initial word order of AVS was due to the VS word order which occurred when an infinitive, the form of the content verb in the source construction *ḥnʿ sḏm* and in the conjunctive *ḥnʿ sḏm ntf*, took a subject (Gardiner 1957:225).

Furthermore, the second auxiliarification of the future construction resulted in the auxiliarified form *tw=i m nʿy r sḏm*, which exhibited the word order SAV, despite the central element of the auxiliary, *nʿy*, being of verbal origin. This was due to the source constructions for this linguistic form being the present *sw ḥr sḏm*, which had already undergone auxiliarification utilising the preposition *ḥr* as an auxiliary (with the predicate *m* + infintive used with verbs of motion), and thus had the word order SAV. This was maintained in *tw=i m nʿy r sḏm*, since the *m nʿy* section of the auxiliary group took the place of *ḥr sḏm* from the present form, while the remaining *r* and the content verb followed afterwards, taking the position of a purpose clause extending the main clause.

In (ϩ)ⲁϥⲟⲩⲱ ⲉϥⲥⲱⲧⲙ, the result of the second auxiliarification of the perfect construction, the subject was expressed twice, resulting in the word order SASV[274].

No Egyptian verbal construction ever exhibited a word order in which the verb appeared before the auxiliary. This is concurrent with crosslinguistic evidence that in languages with VO(bject) word order, such as Egyptian, auxiliaries precede content verbs (Hopper & Traugott 2003:60).

[274] In the predecessor of this form, *w3ḥ=f iw=f sḏm*, the word order was ASV, despite there being two subject expressions.

3.b. Other Causes of Analyticisation

3.b.i. Additional Presence of the Verb Ending *.n*

Of the 17 constructions examined in this thesis, two can be seen to have experienced an increase in analyticity due to the additional presence of the verb ending *.n*, which subsequently increased the quantity of elements within each construction. This occurred in the past construction[275], in which the earliest attested linguistic form *sḏm=f* was followed by *(iw) sḏm.n=f*, and in the negative present construction[276], in which the earliest attested linguistic form *n sḏm=f* was followed by *n sḏm.n=f*. The element *.n* in each construction originated from the dative preposition *n* (Depuydt 2003:30), which was reanalysed as a verb ending.

Within the past construction, the increase in analyticity caused by the additional presence of *.n* was followed by an increase in syntheticity through *sḏm=f* becoming the most common linguistic form, thus ending this stage of analyticisation. The lack of auxiliarification in this analyticisation of the past construction shows that although auxiliarification was the most common process involved in the analyticisation of Egyptian verbal constructions, occurring at least once in the development of each construction, it was not necessarily required in analyticisation.

Within the negative present construction, in contrast to the past construction, the increase in analyticity caused by the additional presence of *.n* was not followed by syntheticisation, but was instead followed by auxiliarification, resulting in *nn sw ḥr sḏm*. Since no syntheticisation occurred between them, the increase in analyticity from the additional presence of *.n* and that from the auxiliarification contributed to the same analyticisation stage of the negative present construction.

3.b.ii. Additional Presence of a Second Negative Marker

The addition of a second negative marker was the cause of an increase in analyticity in two constructions, the negative present and negative future. Within the negative present construction, this occurred through the addition of *iwn3* in certain contexts[277]. *iwn3* originally carried the meaning 'indeed' or 'certainly' (Gardiner 1904:130-133), and initially strengthened the existing negative marker *bn* in *bn sw ḥr sḏm* (*iwn3*). *iwn3* can later be seen to have undergone reanalysis to become a negative marker. The effects of this reanalysis may be seen in the obligatorification of *iwn3* in the negative present construction[278], with obligatorification being an indicator that reanalysis has

[275] See pg.34-37.
[276] See pg.106-107.
[277] See pg.110-111.
[278] See pg.113-114.

occurred (Langacker 1977:94). This obligatorification also caused the increase in analyticity which resulted from the additional presence of *iwn3* to take effect across the entire paradigm of the construction once *iwn3* became obligatory in all uses of the negative present as the Coptic form ⲁⲛ. The change in category of *iwn3* to a negative marker is particularly evident from the use of the later writing ⲁⲛ alongside other reinforcers of negation[279], and as the sole negative marker within a clause[280].

Within the negative future construction, ⲁⲛ was utilised in addition to the negative marker ⲛ in ⲛⲫⲛⲁⲥⲱⲧⲙ ⲁⲛ, and possibly earlier as *in* in the form *bn iw tw=y n3 sḏm* (*i*)*n*[281], with this pattern having spread by analogy from the negative present construction. The obligatorification of *iwn3* in the negative present construction also involved the mechanism of analogy, with each case of analogy here making visible the reanalysis of *iwn3*, as is common crosslinguistically (Hopper & Traugott 2003:68).

The addition of a second negative marker to a negative construction is found 'in quite a few languages' (Dahl 1979:88). This is typically observed to follow Jespersen's cycle, in which the original negation is initially weakened, then strengthen through the use of an additional word, which subsequently begins to be viewed as the 'negative proper', and may then be subject to the same weakening and strengthening with another word as the original negation (Jespersen 1917:4).

In the Egyptian negative present and negative future constructions, the strengthening of original negative marker can be observed through the addition of *iwn3*/ⲁⲛ, while the development in which ⲁⲛ was considered to be the 'negative proper' can be seen through the unobligatoriness of ⲛ, the form of the original negative marker by Coptic, in ⲛⲫⲥⲱⲧⲙ ⲁⲛ and ⲛⲫⲛⲁⲥⲱⲧⲙ ⲁⲛ of the negative present and negative future respectively. However, within the Egyptian written language, this original negative marker was not lost completely, and ⲁⲛ did not visibly begin to go through this cycle itself.

This shows a similar development to the K'iche' negation outlined in 1.b.ii, in which the addition of a post verbal negative element *ta(x)* strengthened the original negator *man(a)* and caused an increase in analyticity through an increase in the quantity of elements in the constructions in which it was used[282]. Similar to the Coptic negative marker ⲛ, the original K'iche' negation *man(a)* is undergoing

[279] See Ex.337 (pg.172).
[280] See Ex.218-219 (pg.115) and Ex.340-342 (pg.174).
[281] See pg.171-172.
[282] See pg.15.

loss, which is currently incomplete in modern K'iche' (Romero 2012:86), with *ta(x)* becoming the 'negative proper'.

Within the Egyptian negative present construction, the increase in analyticity caused by the addition of *ỉwn3* occurred immediately after the auxiliarification of the construction, and thus the addition of *ỉwn3* belonged to same stage of analyticisation as the process of auxiliarification and the preceding addition of *.n*. Since the following developments in the negative present construction each caused an increase in syntheticity, the addition of *ỉwn3* was the final process involved in the analyticisation of this construction.

Within the negative future construction, the addition of ⲁⲛ and ⲛⲛⲁⲥⲱⲧⲙ ⲁⲛ becoming the most common form of the construction occurred following a stage of syntheticisation, caused by the coalescence visible from ⲛⲛⲉⲥⲥⲱⲧⲙ[283]. Consequently, and since it also provided the final attested form of the negative future construction, the addition of ⲁⲛ to the negative future construction was the sole cause of this stage of analyticisation. As with the addition of *.n* in the past construction, this provides further evidence that the process of auxiliarification was not required to cause the analyticisation of Egyptian verbal constructions, despite how widespread it was.

3.b.iii. Expansion of Markers

Three constructions, namely the negative causative imperative, terminative and temporal, showed an increase in analyticity within their developments due to the expansion of their semantic markers. This involved the addition of an extra element to the existing elements of the marker, and thus an increase in analyticity occurred through an increase in the quantity of elements in each construction. Such a cause of analyticisation may be seen crosslinguistically in the K'iche' negation detailed in 1.b., in which the negative marker *ma* was expanded to *man(a)* through the addition of the enclitic *na*[284].

In the negative causative imperative construction, the marker *m dy* was expanded to become *m ỉr dỉt* within *m ỉr dỉt sḏm=f* through auxiliarification. This was able to occur since the marker of this construction was a verbal construction itself, namely the negative imperative with *rdỉ* as a content verb[285]. This auxiliarification occurred directly before the auxiliarification of the content verb of the negative causative imperative, thus contributing to the same analyticisation stage. As with other causes of auxiliarification in Egyptian verbal constructions[286], this involved the reanalysis of a lexical

[283] See pg.170-174.
[284] See pg.15.
[285] See pg.185.
[286] See 3.a.ii.

item, in this case the verbal lexeme *irí*, as an auxiliary, showing the initial stage of the grammaticalisation of this item.

Within the development of the terminative construction, the marker *i* in *i-ir.t=f sḏm* was expanded to become *šꜣ i* in *šꜣ i-ir.t=f sḏm*, through the addition of the preposition *šꜣ*[287]. This occurred directly after the auxiliarification of the terminative construction, and thus contributed to the same analyticisation stage with a further increase in analyticity. Following the addition of *šꜣ*, the syntheticisation of the terminative construction began, thus the addition of *šꜣ* was the final process involved in the analyticisation of this construction.

Similarly, within the temporal construction, the initial form of the marker *ḏr* was expanded to become *m ḏr* through the addition of the preposition *m*[288], with this occurring directly before the auxiliarification of this construction. The expansion of the marker in the temporal construction began the analyticisation stage which was completed with auxiliarification.

Within the terminative and temporal constructions, the prepositions *šꜣ* and *ḏr* were reanalysed to become grammatical markers of their respective constructions. As with all cases of reanalysis, this reanalysis was not visible in the surface manifestation of the construction until revealed by a change in form (Hopper & Traugott 2003:50), in these cases the development in the terminative from *šꜣ* to *š*[289], and in the temporal from *ḏr* to a variety of orthographies in Later Egyptian and Demotic[290], and later ⲧⲉ in Coptic.[291]

3.b.iv. Additional Presence of an Expression of the Subject

In the perfect and conjunctive constructions, analyticity was increased through the additional presence of an element which expressed the subject. In each case this occurred concurrently with auxiliarification.

Within the perfect construction, in the development from ϩⲁϥⲥⲱⲧⲙ to (ϩ)ⲁϥⲟⲩⲱ ⲉϥⲥⲱⲧⲙ, the additional expression of the subject was provided through the use of the circumstantial present ⲉϥⲥⲱⲧⲙ to express the content verb[292]. This was a result of ⲟⲩⲱ having been reanalysed as an auxiliary, but not yet having been grammaticalised enough to take a bare infinitive as its complement, and thus requiring a clausal complement. Since ⲉϥⲥⲱⲧⲙ provided a full clause, it

[287] See pg.213.
[288] See pg.232-233.
[289] See pg. 217.
[290] See pg.233-235.
[291] See pg.236-237.
[292] See pg.61.

required its own expression of the subject, despite the subject already being expressed within (ⲉ)ⲁⲭⲟⲩⲱ. This was similarly the case in the earlier *wꜣḥ=f iw=f sḏm*. (ⲉ)ⲁⲭⲟⲩⲱ ⲉⲭⲥⲱⲧⲙ and *wꜣḥ=f iw=f sḏm* show the only linguistic forms discussed in this thesis with two expressions of the subject.

Within the conjunctive construction, the additional expression of the subject is evident in *ḥnꜥ sḏm ntf*. The source construction for this, *ḥnꜥ sḏm*, did not express a subject, whilst *ḥnꜥ sḏm ntf* always contained a subject expression[293]. When this subject was nominal, this provided two additional elements due to the use of *in* before the noun phrase to express nominal subjects.

The additional presence of a subject expression was the only means of increasing analyticity in Egyptian verbal construction in which the additional element in the construction, here a subject expression, did not undergo reanalysis as part of its addition to the construction. However, the subject expression within the conjunctive construction did undergo reanalysis at a later stage, as discussed in 3.b.v. below.

3.b.v. Reanalysis of One Element as Two

The conjunctive construction also experienced an increase in analyticity through the reanalysis of one element into two. This involved the reanalysis of the independent pronoun as a conjunctive auxiliary and a suffix pronoun which provided the subject expression[294]. This reanalysis was made visible through the change in form from *ntf* to *mtw=f*. The reanalysed form spread across the linguistic system through analogy, beginning in forms with 2nd and 3rd person pronominal subjects and spreading to forms with 1st person pronominal or nominal subjects[295].

This increase in analyticity in the conjunctive construction occurred alongside increases in syntheticity from the loss of *ḥnꜥ* and an increase in interdependency, causing the overarching process at this stage to be syntheticisation.

Furthermore, the conjunctive is the only Egyptian verbal construction in which an increase in analyticity through the reanalysis of one element as two is evident.

[293] See pg.240.
[294] See pg.247-248.
[295] See pg.248.

4. Syntheticisation

This chapter will comparatively examine the syntheticisation stages of all verbal constructions discussed in chapter 2, analysing the common processes of erosion, loss, and coalescence, and exploring syntheticity as a feature of the Coptic language stage.

Each of the processes which caused the syntheticisation of Egyptian verbal constructions show the later stages of grammaticalisation of various elements which had been grammaticalised from lexical items through the processes which caused analyticisation, as discussed in chapter 3.

4.a. Erosion

The erosion of one or more elements of a construction is observed in the development of every construction examined in this thesis. Erosion regularly occurred in the developments of fixed elements used to express grammatical information, which is unsurprising, since it is crosslinguistically attested that grammatical items are typically shorter than lexemes (Bybee et al. 1994:19). The various processes of erosion in the developments of Egyptian verbal constructions are listed in table 60 below, having been reviewed in detail within chapter 2. This table provides the clearest way of showing the data, but it must be remembered that some cases of erosion listed here were very minor, whilst other are more certain from written evidence.

Immediate pre- and post-erosion forms	Constructions affected
iw > ϵ	future, negative future[296]
ir > ⲗ	past, not yet[297]
ir > ⲣ	negative causative imperative[298]
ir > ⲣϵ	habitual, negative habitual, causative imperative, negative causative imperative, causative infinitive, finalis, temporal[299]
wꜣḥ > ϱⲗ	perfect[300]
pꜣ > *pw*	negative past[301]
mtw > ⲛ	conjunctive[302]
nꜥy > *nꜣ*	future[303]
r > *i*	terminative[304]
r > ϵ	future[305]
šꜣꜥ > *šꜥ*	terminative[306]
tw=i > ϯ	present, negative present, future, negative future[307]
di > ⲧ	negative causative imperative, causative infinitive, finalis[308]
ḏr > ⲧϵ	temporal[309]

Table 60 – Processes of erosion observed in the developments of Egyptian verbal constructions.

Heine and Narrog (2015a:408) have noted four kinds of phonological erosion, namely loss of phonological segments; loss of suprasegmental properties; loss of phonological autonomy and adaptation to adjacent phonological units; and phonological simplification. Of these, the loss of suprasegmental properties cannot be definitively observed in the development of Egyptian verbal constructions, since in all pre-Coptic language stage, properties such as stress or intonation were not marked in the written language. However, since verbal prefixes in Coptic did not carry stress (Reintges 2004:34), but verbal lexemes could, it may be assumed that the older lexical sources of

[296] See pg.157 and Ex.329-332 (pg.159-160).
[297] See pg.48 & 227-228.
[298] See pg.189.
[299] See pg.123, 133, 180, 189, 196, 203 & 237.
[300] See pg.57.
[301] See pg.75.
[302] Applicable only to forms with pronominal subjects. See pg.249-251.
[303] See pg.154-155.
[304] See pg.212.
[305] See pg.157.
[306] See pg.217.
[307] Also *tw=k* > ⲕ, *tw=t* > ⲧϵ, *tw=n* > ⲧⲛ, and *tw=tn* > ⲧϵⲧⲛ. The writings in which ⲧ or ⲧϵ is retained before the pronoun show a subtle erosion at most. See pg.102.
[308] See pg.189, 196 & 203.
[309] It is highly probable that erosion of the Old and Middle Egyptian *ḏr* occurred during in its development to ⲧϵ in Coptic. The orthographic variations of this element in Late Egyptian and Demotic suggest that erosion had occurred by or during Late Egyptian in the spoken language, with the written language also preserving the historical spelling until the end of Demotic. See pg.232-237.

such prefixes were able to carry stress and this property was lost through auxiliarification. It is also not possible to observe the loss of phonological autonomy from the written language alone. However, it is possible to discern the loss of phonological segments, such as in the erosion of *mtw* > ⲛ, and phonological simplification, as in *r* > ⲉ. Many cases of phonological simplification in Egyptian verbal constructions involved the vocalisation of a consonant, as in *ỉw* > ⲉ. In many cases of this it was the consonant *r* which became a vowel, evident in *ỉr* > ⲁ, *r* > *ỉ*, *r* > ⲉ, and *ḏr* > ⲧⲉ.

As can be seen from table 60, the majority of cases of erosion in Egyptian verbal constructions which are visible from the written language (71%) occurred in the development between Demotic and Coptic. However, this timing is likely a reflection of the distinction between older scripts, which foregrounded consonants and were naturally conservative, and the Coptic script, which used a combination of consonants and vowels. Of the remaining four cases of erosion, the results of two are evident from a written form attested in Demotic (*nʿy* > *nȝ* and *šȝʿ* > *šʿ*), while the other two are visible from a Late Egyptian written form (*pȝ* > *pw* and *r* > *i*). The occurrence of erosion in the later stages of the Egyptian language is largely concurrent with the findings of typological studies, which have found that more grammaticalised items are more susceptible to erosion (Heine & Reh 1984:24), and thus erosion typically occurs at a later stage of grammaticalization (Heine & Narrog 2015a:407), typically after the process of cliticisation or affixation (Heine & Reh 1984:21). Thus although the natures of pre-Coptic writing systems make it likely that erosion occurred earlier than its first written evidence, the occurrence of erosion after a construction had already experienced multiple grammaticalisation processes, as indicated from written evidence, is likely to have also been the case in the spoken language.

Erosion is regularly attested crosslinguistically, and in the context of the linguistic cycle is attested crosslinguistically as a cause of syntheticisation, as may be seen from the Greek future construction detailed in 1.b.iii. In the development of the Greek future construction erosion affected the auxiliary θὲλω, initially eroding the 2nd and 3rd person forms from θέλεις to θές and from θέλει to θέ respectively, and later eroding θὰ νὰ first to θὰν and subsequently to θα[310]. In each case this reduced the length of the element(s) involved, thus reducing the length of the construction as a whole and causing an increase in syntheticity.

The occurrence of erosion may be accounted for by several related parameters which have been summarised by Heine (1993:109-111). The first of these is the quantity principle, that 'a larger chunk of information will be given a larger chunk of code' (Givón 1991:87), with lexical items being greater in size than grammatical items. This leads to the expectation that as a lexical item is

[310] See pg.16.

grammaticalised, as had occurred in the developments of all items in table 60 save for the pronominal compound *tw=i*, the item is likely to undergo a reduction in size through the erosion of its phonological material (Heine 1993:109). This would suggest that the erosion of a grammatical item is caused by its earlier desemanticisation. In the developments of Egyptian verbal constructions, the grammatical elements which show evidence of erosion all show evidence of desemanticisation at an earlier stage of their developments.

Erosion of grammatical items may also be accounted for by the principle of economy[311] and its relation to the pragmatic factor of frequency of use (Heine 1993:110). It has been established that grammatical items typically have high token frequency (Bybee 2003:602) and that high frequency items are shorted than less frequently used items (Heine 1993:110 with reference to Zipf 1935). Thus it follows that a grammatical item will be shorter than a lexical item, and as a lexical item is grammaticalised it will become shorter, with the increasing token frequency of the item being grammaticalised leading to erosion (Bybee 2003:616).

The third parameter which may account for erosion is also related to the increasing token frequency of items undergoing grammaticalisation. High frequency of use and related high probability of occurrence of grammatical items determine that such items have lower information values (Heine 1993:110 with reference to Lehmann 1974:113), and items with lower information value typically employ a smaller amount of coding material to express this information (Heine 1993:110). As a lexeme is grammaticalised and its frequency increased, its information value is lowered, causing erosion.

The fourth parameter is related to von der Gabelentz's principle of *Abnutzung* (abrasion), that 'the more a physical entity is subject to physical manipulation, the more it is likely to wear out' (Heine 1993:110 with reference to von der Gabelentz 1891:251). The more frequently an item is used the more likely it is to undergo *Abnutzung*, and since grammatical items are more frequently used than lexemes, they are more likely to be subject to erosion (Heine 1993:110).

[311] See pg.18-21.

4.b. Loss

The process of loss has been noted to typically occur at the extreme end of grammaticalisation (Hopper & Traugott 2003:172), and may occur as a result of either phonological erosion or morphosyntactic simplification of the construction (Croft 2003:256). Within the 17 Egyptian verbal constructions considered in this thesis, loss is visible in nine constructions, as shown in table 61 below.

Element Lost	Constructions Affected
iw	past, present[312]
i	terminative[313]
ir	terminative[314]
m	future[315]
.n	past, negative habitual[316]
ⲛ	negative present, negative future[317]
r	future, negative future[318]
ⲣⲉ	habitual, negative habitual[319]
ḥnꜥ	conjunctive[320]
ḥr	present, negative present[321]

Table 61 – Loss of elements observed in the developments of Egyptian verbal constructions.

Of the ten elements lost from various constructions, six show the loss of an entire, or part of an, auxiliary. In the cases of the loss of *r*, *ḥnꜥ* and *ḥr*, the auxiliary lost was in the same form as when it was added to each respective construction, and thus this loss resulted from each construction undergoing morphosyntactic simplification, rather than extreme erosion. This can be supported by later forms of each construction, since in the affirmative and negative present constructions, the expression of present tense became unmarked after the loss of *ḥr*, in the affirmative and negative future constructions the expression of future tense was conveyed by the element *iw* following the

[312] Lost from initial main clause forms, likely due to the change in function of *iw* from a marker of initiality to a marker of circumstantiality. Also lost from the Demotic expression of 3rd person singular subjects in the present construction. See pg.40-41, 95 & 102.
[313] See pg.214.
[314] See pg.214.
[315] The association of the future construction with *m* can be seen in the optional use of *in* in Demotic, before it was lost (Grossman et al. 2014a:119). See pg.153.
[316] See pg.39 & 129.
[317] This loss was not completed, and *n* remained optional throughout Coptic. However, it may be hypothesised that this would have been completed had the development of the Egyptian language continued, due to the development of the negation (ⲛ)⋯ⲁⲛ having followed the Jespersen cycle thus far. See pg.114-115 & 174.
[318] The loss of *r* from the affirmative future *iw=f r sḏm* was only completed in forms with nominal subjects. See pg.150-153, 157 & 169-170.
[319] Only in forms with pronominal subjects, and not in all dialects. See pg.125-126 & 133.
[320] See pg.246-247.
[321] See pg.98-99 & 112.

loss of *r*, and in the conjunctive construction the grammatical information expressed by *ḥnꜥ* was subsequently expressed by *mtw*, derived from the independent pronoun. Furthermore, the loss of these three elements from their various constructions show that any auxiliary which derived from a prepositional lexical origin was lost later in the development of the construction it was used in, with the sole exception being the uncompleted loss and subsequent reappearance of *r* in the writing of the future construction with pronominal subjects.

The loss of *ir* from the terminative construction may also be classed as due to morphosyntactic simplification, since it appeared in its full phonological form, showing no erosion, and the grammatical information expressed by *ir* was subsequently expressed by another element of the construction, *šꜣꜥ*. The grammatical information of the element *i* was also taken on by *šꜣꜥ*, however *i* had also already undergone erosion prior to its loss from the construction, having been reduced from *r* to *i*. Thus the loss of this element may have been due to either phonological erosion or morphosyntactic simplification or, more likely, a combination of both.

The loss of *m* and *r* from the future *tw=i m nꜥy r sḏm* show the loss of part of the auxiliary group *m nꜥy r*, with the grammatical information of these two elements being adopted by the retained auxiliary element *nꜥy*. As these elements were in their full phonological form, their loss may be classed as a result of morphosyntactic simplification, although the loss of *m* may also have been due to assimilation with the nasal consonant *n* which provided the first consonant of *nꜥy*[322]. Furthermore, the presence of *m* and *r* in *tw=i m nꜥy r sḏm* was due to the requirements of the present construction on which the form was based, in which verbs of motion such as *nꜥy* were required to be preceded by *m*, and the fact that the complement of *nꜥy* appeared in the purpose clause construction *r* + infinitive. However, the ongoing grammaticalisation of *nꜥy* reduced the need for *m* and *r*, and thus their appearance in the construction became non-obligatory, leading to their eventual loss.

The final example of the loss of an auxiliary is that of ⲣⲉ, which remained visible in the forms of the affirmative and negative habitual constructions used with nominal subjects, respectively ⲯⲁⲣⲉN ⲥⲱⲧⲙ and ⲙⲉⲣⲉN ⲥⲱⲧⲙ, but was lost from the forms used with pronominal subjects, ⲯⲁⲭⲥⲱⲧⲙ and ⲙⲉⲭⲥⲱⲧⲙ. ⲣⲉ had undergone a slight erosion from the earlier *ir*, however the retention of ⲣⲉ in forms of the habitual and negative habitual with nominal subjects and in forms with pronominal subjects in some dialects, as well as in other constructions in which it was used, suggests that its loss

[322] See pg.153.

in forms of the habitual and negative habitual with pronominal subjects was not due to phonological erosion.

The loss of *iw* from initial main clause forms of the past and present constructions, and *.n* from the past and negative habitual construction are likely to have been due to morphosyntactic simplification, since neither of these elements exhibit erosion prior to their loss. The loss of *iw* likely reflects its increasing inability to express initiality, while following the loss of *.n* from the past and negative habitual the grammatical information it expressed was taken on by the inflected content verb.

The partial loss of the negative marker 𓈖, which went from obligatory to optional in the negative present and negative future constructions, may also be attributed to morphosyntactic simplification, showing the latter stages of the Jespersen cycle, in which the added element[323], in this case 𓄿𓈖, begins to be considered the negative proper, with the original negative element being gradually lost (Jespersen 1917:4), as was occurring to 𓈖 in this case. It may be assumed, based on the Jespersen cycle, that had the development of the Egyptian language continued, 𓈖 would have been fully lost from the negative present and negative future constructions. This shows a similarity to the K'iche' negation outlined in 1.b., in which the older negative marker *man(a)* is currently undergoing the process of loss, but this is currently incomplete, and *man(a)* remains an optional inclusion, although it is no longer an obligatory part of the construction. In contrast to *man(a)*, the post verbal negative marker *ta(x)* has become obligatory, and has become the 'negative proper', with the use of *ta(x)* alone being considered grammatical by language users (Romero 2012:86). The ongoing loss of *man(a)* is causing an increase in syntheticity in contexts where loss occurs due to a decrease in the quantity of elements, similar to the loss of 𓈖 in the Egyptian negative present and negative future constructions.

It is possible that the results of the process of loss, as well as the process of erosion, may have been a cause of the subsequent analyticisation of several Egyptian verbal constructions. In the past, perfect, negative habitual and negative future constructions, which each show more than one occurrence of either syntheticisation, analyticisation, or both in their developments, either loss or erosion is visible before the final analyticisation of the construction, showing both phonological and semantic weakening of the most common linguistic form before it was replaced by a more analytic form. This is evident from the loss of *iw* and *.n* from the past construction, the erosion of *wꜣḥ* to 𓂝𓄿 in the perfect, the loss of *.n* from the negative habitual, and the slight erosion of *iw* to 𓐍 and loss of *r* in the negative future construction. These may have caused the need for a more expressive or

[323] See 3.b.ii for further discussion of the addition of a negative element in the Jespersen cycle.

strengthened linguistic form, with the existing form of the construction having become too economic, and either not expressive or not clear enough in the eyes of language users, causing the subsequent analyticisation of the construction. It is possible that such weakening may have occurred in all Egyptian verbal constructions, creating the need for a new, more analytic form. However this would have occurred prior to the beginning of the attested written record, as within every construction in which analyticisation occurs before syntheticisation the second earliest attested linguistic form[324] is more analytic than the first, and no weakening of the earliest attested form is visible from written evidence. However, possible lack of clarity may be assumed from the similarities between the oldest forms of several constructions[325], such as the *sḏm=f* forms of the past, present, and future, and the *n sḏm=f* forms of the negative past, negative present, and negative future, the majority of which were among the earliest constructions to have attested auxiliarified forms.

[324] This excludes any orthographic changes.
[325] See pg.19-20.

4.c. Coalescence

The process of coalescence, in which two independent words become one over time (Croft 2003:255), occurred at least once in the development of every Egyptian verbal construction. Coalescence may be viewed as a continuum from independent word to fusion (Croft 2003:256), within which several processes may be identified: compounding, cliticisation, affixation, and fusion (Croft 2003:255).

The final process in the coalescence continuum, fusion, involves boundary loss of the boundary between two morphemes, resulting in the two morphemes becoming one phonological unit (Heine & Reh 1984:25). Within Egyptian verbal constructions, fusion is only evident in the development of the pronominal compound used in the present, negative present, future, and negative future constructions[326]. While fusion may not be expected in the morpheme boundaries of the variable elements of the subject and content verb, due to the variability itself marking each of these as distinct elements[327], fusion between two fixed elements may be viewed as more likely to occur. However, fusion is not evident in the fixed elements of any Egyptian verbal construction, with the morpheme boundaries remaining visible each linguistic form. For example, even in the negative causative imperative construction, which in its form which shows evidence of coalescence, **ⲙⲡⲣⲧⲣⲉⲫⲥⲱⲧⲙ**, contained the greatest quantity of fixed elements of any Egyptian verbal construction, the boundaries between morphemes remained visible. It is also frequently possible to match morpheme boundaries in forms which have undergone coalescence with morpheme boundaries in preceding linguistic forms, with the exceptions of where elements have been lost. For example, the morpheme boundaries within the negative causative imperative form **ⲙⲡⲣⲧⲣⲉⲫⲥⲱⲧⲙ** may be matched to the morpheme boundaries in the preceding form *m ỉr dỉ ỉr=f sḏm*:

ⲙⲡ	ⲣ	ⲧ	ⲣⲉ	ⲫ	ⲥⲱⲧⲙ
m	*ỉr*	*dỉ*	*ỉr*	*=f*	*sḏm*

The absence of fusion and the non-completion of the coalescence continuum is not unique cross-linguistically within the context of the linguistic cycle, since there is evidence of words and constructions increasing in syntheticity without fusing phonologically (Schwegler 1990:146).

The remaining three processes, compounding, cliticisation, and affixation, each involve boundary reduction of a word boundary to a word internal morpheme boundary (Croft 2003:255).

[326] See pg.102.
[327] See Ex.67-70 (pg.52).

Compounding involves the combining of, and boundary reduction between, two or more linguistic units of the same morphosyntactic status (Heine & Reh 1984:32), involving either two or more root morphemes (i.e. content words) *or* two or more non-root morphemes (i.e. function words). Examples of compounding may be seen in Egyptian in the compounding of the non-root morphemes *bw* and *pw* in the negative present construction[328], or crosslinguistically in the compounding of the non-root morphemes θά and νά in the Greek future construction[329].

Cliticisation and affixation involve the combining of, and boundary reduction between, two or more linguistic units of differing morphosyntactic status (Heine & Reh 1984:32), with one or more root morphemes *and* one or more non-root morphemes. The difference between cliticisation and affixation from a diachronic perspective is artificial (Croft 2003:255, with reference to Heine & Reh 1984:32-35). Thus in this thesis only the term 'affixation' is used for the coalescence process which involves linguistic units of differing morphosyntactic status. In Egyptian verbal constructions, affixation most frequently occurred between the already inseparable[330] auxiliary-subject group (non-root) and the content verb (root) in forms with pronominal subjects, and between the auxiliary (non-root) and noun phrase subject (root) in forms with nominal subjects. This is visible from the placement of elements which are external to the construction. For example, the Ex.490 the external element *wn* is situated between the negative marker and auxiliary group *bwpw* and the nominal subject *ḥtr*. But in the later example in Ex.491 the external ⲇⲉ does not separate the negative marker and auxiliary group ⲙⲡⲉ and the nominal subject ⲡϫⲟⲉⲓⲥ, comprised of the definite article ⲡ and noun ϫⲟⲉⲓⲥ, but instead appears after all of these elements, suggesting that they are no longer separable.

(490) *bwpy* *wn* *ḥtr* *iy* *n=n*
NEG.PST AUX team_of_horses come.INF DAT=1PL
....no team of horses came to us....
P. Strassburg 33, 7
21st dynasty

(491) ⲥⲁⲟⲩⲗ ⲛⲉ-ⲩ-ⲕⲱⲧⲉ ⲛⲥⲱ-ⲩ ⲉⲛ-ⲉⲟⲟⲩ ⲛⲓⲙ
Saul IMPF-3MSG-seek.INF OBJ-3MSG during-day every
ⲙⲡⲉ-ⲡ-ϫⲟⲉⲓⲥ ⲇⲉ ⲧⲁⲗ-ⲩ ⲉϩⲣⲁⲓ ⲉ-ⲧⲟⲟⲧ-ⲩ
AUX.NEG.PST-the-lord PART place.INF-3MSG down into-hand-3MSG
Saul was seeking him every day, but the lord did not place him into his hand.
1 Sam., 23.14
892-893CE

[328] See Ex.114 (pg.75).
[329] See pg.16.
[330] Due to the historic use of suffix pronouns to express pronominal subjects in each construction prior to the affixation of the auxiliary-subject group and content verb.

In each of these examples the negative marker and auxiliary group, *bwpw*/ⲙⲡⲉ, is comprised of two non-root morphemes, while the subject contains a root morpheme, *ḥtr* in Ex.490 and ϫⲟⲉⲓⲥ in Ex.491. That these elements may be separated in the earlier example and not in the later example shows that they have undergone affixation within this time.

The term 'cliticisation' is used elsewhere in this thesis for one of the linguistic shift chains involved in the grammaticalisation of lexemes to auxiliaries, following the terminology of Heine's verb-to-TAM chain[331] (Heine 1993:53-66). This chain involves the development from independent word to clitic to affix. Most Egyptian verbal constructions only provide written evidence of stages 1 and 3 of this chain, independent word and affix. One example which does show all 3 stages is provided by the auxiliary *pꜣ*/*pw*/ⲡⲉ in the negative past construction. In its earliest attestation, in the form *n pꜣ=f sḏm*, *pꜣ* is an independent word, having been sourced from a verbal lexeme.

(492) *n* *pꜣ* *sp=s* *ỉwt*
NEG AUX.PST time=3FSG come.INF
Its time had not come.
Siut, 4.15 (Gardiner 1908:74)
9th-10th dynasties

By the subsequent form of the construction, *bwpw=f sḏm*, this auxiliary, now written *pw*, has become a clitic which was attached to the negative marker *bw*.

(493) *bwpwy*[*=i*] *ptr*[*=f*] *r-šꜣʿ* *pꜣ* *hrw*
AUX.NEG.PST=1SG see.INF=3MSG until the day
I have not seen him until today.
LEM, 75.12 (Groll 1970:12)
19th dynasty, Seti II

In the final attested form of the negative past, the auxiliary ⲡⲉ is an affix and unable to carry stress, as occurs in stage 3 of the cliticisation chain (Heine 1993:56). ⲡⲉ is affixed to the following element of the construction, the subject.

(494) ⲙⲡⲉ-ϥ-ϩⲟⲓⲛⲱⲛⲉⲓ ⲇⲉ ⲙⲛ-ⲙ-ⲙⲉⲗⲓⲧⲓⲁⲛⲟⲥ
AUX.NEG.PST-3MSG-communicate.INF PART with-the-Melitians
But he did not communicate with the Melitians....
Antony, 68
822-823CE

This cliticisation chain is distinct from the process of coalescence, although the development from independent word to affix generally involves one or more of compounding, affixation, or fusion.

[331] See pg.57-58.

Within the coalescence of Egyptian verbal constructions, save for the fusion involved in the development of pronominal compounds, each case involved either compounding or affixation.

The effects of coalescence are visible from the writing of the linguistic form(s) of each construction used in Coptic, although it is probable that coalescence occurred earlier in the spoken language. Only two constructions, the negative past and terminative, exhibit evidence of coalescence earlier with the process of compounding[332], in the linguistic forms used in Late Egyptian, although each of these constructions also shows the results of a separate instance of coalescence in Coptic. The apparent occurrence of coalescence at a late stage within the developments of Egyptian verbal constructions is concurrent with crosslinguistic evidence that coalescence occurs afters, and due to, phonological and semantic reduction (Bybee et al. 1994:6). In each Egyptian verbal construction, coalescence is not attested until after an auxiliary was in use, and had begun the process of desemanticisation, with this desemanticisation being one cause for the process of coalescence occurring.

That the desemanticisation of the auxiliary added to each construction aided in triggering the coalescence of the construction indicates that in this coalescence the auxiliary acted as the nucleus, the element which conveyed information of central importance (Myhill 1988:261). This is also supported by the differences in the elements which were involved in coalescence in forms with pronominal subject and those with nominal subjects. In all constructions, the forms used with pronominal subjects showed the coalescence and consequent inseparability of the auxiliary, subject, content verb, and any markers[333], with the exception of the negative marker ⲁⲛ in the negative present and negative future[334], and where ⲧⲙ or ⲯ was used in the conjunctive[335]. In forms with nominal subjects however, the content verb remained separable from the remainder of the construction, showing that this could not be the element which coalescence was focussed around. Furthermore, the separability of nominal subjects from the auxiliary ⲛⲁ and content verb in the future construction[336] shows that the subject may not have been the nucleus of coalescence either.

[332] See pg.75 & 216.
[333] Showing that markers were more strongly affected by syntheticisation than analyticisation, with all being unaffected by the auxiliarification of the content verb, the main process involved in analyticisation, and only three markers being expanded. See 3.a.iii.2. and 3.b.iii.
[334] See Ex.220 (pg.115) and Ex.338 (pg.173).
[335] See pg.251-252.
[336] See pg.172 and Ex.339 (pg.173).

4.d. Syntheticity as a Feature of Coptic

Pulgram observed that typically 'a language does not have synthetic and analytic periods' (Pulgram 1963:40), and the written evidence of Egyptian verbal constructions from Old Egyptian to Demotic adheres to this. Between Old Egyptian and Demotic, analyticisation and syntheticisation stages began and ended at different times in different constructions[337], and at many given points in time several constructions show increases in analyticity while others contemporaneously exhibit increases in syntheticity. However, at the beginning of the Coptic language stage, every verbal construction exhibits an increase in syntheticity.

This increase in syntheticity was due to all constructions exhibiting the results of coalescence, and all but the negative past and terminative constructions[338] exhibiting the results of erosion. In all but three constructions[339] this is the first evidence of either coalescence or erosion having occurred at all. The apparent concurrent timing of coalescence and erosion across almost all verbal constructions is unsurprising, given that phonological reduction regularly accompanies coalescence within grammaticalisation (Hopper & Traugott 2003:154).

Further similarity may be seen in the evident nature of the coalescence across each construction as described throughout chapter 2. In the majority of cases, forms with pronominal subjects show the affixation of the already inseparable auxiliary and subject with the content verb, while forms with nominal subjects show the affixation of the previously independent auxiliary and subject, with the content verb remaining separable. Any semantic markers which were positioned at the beginning of the construction show coalescence with the auxiliary and subject.

It is likely that the effects of coalescence and erosion became visible in Coptic due to the change in writing system to a script which was less conservative than the hieroglyphic, hieratic and demotic writing systems used between Old Egyptian and Demotic, and which used both consonants and vowels, rather than overwhelmingly foregrounding consonants like earlier scripts. Thus while written evidence from Coptic reveals increases in syntheticity in all verbal constructions, it is likely that coalescence and erosion had occurred somewhat earlier in the spoken language but that such innovations were not reflected in the conservative writing system. However, the written evidence from Coptic does indicate that all constructions had undergone syntheticisation by this stage. Furthermore, the majority of constructions, with the exceptions of the perfect and negative future

[337] See table 62 (pg.303).
[338] Each of these shows the results of erosion at an earlier stage, and their Coptic written forms likely indicate orthographic change only, with no phonological change.
[339] Negative past, future, terminative. See pg.75, 154-155, 212 & 216-217.

constructions, show no evidence of analyticisation within Coptic, and thus each appear to remain in a synthetic stage within their developments throughout the Coptic language stage.

Consequently, written evidence from Coptic indicates the harmonisation of verbal constructions into a synthetic stage. This is also indicated through the simplification of the verbal system into bipartite and tripartite constructions, and the reduction in the quantity of linguistic forms used in each construction through the lack of use of any pre-auxiliarification forms, which had by Coptic each been replaced as the most common form of a construction by an auxiliarified form. Furthermore, the similarities in the coalescence of each construction indicates the standardisation of the Egyptian verbal system.

The causes for the harmonisation of Egyptian verbal constructions into a synthetic stage in Coptic will not be explored in detail in this thesis. However, it may be hypothesised that one possible cause was the influence of the Greek language, with which Egyptian had significant language contact from the late 4th century BCE. Greek was used for written communication by Egyptian speakers following the decline of the demotic writing system (Fournet 2020:3-5), thus exposing Egyptians to a greater amount of Greek writing (Quack 2017:77). While many previous studies of language contact between Egyptian and Greek have found that Greek did not typically influence the grammatical features of Coptic, and that 'the overwhelming majority of morphosyntactic structures, especially the structure of the verbal and nominal phrase, are 'native' Egyptian' (Zakrzewska 2017:134), it is possible that the structural features of Greek influenced the way in which the native Egyptian language developed.

Before and during the time at which Egyptian exhibits widespread increases in syntheticity, the Greek language was highly synthetic and its verbal constructions appeared in agglutinating forms, in which 'words typically contain a linear sequence of morphs' (Crystal 1997:13). Since activating latent universal tendencies in the recipient language is a well-attested part of grammatical borrowing (Zakrzewska 2017:124), it is possible that the highly synthetic nature of the contemporary Greek language activated a new stage, or the continuation, of syntheticisation within Egyptian verbal constructions, following the existing progress of the linguistic cycle at varying earlier stages of the Egyptian language. It is probable that Egyptian verbal constructions would have continued to follow the linguistic cycle pattern without the influence of Greek, following evidence from earlier in Egyptian, and from the linguistic cycle pattern in other languages[340]. However, it is possible that the influence of language contact with Greek ensured that Egyptian verbal constructions all progressed

[340] See 1.b.

in a *synthetic* direction, rather than constructions which had already been undergoing syntheticisation for some time beginning a stage of analyticisation[341].

The Old Egyptian stage of the Egyptian language has also previously been categorised as a synthetic stage (Hodge 1970:4-5), and it is true that early Old Egyptian linguistic forms of constructions were typically more synthetic than their successors. However, since Old Egyptian is the earliest attested stage of the Egyptian language, it is unclear whether the predecessors of early Old Egyptian forms were more synthetic or more analytic, and thus whether Old Egyptian forms show syntheticisation or analyticisation from their predecessors. While bare *sḏm=f* forms such as those used to express the past, present and future are unlikely to have previously been more synthetic, since they contain the minimum number of elements needed to express the content verb, subject and grammatical information, it is possible that constructions which utilised semantic markers or verb endings may not have contained these elements in a previous form. It is also possible that there may have previously been fewer linguistic forms or constructions altogether, with the same linguistic form being used to express several constructions, similar to the past *sḏm=f* expressing both the past and perfect, or with constructions not yet having a distinct expression, such as the conjunctive, which is not attested until Middle Egyptian. Furthermore, it is unknown how long each linguistic form attested in early Old Egyptian had been in use for. Thus even if Old Egyptian is considered to be a synthetic stage, in cannot be determined whether this came about through widespread harmonised increases in syntheticity, as is evident from Coptic.

[341] The perfect and negative future constructions did begin analyticisation some time within the Coptic language stage, but exhibit the results of syntheticisation within earlier Coptic.

4.e. Word Order

While a change in word order from VS to SV was a prevalent feature of the analyticisation of Egyptian verbal constructions[342], occurring within one analyticisation stage of every construction, no change in word order occurred within the syntheticisation of any construction. Instead, each verbal construction maintained the SV word order which it had acquired through its earlier auxiliarification (or shortly after in the case of the conjunctive) or maintained VS word order during any syntheticisation stage which occurred prior to the change from VS to SV caused by auxiliarification[343]. This is due to the processes involved in syntheticisation, namely erosion, loss, and coalescence, not being able to alter the position of any elements.

Crosslinguistically, word order changes which cause or result from grammaticalisation are typically not unidirectional (Hopper & Traugott 2003:60). This may be seen in the word order change in the development of the Greek future constructions from VS to SV to VS[344]. However, within the developments of Egyptian verbal constructions, word order change appears to have been unidirectional from VS to SV[345], despite the continued grammaticalisation of auxiliarified constructions after the process of auxiliarification had caused this word order change.

[342] See 3.a.iv.
[343] This occurred in the past and negative habitual constructions.
[344] See pg.16-17 & 275.
[345] See 3.a.iv.1.

5. The Linguistic Cycle

The current chapter will comparatively examine the linguistic cycle as a whole in the developments of all verbal constructions discussed in chapter 2. It will compare the time scales of the linguistic cycle across different constructions, and paradigmatic variations in analyticity and syntheticity. It will also investigate how cyclical this pattern truly is.

5.a. Time Scales

5.a.i. Layering

The process of layering is visible in the development of every Egyptian verbal construction, with the use of older linguistic forms of each construction being attested for various lengths of time after the first attestation of a new linguistic form[346]. This is not surprising, since new forms generally do not replace a meaning that has been lost, but compete with older forms as the newer form is felt to be more expressive than the older one (Hopper & Traugott 2003:124), and the two forms coexist for some time (Hopper 1991:23). Furthermore, while the innovation of a new linguistic form is abrupt for the individual speaker, the spread of the new linguistic form to other language users, which must occur for the innovation to be considered language change, is inevitably gradual (Hopper & Traugott 2003:46 & 232). This gradualness of language change is a cause of layering, since while the new form taken time to spread, the old form remains in use for the contexts and language users to which the new form has not yet spread. Moreover, once an older form has been replaced as the primary form of a construction by a newer form, language users do not cease using it overnight, but its dying out is also gradual. Thus some layering is to be expected in Egyptian verbal constructions, due to general factors such as the overlap between generations of language users, and language specific factors such as the conservative nature of certain genres of Egyptian texts, for instance religious material.

In the majority of Egyptian verbal constructions, the overlap in usage between two consecutive linguistic forms shown by the written evidence occurred within the same language stage, as illustrated in table 1[347]. However, six constructions show longer overlaps in the use of consecutive forms in the construction. These constructions are the past, negative past, present, negative present, future, and negative future, each expressing the most basic and commonly used tenses. In the past, negative past, present and future constructions a new linguistic form, which was more

[346] In several constructions, the layering of different orthographic forms may also be observed.
[347] See pg.31-32.

analytic than the earliest attested form of the construction, is first attested in the 5th dynasty. This occurred around the 12th dynasty in the negative present construction, and in the 18th dynasty in the negative future construction. In the past, present and negative present constructions this new, more analytic form was used alongside the existing, more synthetic linguistic form until early Late Egyptian. In the negative past construction this layering lasted until the end of the 20th dynasty, in the future it continued until Coptic, and in the negative future it lasted until early Demotic. This clearly shows that there was no fixed timing for when layering might occur, or how long it might last, although it seems to have continued for longer in constructions which were most common and expressed the most basic tenses.

In the majority of these six constructions, layering was due to the initial auxiliarified form not replacing the existing linguistic form as the most common form of the construction for a significant time, with this replacement generally occurring around the end of Middle Egyptian or beginning of Late Egyptian. Consequently, the newer form was used as a secondary expression of the construction for approximately 1000 years. This shows significantly longer layering than in all constructions other than the six listed above, in which replacement of the more synthetic older form by a newer auxiliarified form occurred within the same language stage as the earliest attestation of the newer form. This longer layering also occurred with the second iteration of the linguistic cycle pattern in the past construction, with the auxiliarified form *ir=f sḏm* being used as a secondary form alongside the older *sḏm=f* from the 19th dynasty until the Roman period, a time of at least 1200 years.

However, in the first auxiliarification of the past construction, the replacement of the earliest form, *sḏm=f*, by (*iw*) *sḏm.n=f* occurred by the end of the 6th dynasty, no more than 300 years after the earliest attestation of this newer form. Despite this, the past *sḏm=f* continued to be used throughout Old and Middle Egyptian, and thus the layering of these two forms lasted over 1100 years. If the Late Egyptian past *sḏm=f* is considered to be a resurgence of the Old Egyptian past *sḏm=f*, then this layering continued until at least the reign of Ramesses II in the 19th dynasty, when (*iw*) *sḏm.n=f* is last attested in this corpus, over 1250 years.

The significant endurance of the older form of a construction also occurred in the future construction, with the continued used of *sḏm=f* as a secondary form alongside the main form *iw=f r sḏm* throughout Late Egyptian and Demotic, and the negative future construction, with the continued use of *bn sḏm=f* alongside the more common *bn iw=f r sḏm* throughout Late Egyptian.

It is probable that the retention of older forms alongside newer forms for a significant period of time within these constructions is reflective of the variety of semantics expressed by the construction. The synchronous use of two or three forms in each of the six most basic constructions would not have seemed superfluous, as each form was able to express a different semantic characteristic. For example, within the Late Egyptian stage, the three forms of the future in use each expressed a different and often contrasting semantics, with *ỉw=f r sḏm* used to express an objective future or a deontic nuance (Neveu 2015:76), the future *sḏm=f* expressing a subjective, modal future (Neveu 2015:80), and *tw=ỉ m nʿy r sḏm* expressing the immediate future (Neveu 2015:63). In contrast, those constructions in which the layering of multiple forms did not last long typically expressed more specialised meanings, ensuring that there were not multiple semantics available for different forms to express, and thus the use of more than one linguistic form at a time rendered one form redundant.

5.a.ii. Does Analyticisation or Syntheticisation Take Longer?

In order to quantify the length of time taken for both analyticisation and syntheticisation in Egyptian verbal constructions, the following limitations are used. Analyticisation is taken as the time from the emergence of a form which is more analytic than the existing form of the construction, until the most common form of the construction next shows an increase in syntheticity. Syntheticisation begins with the first attestation of a form which is more synthetic than the existing form of the construction, and ends when the most common form of the construction next shows an increase in analyticity or, as occurred more frequently in Egyptian, language development ceased at the end of the Coptic stage[348]. For example, in the present construction analyticisation is from the first attestation of *iw=f ḥr sḏm* until *sw sḏm* becomes more commonly attested than *sw ḥr sḏm* in the 20th dynasty, while syntheticisation is from the first attestation of *sw sḏm* in the 19th dynasty through to the end of the development of the Egyptian language. This methodology naturally presupposes some overlap between the end of analyticisation and beginning of syntheticisation, or vice versa. As it is not possible to quantify the exact date at which new forms emerged or when they began to be used as the main form of the construction, all dates and time spans are approximate.

[348] For the sake of quantification, this is taken as 1000CE here, with there being limited language development after this.

Construction	Analyticisation				Syntheticisation			
Past	1150	5th dynasty – late Middle Egyptian	1500	19th dynasty – late Demotic	1500	early Late Egyptian – Roman period	700	Coptic
Perfect	450	mid-late Demotic	350	mid-late Coptic	700		Coptic	
Negative Past	1300		5th dynasty – 20th dynasty		2550		18th dynasty – Coptic	
Present	1300		5th dynasty – 20th dynasty		2300		19th dynasty – Coptic	
Negative Present	800		12th dynasty – 20th dynasty		2300		19th dynasty – Coptic	
Habitual	900		Demotic		700		Coptic	
Negative Habitual	2300		19th dynasty – Coptic		150	early Late Egyptian – Ramesses II	700	Coptic
Future	1800		5th dynasty – early Demotic		2500		18th dynasty – Coptic	
Negative Future	200	18th dynasty[349] – early Late Egyptian	700	Coptic	1600		early Late Egyptian – late Demotic	
Causative Imperative	900		Demotic		700		Coptic	
Negative Causative Imperative	1400		late 20th dynasty – late Demotic		700		Coptic	
Causative Infinitive	900		Demotic		700		Coptic	
Finalis	900		Demotic		700		Coptic	
Terminative	700		late Middle Egyptian – 26th dynasty		1600		26th dynasty - Coptic	
Not Yet	1600		Seti I – late Demotic		700		Coptic	
Temporal	1650		early Late Egyptian – late Demotic		700		Coptic	
Conjunctive	700		12th dynasty – early Late Egyptian		2400		late Middle Egyptian – Coptic	

Table 62 – Approximate length in years, and in relation to language stages, of the analyticisation and syntheticisation stages of each Egyptian verbal construction.

[349] One solitary early example exists from the 10th dynasty.

In four constructions, the habitual, causative imperative, causative infinitive, and finalis, the process of analyticisation began in Demotic, with the development of a new auxiliarified form, and ended when syntheticisation began in early Coptic. The widespread use of Greek as the written language in between the decline in use of Demotic and development of the Coptic writing system ensured a lack of written expression of overlap between analyticisation and syntheticisation. Consequently, the analyticisation process for these constructions spanned the Demotic language stage, while the syntheticisation of each spanned the Coptic stage, ensuring that for these constructions, the processes of analyticisation and syntheticisation lasted a similar length of time.

For a further five constructions, the past (in its second syntheticisation), negative habitual, negative causative imperative, not yet, and temporal constructions, syntheticisation also occurred across the Coptic language stage. However, for these constructions, analyticisation began some time prior to the start of the Demotic stage, and thus analyticisation lasted significantly longer than syntheticisation.

However, within the past construction, which experienced both analyticisation and syntheticisation twice, the longest analyticisation and syntheticisation stages took around the same length of time, each lasting approximately 1500 years. On the other hand, if the first analyticisation and first syntheticisation are considered together as the first iteration of the linguistic cycle pattern, and the same for the second iteration of the linguistic cycle pattern, in the first iteration syntheticisation was longest, lasting around 350 years longer than the analyticisation, whilst in the second iteration it was analyticisation which took longer, lasting approximately 800 years longer than syntheticisation.

In seven constructions, the negative past, present, negative present, future, negative future, terminative and conjunctive, syntheticisation continued for significantly longer than analyticisation. Each case of analyticisation in the perfect construction also lasted for less time than its syntheticisation, but this discrepancy was less significant than in other constructions.

Of the constructions with substantial discrepancies between the time taken for analyticisation and syntheticisation, the two most extreme discrepancies are evident in the conjunctive and negative habitual constructions. In the conjunctive construction,

analyticisation lasted for around 700 years, while syntheticisation continued for approximately 2400 years, with a discrepancy of 1700 years between these. A greater discrepancy is evident in the negative habitual construction, in which analyticisation took approximately 2300 years, while the first syntheticisation lasted around 150 years, with a discrepancy between these of 2150 years. This shows that, although analyticisation and syntheticisation could take a similar amount of time, as in the first four constructions discussed in this section, they could also vary significantly in the length of time they each lasted. This is also seen in the other eleven constructions, in which the discrepancies between the time taken analyticisation and syntheticisation lay at various stages between 250 and 1500 years. Furthermore, since in the conjunctive construction it was syntheticisation which lasted for over 2000 years, while analyticisation lasted 700 years, whereas in the negative habitual construction the reverse is evident, with it being analyticisation which lasted over 2000 years and syntheticisation only continuing for 150 years, it was clearly possible for both analyticisation and syntheticisation to continue for significantly longer than the other. This trend, or lack thereof, is supported by other constructions, showing that neither analyticisation nor syntheticisation was characteristically a longer process than the other, but that this depended on the development of the individual construction.

5.b. Paradigmatic Variation

Synchronic paradigmatic variation in the level of syntheticity is evident in each Egyptian verbal construction. This is most widespread in the variation in the level of syntheticity between the forms of each construction used with pronominal subjects, and those used with nominal subjects. In every construction, and at all stages of the language, the forms used with nominal subjects were more analytic than those used with pronominal subjects, predominantly due to the greater autonomy of nouns in comparison to pronouns, and the consequent separability of nominal subjects from various other elements within verbal constructions, to which pronominal subjects were frequently affixed.

Throughout the use of the Egyptian language, pronominal subjects were expressed using affixes in every form of every verbal construction save for three: *ḥnʿ sḏm ntf* and *ḥnʿ ntf sḏm* of the conjunctive construction, and *nn sw ḥr sḏm* of the negative present. The use of affixes consequently ensured that pronominal subjects were inseparable from one or more other elements within the construction. Nominal subjects, in contrast, were expressed using independent words, and thus could be separated from other elements of the construction where pronominal subjects could not. This separability predominantly materialised between the nominal subject and content verb, with external elements able to be inserted between these elements. In contrast these were inseparable when the subject was pronominal. There were some exceptions to this, such as the future ϥⲛⲁⲥⲱⲧⲙ and corresponding negation ϥⲛⲁⲥⲱⲧⲙ ⲁⲛ, in which the subject and content verb were not directly next to each other, and in which the point of separation was instead between the nominal subject and the auxiliary ⲛⲁ[350]. The greater separability[351] of nominal subjects than pronominal subjects from other elements of the construction ensured that the subject element was more autonomous when it was nominal, and thus the forms of constructions with nominal subjects were consistently more analytic than those with pronominal subjects.

[350] See Ex.304 (pg.160) and Ex.339 (pg.173).

[351] There may also have been distinctions in terms of stress. Within Coptic, the pronouns used as the subjects of verbal constructions were unstressed (Reintges 2004:70), while nouns could carry stress (Reintges 2004:33-34). However, such a distinction is not visible from the written language before Coptic.

The only exceptions to the paradigmatic variation in syntheticity between the forms with pronominal subjects and those with nominal subjects occurred when constructions did not use affixes to express pronominal subjects, but instead used an alternative category of pronoun. This occurred within the developments of two Egyptian verbal constructions, in *nn sw ḥr sḏm* of the negative present construction, which utilised dependent pronouns to express pronominal subjects, and *ḥnꜥ sḏm ntf* and *ḥnꜥ ntf sḏm* of the conjunctive construction, which used independent pronouns. These pronouns were each more autonomous than affixes, since dependent pronouns were less attached to a preceding word than suffix pronouns (Gardiner 1957:45), with dependent pronouns being classifiable as clitics, while independent pronouns are almost always found at the beginning of a sentence (Gardiner 1957:53), without being dependent on a preceding word, thus being classifiable as independent words. Since independent pronouns were equally as autonomous as nouns, the subject in these linguistic forms was always equally autonomous. However, since nominal subjects in *ḥnꜥ sḏm ntf*[352] were expressed with a preceding *in*, 'by', forms with nominal subjects were more analytic than those with pronominal subjects, due to a greater quantity of elements. Dependent pronouns did not exhibit quite the same level of autonomy as nouns, since they were unable to appear unsupported as the first word of a sentence (Gardiner 1957:45). However, since in *nn sw ḥr sḏm* the negative marker *nn* was an obligatory fixed element before both pronominal and nominal subjects, any evident variations in syntheticity are negligible.

Within both the negative present and conjunctive constructions, any later forms used affixes to express pronominal subjects, which thus displayed paradigmatic variations in syntheticity due to differing levels of autonomy and separability, as discussed above.

As well as the variations in syntheticity caused by the differing autonomy of nominal and pronominal subjects, several constructions show further paradigmatic variations between the forms used with pronominal and nominal subjects within the Coptic language stage, due to a reduction in the fixed elements of the construction in forms used with pronominal subjects. These constructions include the habitual, in which the prefix ⲱⲁⲣⲉ was used before nominal subjects, while the reduced form ⲱⲁ was used before pronominal subjects;

[352] There are no examples of *ḥnꜥ ntf sḏm* with a nominal subject expressed using *in*, however Gardiner (1928:90) noted examples in which the nominal subject is preceded by *nty*.

the negative habitual, which used the forms ⲙⲉⲣⲉ and ⲙⲉ before nominal and pronominal subjects respectively; and the conjunctive, which used the prefix ⲛⲧⲉ before nominal subjects, and ⲛ before pronominal subjects[353]. The use of a longer prefix before nominal subjects, which in the case of the affirmative and negative habitual constructions may be regarded as two separate elements, caused the form of each construction used with nominal subjects to be more analytic than the equivalent form used with pronominal subjects, due to an increased quantity or length of elements. This occurred alongside the increase in analyticity from the greater autonomy of nominal subjects, ensuring that the variation in syntheticity between the forms used with nominal and pronominal subjects in these constructions was greater than that in other constructions.

One further construction which exhibits variations in syntheticity through the use of different fixed elements before nominal and pronominal subjects was the future construction, in the Coptic form typically referred to as the 3rd future. In forms used with nominal subjects, the prefix ⲉⲣⲉ was used, whilst in forms with pronominal subjects, the fixed elements appeared as ⲉ⋯ⲉ. This ensured that whilst the fixed element in the form with nominal subjects was greater in length, the form used with pronominal subjects contained a greater quantity of elements, making the variation in syntheticity between these forms lesser than the variations in the three constructions discussed in the paragraph above. Furthermore, for the majority, if not all, of Coptic ⲉⲩⲉⲥⲱⲧⲙ was not the most common form of the future construction, and the most common form, ⲩⲛⲁⲥⲱⲧⲙ, simply showed paradigmatic variation only through the greater autonomy of nominal subjects.

As well as displaying paradigmatic variation between forms with nominal and pronominal subjects, several linguistic forms of the present, negative present and future constructions also displayed paradigmatic variation between different pronominal subjects. This occurred through the use of the element *tw* before 1st and 2nd person pronouns within Late Egyptian and Demotic, in contrast with the lack of this element before 3rd person pronouns, as well as before nominal subjects. This was continued in Demotic with 3rd person plural pronouns and definite nouns, although 3rd person singular pronouns were expressed as *iw=f* and *iw=s* (Johnson 1976:32), while indefinite nouns were preceded by *wn* (Johnson 1976:37).

[353] Within each of these constructions, some variation is also seen between different dialects. See pg.122, 132 & 250-251.

Thus the forms of pronouns and indefinite nouns which were preceded by an additional element were more analytic than those which appeared alone. However, pronouns which were preceded by *tw* or *ỉw* were expressed using suffix pronouns, while those which appeared alone used dependent pronouns and were consequently slightly more autonomous.

5.c. To What Extent is the Linguistic Cycle Really a Cycle?

The linguistic cycle pattern has been referred to as a cycle in linguistic literature due to the repeating nature of the analytic and synthetic stages. However, the labelling of this as a cycle implies that the second occurrence of either a synthetic or analytic stage within the development of a construction is a return to the first stage. Evidence from Egyptian verbal constructions can be used to establish whether separate synthetic and analytic stages within the development of a construction are in fact true reflections of one another, and whether the linguistic cycle is a true cycle.

Since the development of each verbal construction in Egyptian involved analyticisation followed by syntheticisation, showing the stages synthetic > analytic > synthetic, each construction exhibits two synthetic stages[354] which may be compared. Four constructions show extended versions of the linguistic cycle pattern, with the developments of the perfect, negative habitual and negative future constructions each containing an additional analytic stage, and the development of the past construction exhibiting both an additional analytic stage and an additional synthetic stage. The diachronic developments of each of these three constructions thus allows the comparison of their two analytic stages, as well as their synthetic stages.

5.c.i. Synthetic Stages

5.c.i.1. (In)separability

One of the predominant features of synthetic forms is that the elements within them are typically inseparable, having a high level of morphological and phonological interdependency (Schwegler 1990:xv).

For example, within the future construction, the two elements of the content verb and subject which made up the linguistic form of the first synthetic stage, *sḏm=f*, were inseparable from one another when the subject was pronominal[355]. This was also the case for the most synthetic form in the second synthetic stage of the future construction,

[354] For the perfect and conjunctive constructions the first synthetic stage is taken as the source construction for auxiliarification, the past *sḏm=f* and *ḥnʿ sḏm* respectively.
[355] See Ex.282 (pg.146). In all constructions nominal subjects exhibit a higher level of separability than pronominal subjects, as discussed in 5.b.

ϥⲛⲁⲥⲱⲧⲙ, in which every element in a form with a pronominal subject was inseparable[356]. Thus in this particular respect, the two synthetic stages of this construction show identical levels of separability.

However, the level of separability of the two synthetic stages of a construction was not always identical. For example, in the first synthetic stage of negative verb forms, the negative marker tended to be separable from the rest of the construction. In the earliest synthetic form of the negative past construction, *n sḏm=f*, the negative marker *n* could be separated from the *sḏm=f* section[357]. However, in the second synthetic stage of the negative past construction the element providing negation could no longer be separated from the rest of the construction, and every element within ⲙⲡⲉϥⲥⲱⲧⲙ was inseparable when used with pronominal subjects[358]. Thus in this construction the two synthetic stages were not identical with respect to the level of separability between the elements involved, since the most synthetic form of the later synthetic stage was less separable, and consequently more synthetic in this respect, than that of the earlier synthetic stage.

Of the 17 verbal constructions analysed in this thesis, seven[359] show the same level of separability in the most synthetic forms of their two synthetic stages, while the remaining ten[360] exhibit differing levels of syntheticity.

5.c.i.2. Quantity and Type of Elements

Syntheticity can also be measured through the quantity of elements present within a construction, with a lower quantity elements present indicating a higher level of syntheticity, and a higher quantity of elements indicating a higher level of analyticity. Thus it is possible to compare the quantity of elements within the most synthetic forms of the two synthetic stages of a construction to establish whether these forms were equally synthetic in this respect, or whether one form contained a higher quantity of elements and was thus less synthetic.

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[356] See Ex.304 (pg.160).
[357] See Ex.91 (pg.67).
[358] See Ex.130 (pg.80).
[359] Past, perfect, present, negative present, future, negative future and conjunctive.
[360] Negative past, habitual, negative habitual, causative imperative, negative causative imperative, causative infinitive, finalis, terminative, not yet, temporal.

Of the 17 verbal constructions examined in this thesis, only two contain the same quantity of elements in the most synthetic forms of their two synthetic stages. The first of these, the present construction, contained only two elements in the most synthetic forms of each of its synthetic stages. In the earliest synthetic stage, the linguistic form *sḏm=f* can be separated into the elements of the content verb and subject, while the most synthetic form of the later stage, ϥⲥⲱⲧⲙ, can also be separated into the subject and content verb, showing that in both its synthetic stages the present construction contained the same two elements. However, in *sḏm=f* the content verb also expressed the grammatical information of the construction through inflection, while this was not the case in ϥⲥⲱⲧⲙ, in which the content verb was uninflected.

The second construction which contained the same number of elements in both of its synthetic forms was the terminative. In *r sḏm.t=f*, within its first synthetic stage, this construction contained four elements, the preposition *r*, the content verb, a verb ending *.t*, and the subject. The most synthetic form of this construction in its second synthetic stage also contained four elements, although these were not all identical to those in the earlier synthetic form, as had been the case in the present construction. The first element was no longer the preposition *r*, which had been lost from the construction, but was ⲯⲁ, a phonologically reduced form of the preposition *šꜣ ʿ* which had been added to the construction during Late Egyptian. The second element in ⲯⲁⲧⲉϥⲥⲱⲧⲙ and ⲯⲁⲛⲧⲉϥⲥⲱⲧⲙ was the descendant of the verb ending *.t*, although this no longer fit the category of a verb ending in later forms of the construction, since it was no longer suffixed to a verb. This was then followed by the subject, while the final element was the content verb. Consequently, this construction contained an identical quantity of elements within its two synthetic stages, but not all of these elements themselves were identical, with the two fixed elements having changed. Thus while there was an identical level of syntheticity between the two forms in this respect, the forms themselves were far from identical.

In each of the other 15 constructions analysed in this thesis, the forms of the two synthetic stages each contain a different quantity of elements, with a higher quantity in the second synthetic stage than in the first one. Moreover, for the majority of these (12 constructions) the most synthetic form of the later synthetic stage contained one more element than that of the earlier one. For example, the earliest synthetic form of the 'not yet' construction, *n*

sḏm.t=f, contained four elements, namely the negative marker *n*, the content verb, the verb ending *.t*, and the subject, while the later synthetic form had five elements, the negative marker, which was written ⲙⲡ, an auxiliary ⲁ, the descendant of the verb ending *.t*, the subject, and the content verb. In this construction the additional element developed from the auxiliarification in which *ir* (later ⲁ) was added to the construction as an auxiliary.

Three constructions contained two extra elements in their later synthetic stages in comparison to their earlier synthetic stages. In the temporal construction one of these came from the addition of the auxiliary *ir*, while the other was gained through the expansion of the marker *ḏr* to *m ḏr*, though the addition of the preposition *m*. Similarly, the negative causative construction gained two elements through the addition of *ir* as an auxiliary, once in the auxiliarification of its marker, and once in the auxiliarification of the content verb. In the negative future the additional elements were the auxiliary, written ⲛⲁ in the second synthetic stage, and a second negative marker[361]. These additional elements were subsequently retained within each subsequent linguistic form of each construction, albeit with some orthographic and phonological changes, until the final synthetic stage of the construction.

However, the negative future ⲛⲫⲛⲁⲥⲱⲧⲙ ⲁⲛ, as well as the negative present ⲛⲫⲥⲱⲧⲙ ⲁⲛ, each show the ongoing loss of the negative marker ⲛ within Coptic. This ensured that in contexts in which ⲛ was excluded, each contained one less element, giving the negative future one more element than its earliest synthetic stage, and the negative present the same quantity of elements as its earliest synthetic stage.

As well as causing an increase in the quantity of elements, the addition of an auxiliary within each construction also caused a change in the means of expressing the grammatical information of the construction. Within the earliest synthetic forms, before an auxiliary was added, the inflection of the content verb was used to express the grammatical information of each construction. However, following auxiliarification it was the auxiliary in each construction which expressed the respective grammatical information, while the content verb predominantly appeared in an uninflected infinitive form[362]. This change in verbal

[361] A second negative marker and auxiliary were also added to the negative present construction during its development, however the auxiliary was lost by the most synthetic form of its second synthetic stage, thus it shows a discrepancy of one element between its synthetic stages.
[362] See 3.a.iii.4.b.

constructions caused a significant decrease in the number of inflected forms within the Egyptian language (Allen 2013:157).

This change in the means of expressing grammatical information caused by the addition of an auxiliary can also be seen in the developments of the present and terminative constructions, to which the auxiliaries *ḫr* and *ỉr* were added respectively. However, both of these auxiliaries were lost during the syntheticisation of these constructions, and thus the most synthetic form of the second synthetic stage of each construction contained the same quantity of elements as the first synthetic stage. Despite this, the use of auxiliaries caused the content verb in each construction to appear in the infinitive form, so the construction no longer used inflection to express its grammatical information. Instead this was unmarked in the present, and taken on by *šꜣʿ* in the terminative following the loss of the auxiliary in each. Thus despite the fact that the loss of the auxiliary element in both the present and terminative constructions ensured that they contained an equal quantity of elements in their respective earliest and latest synthetic forms, the addition of an auxiliary in the first place ensured that these forms were not identical.

5.c.i.3. Word Order

Every Egyptian verbal construction experienced a change in word order from VS to SV, typically caused by auxiliarification[363], although in the case of the conjunctive this occurred at a separate time[364]. The SV word order was then maintained in each construction throughout any further developments, and consequently later synthetic stages in each construction displayed a different word order to the earlier ones.

The only construction in which this was not the case was the past construction, the only Egyptian verbal construction which exhibited three synthetic stages within its development. The first two of these synthetic stages, in which the forms were *sḏm=f* and *sḏm=f*, exhibited the same word order, as well as containing the same quantity and category of elements, and encompassing the same level of separability. As a result, the first two synthetic stages of the past construction displayed an identical level of syntheticity in each of these regards.

[363] See 3.a.iv.1.
[364] See pg.245-246.

The form of the third synthetic stage of the past shows a more similar pattern to other constructions however, with the addition of an auxiliary causing a difference in word order between *sḏm=f* and ⲁⲧⲥⲱⲧⲙ. Consequently, the development of the past construction shows that a change in word order was not required with every repetition of the linguistic cycle, but instead seems to only occur once in the developments of Egyptian verbal constructions.

5.c.ii. Analytic Stages

5.c.ii.1. Quantity and Type of Elements

Of the four verbal constructions which exhibit two analytic stages in their developments, two show a difference in the quantity of elements in these two stages, namely the past and the perfect.

The linguistic form of the first analytic stage of the past construction, *(iw) sḏm.n=f*, contained four elements[365], while the linguistic form of the second analytic stage, *ir=f sḏm*, contained three. Thus in this respect the earlier form was more analytic than the later one, since the later form contained less elements. This contrasts with the data from synthetic stages, in which the later synthetic forms of each construction typically contained more elements than the earlier synthetic forms. However, the quantities of elements in the two analytic stages of the past construction do concur with the data from synthetic stages in that there is a discrepancy between the quantity of elements in the two stages, and the level of analyticity is not equal.

Within the perfect construction, the linguistic form in the earliest analytic stage, *wꜣḥ=f sḏm*, contained three elements, while the linguistic form of the later analytic stage, (ⲉ)ⲁⲭⲟⲩⲱ ⲉⲭⲥⲱⲧⲙ, contained six. This is more concurrent with the data from synthetic stages than the past construction, with the form used in the later stage containing more elements, and thus being more analytic. However, the discrepancy between the quantity of elements in the two analytic stages of the perfect constructions is greater than the discrepancy between the two synthetic stages of any construction, which at most have a discrepancy of two elements.

[365] Three when used in non-initial clauses.

In contrast to the past and perfect constructions, the negative habitual and negative future constructions contained the same quantity of elements in each of their respective two analytic stages. Each of the most analytic forms in the analytic stages of the negative habitual was comprised of four elements, while in the negative future these each contained five elements. Consequently the analytic stages within each construction exhibited an identical level of analyticity in this respect.

However, the categories of elements which constituted each analytic form within each construction were not all identical. In the negative habitual construction, the verb ending *.n* used in the first analytic stages was not present in the second analytic stage, but an auxiliary, *ir*, was. The negative future construction gained the negative marker **ꜣN**, consequently containing two negative markers in its second analytic stage in contrast to just one in its first. However, its second analytic stage contained one less marker of futurity, with both *iw* and *r* having been used in the first analytic stage, but only **Nꜣ** having been used in the second. Thus while the two analytic stages in each of the negative habitual and negative future constructions contained identical quantities of elements, these elements themselves were not identical.

5.c.ii.2. Word Order

Similar to the two synthetic stages of each construction, a change in word order from VS to SV is visible in the two analytic stages of the past and negative habitual constructions, with the first analytic stage of each construction showing the word order VS, and the second showing the word order SV. This is due to the fact that in both cases it was the second analytic stage in which auxiliarification occurred, with the addition of the auxiliary causing the change in word order[366] which was then maintained throughout the rest of the construction's development.

However, within the development of the perfect and negative future constructions, it was the first analyticisation stage which involved a newly auxiliarified form, and thus first shows the change in word order. As with other constructions, this word order was maintained throughout the subsequent development of the constructions, including

[366] See 3.a.iv.1.

through a second case of auxiliarification in each construction, and consequently the second analytic stage exhibited the same word order as the first analytic stage.

5.c.iii. Conclusions

The only example in the constructions considered in this thesis which shows a return to a form with an identical level of syntheticity is the two *sḏm=f* forms of the past construction. These may also show the resurgence of a linguistic form[367], thus being completely identical. Consequently, the first iteration of the linguistic cycle in the past construction is the only case in which the linguistic cycle might be considered to be truly cyclical within Egyptian verbal constructions.

In all other constructions, and within the second iteration of the linguistic cycle in the past construction, the various synthetic and analytic stages of each construction show differences in the level of syntheticity or analyticity which they exhibit. For example, the greater quantity of elements found in later synthetic stages of most constructions made these *less* synthetic than the earlier synthetic stages, whilst the greater level of separability seen in the earlier synthetic forms of certain constructions in comparison to that of the later stages made the later stages *more* synthetic in this particular respect. Furthermore, the change in word order and the different types of elements used in different linguistic forms ensured there were significant discrepancies even in constructions with the same apparent level of syntheticity in their synthetic or analytic stages.

Thus, while it is possible to establish alternating synthetic and analytic stages within the development of each individual construction, the differences between these stages ensure that the linguistic cycle within Egyptian verbal constructions was not a true cycle.

Alternative terminology has been suggested in order to reflect the non-cyclical nature of the linguistic cycle. For example, Haspelmath (2018) has referred to this linguistic pattern as the 'anasynthetic spiral', since the changes within this pattern do not directly reverse earlier changes (Haspelmath 2018:98). The term 'spiral' for this pattern was first suggested in 1891 by von der Gabelentz (1891:251), and its benefits have been discussed by more recent scholars, including van Gelderen, who stated that the term spiral 'emphasises the unidirectionality of the changes: languages do not reverse earlier change but may end up in

[367] See pg.39.

a stage typologically similar to an earlier one' (van Gelderen 2011:7-8), although it does still imply a degree of similarity in subsequent stages. However, the term 'linguistic cycle' continues to be a common term used for this linguistic pattern, through the work such as that of van Gelderen (2009a; 2011; 2013) and the regularly cited work of Hodge (1970).

6. Conclusions

An analysis of the levels of analyticity and syntheticity in the individual developments of Egyptian verbal constructions has demonstrated the existence of the linguistic cycle pattern in all of the 17 Egyptian verbal constructions examined within this thesis. In the majority of these constructions, the linguistic cycle pattern was formed through one stage of analyticisation, followed by one stage of syntheticisation, giving the linguistic forms of the construction a pattern of *synthetic* > *analytic* > *synthetic*. However, in four constructions, the past, perfect, negative habitual and negative future, this cycle was extended, with the perfect and negative future each undergoing analyticisation twice (*synthetic* > *analytic* > *synthetic* > *analytic*), the negative habitual undergoing syntheticisation twice (*analytic* > *synthetic* > *analytic* > *synthetic*), and the past construction undergoing a further repetition of each analyticisation and syntheticisation (*synthetic* > *analytic* > *synthetic* > *analytic* > *synthetic*). The ensured that while the majority of Egyptian verbal constructions completed one iteration of the linguistic cycle pattern, the perfect, negative habitual and negative future constructions exhibit one and a half repetitions of the cycle, while the past construction completed two repetitions.

6.a. The Nature of the Linguistic Cycle in Egyptian Verbal Constructions

6.a.i. How and Why was the Cycle Formed?

Generally speaking, within the formation of the linguistic cycle, the analyticisation of a construction involved processes which resulted in the additional presence of one or more elements within the construction, while syntheticisation involved processes which reduced the length, quantity, and independence of existing elements.

The most common process involved in the analyticisation of Egyptian verbal constructions was the auxiliarification of the content verb[368]. From this the additional presence of an auxiliary caused an increase in the quantity of elements in the construction, and the subsequent change of form and position of the content verb resulted in an increase in the autonomy of this element. Auxiliarification occurred once in the development of most constructions, with the exceptions of the perfect and future constructions, in which the content verb was auxiliarified twice, and the negative causative imperative, in which the marker was also auxiliarified sometime before the content verb. In the majority of constructions the first case of the auxiliarification of the content verb caused a concurrent a change in word order from VS to SV, with the exception of the conjunctive construction, in which this change in word order did occur, but not concurrently with auxiliarification.

As well as affecting the word order of the construction, the process of auxiliarification also affected the means of expressing the grammatical information of the construction, with this changing from inflection to the use of an auxiliary. However, the auxiliarification of the content verb typically had no effect on any markers which the construction contained, external to the content verb-subject group, nor the form taken by pronominal subjects, with affixes being used in all pre- and post-auxiliarification forms, save for in the conjunctive and negative present constructions.

The lexical items which were auxiliarified for use in verbal constructions were either verbal or prepositional lexemes, and were predominantly among the most frequent lexemes within these classes. They also had very generalised meanings, with the preference for the

[368] See 3.a.

sources of auxiliaries to be semantically general being made particularly evident by the future auxiliary *nʿy*. As a verbal lexeme *nʿy* initially carried the meaning of 'to travel over water', but was later generalised to carry the meaning of 'to go', at which point it was able to be auxiliarified.

Other means of increasing analyticity[369] also occurred in the developments of Egyptian verbal constructions, although not in every construction. These predominantly occurred as part of the same analyticisation stage in which auxiliarification occurred, but occurred as a separate analyticisation stage in the past and negative future constructions, and may be seen within a syntheticisation stage in the conjunctive construction. The majority of these alternative means of increasing analyticity involved the addition of a new element to the construction, with the exception of the reanalysis of one element as two, which only occurred in the conjunctive.

The main processes involved in the syntheticisation of Egyptian verbal constructions were erosion[370], loss[371], and coalescence[372]. Erosion occurred in the syntheticisation of all 17 constructions, while loss occurred in nine constructions. Coalescence also occurred in the developments of all Egyptian verbal constructions, primarily being visible in Coptic, although coalescence is evident prior to this in the negative past and terminative constructions. The widespread coalescence and consequent widespread syntheticisation which is visible from the development of the Coptic written language permits Coptic to be classed as a synthetic stage[373] within the history of the Egyptian language.

Within almost every stage of every verbal construction, there existed paradigmatic variation[374] between the form of a construction used with a pronominal subject and that used with a nominal subject. The only exception to this was in the negative present *nn sw ḥr sḏm*, in which any variation was negligible. Within all other linguistic forms and constructions the form used with pronominal subjects carried a lower overall level of autonomy than that used with nominal subjects, since pronominal subjects were less

[369] See 3.b.
[370] See 4.a.
[371] See 4.b.
[372] See 4.c.
[373] See 4.d.
[374] See 5.b.

separable from their surrounding elements[375]. Furthermore, within Coptic, the forms of the habitual, negative habitual and conjunctive constructions used with pronominal subjects contained a shorter prefix to the subject than those used with nominal subjects. Paradigmatic variation can also be seen in the expression of different subjects in the present, negative present and future constructions within Late Egyptian and Demotic[376].

The formation of the linguistic cycle pattern in Egyptian verbal constructions is likely to have been generally motivated[377] by consistent attempts by language users to 'talk in such a way that you are socially successful, at the lowest possible cost' (Keller 1994:102), with changes in priorities between extravagance and economy. Attempts to communicate in a more clear or extravagant way led to increases in analyticity, while attempts to communicate in the most economical way led to increases in syntheticity. Once the language had gone too far in one of these directions it returned towards the other end of the spectrum, since if a language is too economical it is not socially successful, while a language which is too extravagant is not at the lowest possible cost.

6.a.ii. Is the Linguistic Cycle Really a Cycle?[378]

In the 17 verbal constructions analysed in this thesis, there is only one case in which the linguistic cycle may be considered to be a true cycle. This occurred in the first iteration of the linguistic cycle pattern in the past construction, in which the linguistic forms of the earliest synthetic stage and the second synthetic stage were identical in the written language, possibly even being a resurgence of the same linguistic form. However, in the second iteration of the linguistic cycle in the past construction, as well as in all other constructions, this was not the case, and the various synthetic or analytic stages of each construction show a number of differences in the level of syntheticity. For example, the most synthetic linguistic form of the later synthetic stage of each construction typically contained a greater number of elements than that of the earlier synthetic stage, but in certain cases had a greater level of interdependency between its elements. The word order of the two synthetic stages was also different, as the auxiliarification which occurred in

[375] Within the conjunctive *ḥnꜥ sḏm ntf* and *ḥnꜥ ntf sḏm* the level of autonomy was the same, but nominal subjects were expressed using an additional element *in*, and thus such forms were more analytic than those with pronominal subjects.
[376] See pg.308-309.
[377] See 1.c.
[378] See 5.c.

each construction between these two stages ensured that while the earlier forms had VS word order, in the later forms this had changed to SV. Similar differences are also evident in the analytic stages of constructions which had multiple analytic stages. Consequently, the linguistic cycle pattern in Egyptian verbal constructions may not be classed as a true cycle, since an increase in syntheticity did not involve a return to an identical form, or one with an identical level of syntheticity, and likewise for an increase in analyticity. This pattern is consequently better described as a spiral, as has first been done by von der Gabelentz (1891:251), and more recently by Haspelmath (2018), although this also implies a degree of similarity, albeit it a lesser one. Furthermore, since the corresponding synthetic or analytic forms of a construction are not equivalent in terms of forms and level of syntheticity, it is not entirely accurate to describe the linguistic cycle in terms of analytic and synthetic stages, such as describing the majority of Egyptian verbal constructions as *synthetic* > *analytic* > *synthetic*, although this may still provide a helpful visualisation. A more precise approach would be to describe these in terms of the processes of analyticisation and syntheticisation, and thus the full linguistic cycle observed in Egyptian verbal constructions would be shown as *analyticisation* > *syntheticisation*.

6.a.iii. Time Scales

The developments of all Egyptian verbal constructions exhibit layering[379] between consecutive forms. In the majority of cases this layering was limited to within one language stage. However, in six constructions, the past, negative past, present, negative present, future, and negative future, each of which was among the most basic and commonly used verbal constructions, layering continued for significantly longer.

Within the developments of the 17 constructions considered in this thesis, there is no strong evidence to show that either analyticisation or syntheticisation took a longer time[380], with this being dependent on the individual construction. It can also be seen that it was possible for the processes of analyticisation and syntheticisation to overlap. For example, within the negative past construction, the coalescence of *n* and *pꜣ* occurred before the auxiliarified form became the most common linguistic form of the construction, with it being *bwpw=f sḏm* which replaced the earlier, more synthetic *n sḏm=f*, rather than *n pꜣ=f*

[379] See 5.a.i.
[380] See 5.a.ii.

sd̲m. Thus the syntheticisation of this later form had begun before the analyticisation of the construction was completed.

It was also possible for changes to occur which caused a movement towards the opposite side of the analytic/synthetic scale than the main development occurring at the time. That is to say, it was possible for a single linguistic process to cause an increase in syntheticity within an analyticisation stage while other processes caused a greater increase in analyticity, or vice versa. For example, this occurred in the terminative construction, in which the element *r* was phonologically weakened to *i*, thus causing a slight increase in syntheticity, alongside the auxiliarification of the construction, which caused a greater increase in analyticity than the concurrent increase in syntheticity and thus caused this stage as a whole to be analyticisation.

6.b. Comparing the Formation of the Linguistic Cycle across Different Egyptian Verbal Constructions

Across all Egyptian verbal constructions, auxiliarification was the primary cause of analyticisation. This typically caused a change in word order from VS to SV, and in most cases only occurred once across the development of the construction, with the exceptions of the perfect, negative future and negative causative imperative. All constructions also show similar causes of syntheticisation, with erosion and coalescence occurring in every construction. The majority of cases of erosion and coalescence are first visible from Coptic, although in earlier stages the future construction shows the erosion of a secondary form, and the negative past and terminative constructions each exhibit the results of erosion and coalescence. The syntheticisation of each construction did not involve any change of word order, unlike analyticisation.

However, variation can be seen between the constructions in that, contrary to Hodge's (1970:5) categorisation of the Egyptian language into morphological and syntactic stages, Egyptian does not exhibit clear analytic and synthetic stages until Coptic, with each construction developing at a different rate, to a different time scale. Furthermore, several constructions show alternative causes of increases in analyticity through the addition of non-auxiliary elements, while others do not. Similarly, the process of loss occurred in only nine of the 17 constructions considered in this thesis.

Consequently, this shows the need to consider the development of each construction individually, rather than classifying the entire language as a whole.

6.c. Comparing the Formation of the Linguistic Cycle in Egyptian Verbal Constructions and Constructions in Other Languages – Future Research Potential

While Egyptian verbal constructions provide 'a particularly striking example' (Haspelmath 2015:123) of the linguistic cycle, this pattern can also be seen in the developments of several other languages[381]. Egyptian verbal constructions show a number of both similarities and differences with the linguistic cycle pattern examples given in 1.b.: the Latin/French future construction, a K'iche' negation construction, and the Greek future construction. Each of the verbal constructions in Latin/French and Greek experienced auxiliarification as a cause of analyticisation and coalescence as a cause of syntheticisation, as well as the erosion of the auxiliary element from *habeo* to *ai* in Latin/French and from θέλω to θα in Greek. The K'iche' negation construction experienced analyticisation through the addition of a second negative marker, and syntheticisation through the ongoing loss of the original negative element, similar to the development of the N····ⲁN negation in Egyptian. Thus it may be hypothesised that each of these processes could be a general feature of the linguistic cycle pattern for verbal constructions and negation constructions respectively, although further research would be needed to reveal is this remained the case in further constructions and languages.

Several other features are evident in the development of at least one construction, but not in all. For example, Egyptian verbal constructions and the Greek future construction show a change in word order from VS to SV concurrent with auxiliarification. However, the change in word order from VS to SV in the Latin/French future construction did not occur with the first auxiliarification of this construction, and instead began through the addition of a subject pronoun during the syntheticisation of the construction, being eventually completed during the second auxiliarification of this construction. Furthermore, the development of the Greek future construction shows a reverse change in word order from SV to VS, but this is not seen in any other construction examined in this thesis.

[381] See 1.b.

Each construction also shows a different number of occurrences of auxiliarification. In all but three Egyptian verbal constructions[382] this only occurred once, and, in all but the perfect construction, in only one analyticisation stage. However, in the Latin/French future construction, auxiliarification occurred twice, being the cause of an increase in analyticity in two separate analyticisation stages. In the Greek future construction, while auxiliarification only occurred during one analyticisation stage, this resulted in multiple auxiliarified linguistic forms with a variety of different auxiliaries, as also occurred in the first auxiliarification within the Latin/French future construction.

Although the development of the K'iche' negation was very similar to the development of the Egyptian **ⲛ⋯ⲁⲛ** negation, one difference can be seen in that the Egyptian construction experienced the erosion of the second negative marker, in its development from *iwn3* to **ⲁⲛ**, while this has not occurred in the K'iche' negation, with *ta(x)* retaining the same form.

Consequently, it is likely that each of these features of the linguistic cycle are dependent on the language or, more likely, the particular construction involved. Furthermore, each of these differences indicates that the developments of various Egyptian verbal constructions generally had more in common with each other than with the developments of constructions in other languages.

Further research into the linguistic cycle pattern would aid in establishing further which are universal features of the linguistic cycle pattern, which may occur in the development of any language or construction but are not required, and which are unique to a single language or construction. Furthermore, it is highly likely there are additional examples of the linguistic cycle pattern which have not previously been comprehensively discussed within studies of the linguistic cycle. Finally, further study of the linguistic cycle pattern may aid in the prediction of future language development. The strong evidence for the repetitive nature of the linguistic cycle from Egyptian verbal constructions and the verbal constructions discussed above would suggest that a construction currently in an analytic stage will at some stage undergo syntheticisation, while a construction currently in a synthetic stage will at some stage undergo analyticisation. This is particularly likely due to

[382] The perfect, negative future and negative causative imperative, including auxiliarification of the marker as well as that of the content verb.

the motivations behind the formation of the linguistic cycle pattern[383], as the ongoing attempts by language users to 'talk in such a way that you are socially successful, at the lowest possible cost' (Keller 1994:102) ensure that languages are highly unlikely to continue getting more and more analytic or more and more synthetic, but will always return to the opposite side of the analytic/synthetic spectrum, although this may take hundreds or even thousands of years.

For example, Pulgram (1963:36) has suggested that the next form of the French future constructions will be **je vaisaimer*, with the coalescence of *vais* and *aimer*, while van der Auwera & Vossen (2016:195) have noted that the K'iche' negation is currently in stage four of the Jespersen cycle, (NEG) V NEG, and it is highly likely that it will progress to stage five of the Jespersen cycle, V NEG, in which the loss of *man(a)* will be completed, spreading the increase in syntheticity caused by this to all contexts. Within the development of the Greek future construction, it might be expected that the coalescence of θα and the content verb may continue, until θα is inseparable from the verb by any external element, and is clearly a true prefix. This form will then likely be replaced by a new periphrastic form.

[383] See 1.c.

Glossary

Some of the terminology given here may be found with alternative meanings in other linguistic works. The definitions given here are those followed in this thesis.

Affix	A bound morpheme which is added to a word stem, producing a new word or stem.
Affixation	The merging of two or more linguistic units of different morphosyntactic status (i.e. a combination of root and non-root morphemes) into a single word.
Agglutinating	A word formed from a sequence of several morphemes, often a stem and several affixes, each of which typically expresses a single piece of grammatical information.
Analytic	A form with a higher quantity of elements, and a greater level of autonomy and separability between its elements.
Analyticisation	The macro-process of increasing analyticity by increasing the quantity of elements or autonomy/separability of a construction.
Autonomy	Independence from other words within a construction. Greater autonomy is often indicated by greater separability.
Auxiliarification	In relation to constructions: the addition of an auxiliary to a construction. Either through direct development, in which the auxiliary was added to the existing form of the construction, or replacement, in which the auxiliary was auxiliarified in an alternative construction which then replaced the existing form of the construction. In relation to an auxiliary: the process of grammaticalisation from a lexeme to a grammatical auxiliary.

Auxiliary	An element within a construction which expresses grammatical information such as tense, aspect, mood or voice, among others. Crosslinguistically these most commonly originate from verbal lexemes, but may also develop from other classes of lexeme.
Clitic	A morpheme which has the syntactic characteristics of a word, but is dependent on a preceding or following word.
Cliticisation	A chain of linguistic shift, involving the loss of independence, leading to the development from independent word to clitic to affix.
Coalescence	The conjoining of two or more previously independent elements, involving a loss of separability and independence. Coalescence covers the processes of compounding, affixation and fusion.
Compounding	The merging of two or more linguistic units of the same morphosyntactic status (i.e. all root morphemes or all non-root morphemes) into a single word.
Decategorialisation	A chain of linguistic shift, involving the loss of morphosyntactic properties characteristic of a category of lexeme (e.g. the loss of verbal properties).
Desemanticisation	A chain of linguistic shift, involving the loss of lexical meaning and the gaining of grammatical meaning.
Divergence	Morphological, semantic, syntactic and/or phonological differences between two or more forms of identical origin, following their separate developments.
Erosion	A chain of linguistic shift, involving reduction of phonological form.
Fusion	The loss of the morpheme boundary between two morphemes or words, allowing them to be classed as one morpheme.

Independent word	A word which is not dependent on any surrounding words, and may appear in isolation. Independent words are also frequently more morphologically complex than clitics or affixes.
Interdependency	The reliance of two or more elements of a construction on one another. Greater interdependency is often indicated by reduced separability.
Layering	The coexistence of newer and older forms of a construction.
Linguistic cycle	A linguistic pattern formed from repeating alternation between analyticisation and syntheticisation (or analytic and synthetic forms) across the diachronic development of a construction.
Linguistic form	The structure of a construction in terms of the configuration of expressed components.
Loss	The elimination of an element of a construction, eventually resulting in its permanent absence from the construction. With respect to Egyptian, this certainly refers to the absence of an element from the orthographic form of a construction, although this does not necessitate its absence from the linguistic form.
Non-root morpheme	A function word, such as a preposition, pronoun, or article, which indicates the grammatical relationships between content words (root morphemes).
Obligatorification	The presence of an element in a construction becoming more obligatory, with it eventually being unable to be omitted.
Orthographic form	The written representation of a construction (or element of a construction). This does not necessarily reflect the contemporary linguistic form.
Root morpheme	A content word, such as a noun, verb, or adjective, which has full semantic content.
Synthetic	A form with a lower quantity of elements, a greater level of interdependency and a consequent lower level of separability.

Syntheticisation	The macro-process of increasing syntheticity by decreasing the quantity of elements or increasing the interdependency of a construction.

List of Abbreviations

1 Clem.	Schmidt, C., 1908, *Der erste Clemensbrief in altkoptische Übersetzung*. Leipzig.
1 Cor.	Thompson, H., 1932, *The Coptic Version of the Acts of the Apostles and the Pauline Epistles in the Sahidic Dialect*. Cambridge:119-147.
1 Sam.	Drescher, J., 1970, *The Coptic (Sahidic) Version of Kingdoms I, II (Samuel I, II)*. Corpus Scriptorum Christianorum Orientalium 313. Louvain.
2 Sam.	Drescher, J., 1970, *The Coptic (Sahidic) Version of Kingdoms I, II (Samuel I, II)*. Corpus Scriptorum Christianorum Orientalium 313. Louvain.
2 Tim.	Thompson, H., 1932, *The Coptic Version of the Acts of the Apostles and the Pauline Epistles in the Sahidic Dialect*. Cambridge:239-244.
Abkau	Piehl, K., 1881, 'Inscription de la XII. Dynastie (La stele 21 du musee de Turin)', *Zeitschrift für ägyptische Sprache und Altertumskunde* 19:18-22.
Ac. A&P	Jacques, X., 1969, 'Les deux fragments conservés des «Actes d'André et de Paul» (Cod. Borg. Copt. 109, fasc. 132)', *Orientalia* 38 :187-213.
Acts	Thompson, H., 1932, *The Coptic Version of the Acts of the Apostles and the Pauline Epistles in the Sahidic Dialect*. Cambridge:1-88.
Amarna Boundary Stela	Sandman, M., 1938, *Texts from the Time of* Akhenaten. Bibliotheca Aegyptiaca 8. Brussels:103-131.
Amonstempels	Borchardt, L., 1964, *Zur Baugeschichte des Amonstempels von Karnak*. Reprint of 1905 edn. Untersuchungen zur Geschichte und Altertumskunde Ägyptens 5.1. Hildesheim.
Ankhtifi	Vandier, J., 1950, *Mo'alla: la Tombe d'Ankhtifi et la Tombe de Sebekhotep*. Bibliothèque d'Étude 18. Cairo:161-264
Antony	Garitte, G., 1949, *S. Antonii Vitae: versio* sahidica. Corpus Scriptorum Christianorum Orientalium 117. Paris.
AP	Chaîne, M, 1960, *Le manuscrit de la version copte en dialecte sahidique des Apothegmata Patrum*. Bibliothèque d'Études Coptes 6. Cairo.

Basil	Budge, E.A.W., 1910, *Coptic Homilies in the Dialect of Upper Egypt*. London:105-114.
Beni Hasan	Newberry, P.E., 1893-1900, *Beni Hasan*. 4 vols. Archaeological Survey of Egypt 1, 2, 5 & 7. London.
BM EA 614	Scott-Moncrieff, P., 1911, *Hieroglyphic Texts from Egyptian Stelae, etc., in the British Museum, Part 1*. London: pl.49-50.
BM EA 828	Scott-Moncrieff, P., 1912, *Hieroglyphic Texts from Egyptian Stelae, etc., in the British Museum, Part 2*. London: pl.21.
BM EA 1372	Scott-Moncrieff, P., 1911, *Hieroglyphic Texts from Egyptian Stelae, etc., in the British Museum, Part 1*. London: pl.54.
Canon of Apa John	coptot.manuscriptroom.com/web/apa-johannes/codices
CT	de Buck, A., 1935-1947, *The Egyptian Coffin Texts*. 7 vols. Chicago.
Debehen	Hassan, S., 1943, *Excavations at Giza. Vol. 4: 1932-1933*. Cairo:168 & pl.48.
Decree of Neferirkare	Goedicke, H., 1967, *Königliche Dokumente aus dem Alten Reich*. Wiesbaden:23.
Demotic Chronicle	Spiegelberg, W., 1914, *Die sogenannte Demotische Chronik des Pap. 215 der Bibliothèque Nationale zu Paris*. Leipzig.
Deut.	coptot.manuscriptroom.com/manuscript-workspace/?docID=620017
Discourse of Apa John	Budge, E.A.W., 1910, *Coptic Homilies in the Dialect of Upper Egypt*. London:1-45.
Edfou	de Rochemontieux, M. & Chassinat, É., 1984, *Le temple d'Edfou I*. 2nd edn., corrected by S. Cauville & D. Devauchelle. Cairo.
Eud.	Orlandi, T., 1980, *Eudoxia and the Holy Sepulchre: A Constantinian Legend in Coptic*. Testi e documenti per lo studio dell'antichità 67. Milan.
Fowler	Parkinson, R.B., 2004, '"The Discourse of the Fowler": Papyrus Butler Verso (P. BM EA 10274)', *Journal of Egyptian Archaeology* 90:81-111.
Gal.	Thompson, H., 1932, *The Coptic Version of the Acts of the Apostles and the Pauline Epistles in the Sahidic Dialect*. Cambridge:188-197.

Hatnub	Anthes, R., 1928, *Die Felsinschriften von Hatnub*. Untersuchungen zur Geschichte und Altertumskunde Ägyptens 9. Leipzig.
Heavenly Cow	Maystre, C., 1940, 'Le livre de la Vache du Ciel dans les tombeaux de la Vallée des Rois', *Bulletin de l'Institut Français d'Archéologie Orientale* 40:53-115.
Hekanakht	Allen, J.P., 2002, *The Heqanakht Papyri*. Publications of the Metropolitan Museum of Art Egyptian Expedition 27. New York.
HI	Sander-Hansen, C.E., 1933, *Historische Inschriften der 19. Dynastie*. Bibliotheca Aegyptiaca 4. Brussels.
Hil.	Drescher, J., 1947, *Three Coptic legends: Hilaria. Archellites. The Seven sleepers*. Supplément aux Annales du Service des Antiquités de l'Égypte 4. Cairo:1-13.
HO	Černý, J. & Gardiner, A.H., 1957, *Hieratic Ostraca*. Oxford.
Instructions of Apa Pachomius	Budge, E.A.W., 1913, *Coptic Apocrypha in the Dialect of Upper Egypt*. London:146-176.
Ipuwer	Gardiner, A.H., 1969, *The Admonitions of an Egyptian Sage*. Reprint of 1909 edn. Hildesheim.
Isaac	Kuhn, K.H., 1957, 'The Sahidic Version of the Testament of Isaac', *Journal of Theological Studies* 8:225-239.
Job	https://digi.vatlib.it/view/MSS_Borg.copt.109.fasc.24 Job 5.18 = 48v.20-21 Job 8:20 = 52v.2 Job 8:22 = 52v.7-8 Job 14:14 = 58v.2
John (Boharic)	Sharp, D.B., 2016, *Papyrus Bodmer III: An Early Coptic Version of the Gospel of John and Genesis 1-4:2*. Arbeiten zur neutestamentlichen Textforschung 48. Berlin & Boston.
John (Fayumic)	Husselman, E.M., 1962, *The Gospel of John in Fayumic Coptic (P. Mich. Inv. 3521)*. Ann Arbor.

John (Sahidic)	Quecke, H., 1984, *Das Johannesevangelium saïdisch: Text der Handschrift PPalau Rib. Inv.-Nr. 183 mit den Varianten der Handschriften 813 und 814 der Chester Beatty Library und der Handschrift M 569*. Papyrologica Castroctaviana 11. Rome & Barcelona.
K*RI*	Kitchen, K.A., 1969-1990, *Ramesside Inscriptions: Historical and Biographical*. 8 vols. Oxford.
L. to D.	Gardiner, A.H. & Sethe K., 1928, *Egyptian Letters to the Dead: Mainly from the Old and Middle Kingdoms*. London.
Lahun Gynaecological Papyrus	Collier, M. & Quirke, S., 2004, *The UCL Lahun Papyri: Religious, Literary, Legal, Mathematical and Medical*. British Archaeological Reports International Series 1209. Oxford:58-64.
L*D*	Lepsius, R., 1849-1859, *Denkmäler aus Ägypten und Äthiopien*. 6 vols. Berlin.
LEM	Gardiner, A.H., 1937, *Late Egyptian Miscellanies*. Bibliotheca Aegyptiaca 7. Brussels.
LES	Gardiner, A.H., 1932, *Late Egyptian Stories*. Bibliotheca Aegyptiaca 1. Brussels.
Lesestücke	Sethe, K., 1959, *Ägyptische Lesestücke zum Gebruach in akademischen Unterricht: Texten des Mittleren Reiches*. 3rd edn. (reprint of 2nd edn.). Hildesheim.
LRL	Černý, J., 1939, *Late Ramesside Letters*. Bibliotheca Aegyptiaca 9. Brussels.
Luke	Quecke, H., 1977, *Das Lukasevangelium saïdisch: Text der Handschrift PPalau Rib. Inv.-Nr. 181 mit den Varianten der Handschrift M 569*. Papyrologica Castroctaviana 6. Barcelona.
Magical	Griffith, F.L. & Thompson, H., 1921, *The Demotic Magical Papyrus of London and Leiden*. Oxford.
Man & Ba	Faulkner, R.O., 1956, 'The Man who was Tired of Life', *Journal of Egyptian Archaeology* 42:21-40.
Mark	Quecke, H., 1972, *Das Markusevangelium saïdisch: Text der Handschrift PPalau Rib. Inv.-Nr. 182 mit den Varianten der Handschrift M 569*. Papyrologica Castroctaviana 4. Barcelona.

Matt. (Oxyrhynchitic)	Schenke, H.M., 1981, *Das Matthäus-Evangelium im mittelägyptischen Dialekt des Koptischen (Codex Scheide)*. Berlin.
Matt. (Sahidic)	Aranda Perez, G., 1984, *El evangelio de san Mateo en copto sahidico (texto de M 569, estudio preliminat y aparato critico)*. Madrid.
Meir	Blackman, A.M., 1914-1924, *The Rock Tombs of Meir*. 6 vols. Archaeological Survey of Egypt 22, 23, 24, 25, 28 & 29. London.
Meletian Letter	Crum, W.E., 1927, 'Some Further Meletian Documents', *Journal of Egyptian Archaeology* 13:19-26.
Mena	Drescher, J., 1946, *Apa Mena: A Selection of Coptic Texts Relating to St. Menas*. Cairo.
Merer	Černý, J., 1961, 'The Stela of Merer in Cracow', *Journal of Egyptian Archaeology* 47:5-9.
Mersyankh	Dunham, D. & Simpason, W.K., 1974, *The Mastaba of Queen Mersyankh III. G7530-7540*. Giza Mastabas 1. Boston.
Mereruka	Duell, P., 1938, *The Mastaba of Mereruka*. 2 vols. Oriental Institute Publications 31 & 39. Chicago.
MES	Blackman, A.M., 1932*, Middle Egyptian Stories.* Bibliotheca Aegyptiaca 2. *Brussels*
Michaelides	Hughes, G.R., 1969, 'The Cruel Father: A Demotic Papyrus in the Library of G. Michaelides', in Hauser, E. (ed.), *Studies in Honor of John A. Wilson: September 12, 1969*. Studies in Ancient Oriental Civilization 35. Chicago:43-54.
Mythus	Spiegelberg, W., 1917, *Der ägyptische Mythus vom Sonnenauge*. Strassburg.
Naunakhte	Černý, J., 1945, 'The Will of Naunakhte and the Related Documents', *Journal of Egyptian Archaeology* 31:29-53.
Nimaatre	Edel, E., 1944, 'Untersuchungen zur Phraseologie der Ägyptischen Inschriften des Alten reiches'. *Mitteilungen des Deutschen Archäologischen Instituts Abteilung Kairo* 13. Berlin:77.
O. DM 10248	Grandet, P., 2010, *Catalogue des ostraca hiératiques non littéraires de Deir El-Medineh. Tome XI. Nos 10124-10275*. Documents de fouilles de l'Institut français d'archéologie orientale du Caire 48. Cairo:129-131 & 355-357.

O. DN 156	Menchetti, A., 2005, *Ostraka demotici e bilingui da Narmuthis: ODN 100-188*. Biblioteca di studi egittologici 5. Pisa:95 & pl.15.
O. DN Narmouthis 2006 15	Bresciani, E. et al., 2010, *Narmouthis 2006: documents et objets découverts à Médinet Madi en 2006*. Monografie di Egitto e vicino oriente 2. Pisa:65 & pl.13.
O. OI 16991	Wente, E.F., 1961, 'A Letter of Complaint to the Vizier To', *Journal of Near Eastern Studies* 20:252-257.
OI E13945	Gardiner, A.H., 1930, 'A New Letter to the Dead', *Journal of Egyptian Archaeology* 16:19-22.
Onchsheshonqy	Glanville, S.R.K., 1955, *The Instructions of 'Onchsheshonqy: British Museum Papyrus 10508*. Catalogue of Demotic Papyri in the British Museum 2. London.
Onnophrios	Budge, E.A.W., 1914, *Coptic Martyrdoms in the Dialect of Upper Egypt*. London:205-224.
P. Anastasi I	Gardiner, A.H., 1911, *Egyptian Hieratic Texts: Literary Texts of the New Kingdom. Part 1: The Papyrus Anastasi I and the Papyrus Koller, Together with the Parallel Texts*. Leipzig.
P. Berlin 10025	Scharff, A., 1924, 'Briefe aus Illahun', *Zeitschrift für ägyptische Sprache und Altertumskunde* 59:20-51 & Umschrift 1-12.
P. Berlin 10463	Caminos, R., 1963, 'Papyrus Berlin 10463', *Journal of Egyptian Archaeology* 49:29-37.
P. BM EA 9999	Erichsen, W., 1933, *Papyrus Harris I: Hieroglyphische Transkription*. Bibliotheca Aegyptiaca 5. Brussels.
P. BM EA 10042	Leitz, C., 1999, *Magical and Medical Papyri of the New Kingdom.* Hieratic Papyri in the British Museum 7. London: pl.12-25.
P. BM EA 10052	Peet, T.E., 1930, *The Great Tomb Robberies of the Twentieth Egyptian Dynasty*. Oxford: pl.25-35.
P. BM EA 10085	Leitz, C., 1999, *Magical and Medical Papyri of the New Kingdom.* Hieratic Papyri in the British Museum 7. London: pl.47-51.
P. BM EA 10102	Glanville, S.R.K., 1928, 'The Letters of Aaḥmōse of Peniati', *Journal of Egyptian Archaeology* 14:294-312.

P. BM EA 10800	Edwards, I.E.S., 1971, 'Bill of Sale for a Set of Ushabtis', *Journal of Egyptian Archaeology* 57:120-124.
P. Boulaq 6	Koenig, Y., 1981, *Le Papyrus Boulaq 6: Transcription, Traduction et Commentaire*. Cairo.
P. Boulaq 8	Baer, K., 1966, 'A Deed of Endowment in a Letter of the Time of *Ppjj* I?', *Zeitschrift für ägyptische Sprache und Altertumskunde* 93:1-9.
P. Boulaq 10	Janssen, J.J. & Pestman, P.W., 1968, 'Burial and Inheritance in the Community of the Necropolis Workmen at Thebes (Pap. Bulaq X and O. Petrie 16)', *Journal of the Economic and Social History of the Orient* 11:137-170.
P. Brooklyn 47.218.135	Jasnow, R., 1992, *A Late Period Hieratic Wisdom Text (P. Brooklyn 47.218.135)*. Studies in Ancient Oriental Civilization 52. Chicago.
P. Carlsberg 8	Iversen, E, 1939, *Papyrus Carlsberg No. VIII with some remarks on the Egyptian Origin of Some Popular Birth Prognoses*. Copenhagen.
P. Carlsberg 207	Tait, W. J., 1991, 'P. Carlsberg 207: Two columns of a Setna-text', in Frandsen, P.J. (ed.), *The Carlsberg Papyri 1: Demotic Texts from the Collection*. Carsten Niebuhr Institute Publications 15. Copenhagen:19-46 & pl.1-3.
P. Edwin Smith	Breasted, J.H., 1930, *The Edwin Smith Surgical Papyrus: Published in Facsimile and Hieroglyphic Transliteration with Translation and Commentary in Two Volumes*. 2 vols. Oriental Institute Publications 3 & 4. Chicago.
P. Insinger	Lexa, F., 1926, *Papyrus Insinger: les enseignements moraux d'un scribe égyptien du premier siècle après J.-C.*. Paris
P. Leiden I 350	https://www.rmo.nl/collectie/collectiezoeker/collectiestuk/?object=170950
P. Leiden I 365	https://www.rmo.nl/collectie/collectiezoeker/collectiestuk/?object=21267
P. Leopold-Amherst	Capart, J. et al., 1936, 'New Light on the Ramesside Tomb-Robberies', *Journal of Egyptian Archaeology* 22:169-193.
P. Louvre 2414	Volten, A., 1955, 'Die moralische Lehren des demotischen Pap. Louvre 2414', in *Studi in memoria di I. Rosellini*, *Vol. 2*. Pisa:269-280 & pl.34-35.
P. Mayer A	Peet, T.E., 1920, *The Mayer Papyri A & B*. London.

P. Mond 2	Silverman, D.P., 1991, 'Texts from the Amarna Period and their Position in the Development of Ancient Egyptian', *Lingua Aegyptia* 1:312.
P. Nevill	Barns, J., 1949, 'The Nevill Papyrus: A Late Ramesside Letter to an Oracle', *Journal of Egyptian Archaeology* 35:69-71.
P. Petese Tebt. A	Ryholt, K., 1999, *The Carlsberg Papyri 4: The Story of Petese Son of Petetum and Seventy Other Good and Bad Stories (P. Petese)*. Carsten Niebuhr Institute Publications 23. Copenhagen.
P. Prisse	Jequier, G., 1911, *Le Papyrus Prisse et ses Variantes*. Paris.
P. Salt 124	Černý, J., 1929, 'Papyrus Salt 124 (Brit. Mus. 10055)', *Journal of Egyptian Archaeology* 15:243-258.
P. Strassburg 24 V	Spiegelberg, W., 1917, 'Briefe der 21. Dynastie aus El-Hibe', *Zeitschrift für ägyptische Sprache und Altertumskunde* 53:18-19.
P. Strassburg 33	Spiegelberg, W., 1917, 'Briefe der 21. Dynastie aus El-Hibe', *Zeitschrift für ägyptische Sprache und Altertumskunde* 53:7-8.
P. Turin 1977	Bakir, A., 1970, *Egyptian Epistolography from the Eighteenth to the Twenty-First Dynasty*. Cairo.: pl.26 &33.
P. UC 32200	Collier, M. & Quirke, S., 2002, *The UCL Lahun Papyri: Letters.* British Archaeological Reports International Series 1083. Oxford:100-103.
P. UC 32210	Collier, M. & Quirke, S., 2002, *The UCL Lahun Papyri: Letters.* British Archaeological Reports International Series 1083. Oxford:132-135.
P. Vandier	Posener, G., 1985, *Le Papyrus Vandier*. Bibliothèque Générale 7. Paris.
P. Westcar	Blackman, A.M., 1988, *The Story of King Cheops and the Magicians: Transcribed from Papyrus Westcar (Berlin Papyrus 3033)*. Reading.
Pachomius	Lefort, L. Th., 1952, *S. Pachomii Vitae Sahidice Scriptae*. Corpus Scriptorum Christianorum Orientalium 99 & 100. Leuven.
Paheri	Tylor, J.J. & Griffith, F.L., 1894, *The Tomb of Paheri at El Kab*. London.
Peasant	Parkinson, R.B., 1991, *The Tale of the Eloquent Peasant*. Oxford.
Petubastis	Spiegelberg, W, 1910, *Der Sagenkreis des Königs Petubastis nach dem Strassburger demotischen Papyrus sowie den Wiener und Pariser Bruchstücken*. Leipzig.

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