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Exaptation across Grammatical Domains: A Generative Account source contexts, mechanisms, and outcomes

From Verb Second to Locative Inversion in the History of English

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Declaration page:

This dissertation is the result of my own work and includes nothing which is the outcome of work done in collaboration except where specifically indicated in the text.

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All remaining errors are my own. Uncited examples are also my own.

Abbreviations

<u>Linguistic varieties</u>

OE = Old English   ME = Middle English

EME = Early Middle English   LME = Late Middle English

EModE = Early Modern English   ModE= Modern English[1]

PDE = Present Day English   MD = Middle Dutch

EModD= Early Modern Dutch   ModD = Modern Dutch

MHG = Middle High German

<u>Author Abbreviations</u>

B&R = Biberauer & Roberts   B&S = Brinton & Stein

H&C = Harris & Campbell   R&S = Rizzi & Shlonsky

R&R = Roberts & Roussou

<u>Other abbreviations</u>

BCC = Borer-Chomsky Conjecture   BE = The Blocking Effect

CLA = Child Language Acquisition   EPP = Extended Projection Principle

FE = Feature Economy   HMC = Head Movement Constraint

IG = Input Generalisation   LI = Locative Inversion

NI = Negative Inversion   PIC = Phase Impenetrability Constraint

PCF = Primary Conditioning Factor   PLD = Primary Linguistic Data

QI= Quotative Inversion   SC = Subject Criterion

<u>Glossing abbreviations</u>

ADV = Adverb	CL = Clitic	DEIC = Deictic	DIST = Distal
INF = Infinitive	LOC = Locative	Temp= Temporal	PL = Plural
PN = Pronoun	PST = Past	PTCP = Participle	REFL = Reflexive
SCL= Subject clitic	SG = Singular	SU = Subject	Vf = Finite verb
1 = 1ST person	2 = 2nd person	3 = 3rd person	

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[1] This is used here as a blanket term for English from the latter half of the 17th Century until the present day. Where PDE is employed, it specifies the present exclusively.

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1. INTRODUCTION

It is well known that breakdown in one part of the grammar can lead to change elsewhere. For example, breakdown in English phonology contributed to nominal deflexion, which proved especially catastrophic for the Old English case system (Allen 1995:63). The notion that change, including breakdown, in one domain catalyses change in another forms the basis of Longobardi's (2001) inertial theory of syntactic change, whereby syntactic change is invariably triggered by developments external to the syntax: phonology, semantics, morphology, or eventually other syntactic changes. Therefore, the study of structures affected by breakdown offers insight into the ability of the human's device to acquire language. An important question for linguists in both diachrony and child language acquisition (CLA) is to know, a) what our language learning "computer" does with bad data; and more importantly, b) can it produce good data from bad data.

A remarkable response to breakdown is EXAPTATION (Los 2013), a term introduced to diachronic linguistics by Lass (1990). In linguistics this refers the recycling, or rather co-option of linguistic material which has lost its original function, i.e. "junk", in conceptually innovative functions. Exaptive changes are capable of reclassifying material between grammatical domains. Examples which I elaborate in §2 include: the reanalysis of German phonological i-mutation as plural-marking morphology, the reanalysis of Afrikaans adjectival gender inflection as a morphological property on adjectival heads (Lass 1990), and the reanalysis of features on past-tense forms of English copular *BE* (was/were) from conditioning by person/number phi-features to polarity features (Willis 2016).

However, exaptation has received little attention from a generative minimalist perspective, barring Willis' (2010, 2016) work on morphosyntactic exaptation. Under generative assumptions narrow syntax like morphosyntax is dictated by feature-driven parameters; therefore exaptive change should also be possible in syntax.

The mechanics, definition and even validity of exaptation are contested. Some reject it as epiphenomenal (De Cuypere 2005, Jensen 2016, Joseph 2016), while others maintain it constitutes a fundamental process of change (Lass 1990, 1997, Croft 2000, Brinton & Stein 1995). This thesis does not aim to review all approaches to exaptation but rather to find shared characteristics in exaptive changes as to clarify the circumstances leading to exaptation, and how we might properly identify it. In this way, we are better placed to model exaptation in generative terms. I shall argue that exaptation is an epiphenomenal concept, but a useful tool to describe radical changes in in certain scenarios.

Exaptive changes do not follow functionalist conceptualizations of unidirectionality in syntactic change (Lehmann 1995), i.e. a cline of *lexical word> grammatical word> clitic> affix*. In contrast, from a minimalist perspective (morpho)syntactic change need not follow any directionality, since change is the reanalysis of heads either up or down the syntactic derivation (Roberts & Roussou 2003) (Henceforth R&R). The current approach assumes the child acquiring language as the locus of language change (Meisel 2011), and that change in the I-language reflects children's attempts to create a coherent grammar from the linguistic input they receive from adults, i.e. primary linguistic data (PLD). The PLD interacts with Universal Grammar (UG) and general cognitive processes, i.e. Chomsky's (2005) 'third factors', to set parameters.

Section two provides a discussion of past approaches to exaptation in order to determine the basic parameters of exaptation. In section three, I discuss exaptation from this approach and relate exaptive changes to evidence from CLA. I then predict which material is most susceptible to exaptive reanalysis and how to understand it in terms of parametric change. To this goal, I adopt an emergent minimalist conceptualisation of macro, meso, micro and nano-parameters which affect the grammar to differing extents from most to least pervasive (Biberauer & Roberts 2012) (Henceforth B&R). I argue that exaptation is symptomatic of making sense out of PLD insufficient for parameter setting, where breakdown in form and function has obscured the target value.

In section four, I employ work on both the mechanisms (R&R 2003, Harris and Campbell 1995) (henceforth H&C) and course (Kroch 1994) of morphosyntactic/syntactic change. Following Willis (2010, 2016) I argue that exaptation is a radical kind of feature analysis based on weak evidence in the PLD. I expand on this approach, examining the scenarios leading to exaptation further. However, this thesis considers the primary catalyst of exaptive reanalysis to be the opacity of PLD.

I then apply this approach to syntactic change, explicitly involving the actuation of formal features on a phonologically-empty head. Specifically, I investigate the emergence of a microparameter in Early Modern English (EModE) allowing for marked locative inversion (LI) structures, e.g. *in comes Steve,* in a system which largely disallows other XVS structures. I show that this was a response to the breakdown of the Verb-Second (V2) and other parameters during the Middle English (ME) and EModE periods. The results confirm that syntactic heads are vulnerable to exaptive reanalysis an acquistional last resort. I conclude my findings in section 5.

2. EXAPTATION: A CRITICAL REVIEW

2.1. What is exaptation?

The term exaptation, introduced to linguistics by Lass (1990), originally denoted the refunctionalisation of redundant morphology "junk" in a new and conceptually innovative grammatical role. Before addressing linguistic exaptation, I shall first discuss the bio-evolutionary origins of the term.

2.1.1. Exaptation in Evolutionary Biology

Exaptation describes evolutionary processes distinct from adaptation (Gould and Vrba (1982). Adaptation represents natural selection shaping the character of traits for current usage (Gould & Vrba 1982:5). Exaptation instead describes developments down to the co-option of pre-existing genetic traits for an extra function. Such traits take two forms: those preselected for a function and those without their own selective function o. The latter arise as by-products of other adaptive developments and are termed 'spandrels' (Gould & Lewontin 1979), originally a gratuitously decorated space between arches supporting a dome (van de Velde & Norde 2016:5). A much-cited example of exaptation of the first kind is the co-option of feathers for flight by birds (Gould & Vrba 1982). Feathers originally played a thermoregulatory role before the feathers' surface area allowed for limited flight. Once limited flying ability was exapted, it was further selectively adapted for flight. However, feathers retained thermoregulatory function. An exaptation involving spandrels is the co-option of a functionless hump between the shoulders of the Irish Elk for mating displays (Gould 1997:10754, Van de Velde & Norde 2016:5). This hump was a by-product of vertebrae growth necessary to support its antlers. However, distinctive colouring possibly led its co-option for a role in mating displays. Once again, the hump would exist without its exapted function. Thus, evolutionary exaptation represents co-option in a layering of functions and by-products. The goal of this section is to examine how metaphorical extension of this terminology to diachronic linguistics can inform understanding of language change.

2.1.2. Lass' Exaptation in Language

Lass (1990) observed that not all morphosyntactic change follows linear developments whereby morphemes acquire new functions by extension of their current

function, such is familiar in grammaticalisations including "unidirectional" changes feeding further developments. For example, Bybee (1994) finds that root and deontic modals regularly adapt as future markers. In minimalist terms, such changes can be considered 'upward grammaticalisation' (R&R 2003); that is, the reanalysis of syntactic heads from a lower to higher position in the derivation (revisited in §3). Regardless of frameworks, grammaticalisations entail typologically attested developments from one grammatical value to another. In grammaticalisation the loss of previous grammatical substance occurs after new grammaticalised function are actuated, not as a precursor. Generally, these elements were never surplus to the grammar or opaque during CLA but were instead open to multiple analyses (H&C 1995).

In contrast, Lass (1990:80-82) considers exaptation the result of the co-option of functionless "junk" morphology, leading to the innovation of conceptual novelty in the linguistic system. That is, change occurs because morphemes have lost function. This, he argues, is akin to abundant defunct genetic material passed on in DNA. This is a problematic position, which I address in §2.2. Junk is loosely defined as morphological forms no longer marking grammatical distinctions, e.g. person, number, gender (Phi-features), because distinctions have been lost. In short, junk is form without function. Lass (1990:82) presents three possible fates for junk under the motto 'adapt or die':

   i.   it can be dumped entirely;

  ii.   it can be kept as marginal garbage or nonfunctional/nonexpressive residue (suppletion, 'irregularity');

 iii.   it can be kept, but instead of being relegated as in (ii), it can be used for something else, perhaps just as systematic.

That forms which lose function may be dumped is uncontroversial, i.e. they are simply not acquired. The second option is misleading; forms in suppletive paradigms, e.g. *I shall* vs *you will*, are neither garbage nor nonexpressive due to an assigned role in the lexicon. Regardless, suppletive forms are susceptible to analogical levelling. In Lass' terms, the final option – exaptation – is the assigning of a conceptually novel function to this junk. A canonical example of exaptation of junk is the loss of grammatical gender in Afrikaans. Gender morphology on attributive adjectives has been co-opted into a new lexeme-specific role (Lass 1990).

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2.1.3. Exaptation in Afrikaans: from Syntactic Agreement to the Lexicon

Afrikaans descends from 17th.C Early Modern Dutch (EModD) spoken by settlers of South Africa. Middle Dutch (MD) had a rich system of adjectival inflections sensitive to morphosyntactic conditioning by number, gender and definiteness (Table 1) (Lass 1990:89). This system eroded by the 17th.C leaving a largely binary opposition of inflectional marking on adjectives. This is familiar from contemporary Dutch: either *–e* or zero morph *-Ø*, predicative adjectives remain unmarked. Regardless of syncretisms causing the merger of masculine and feminine as a single common gender, the alteration is as before rooted in syntactic conditioning of morphology (1), i.e. neuter vs common.

Table 1: Attributive adjectival inflections in M. (Lass 1990:89)

	MASC	NEUT	FEM	PL
NOM	-e	-e	-e	-e
GEN	-(e)s	-(e)s	-er	-er
DAT	-en	-en	-er	-en
ACC	-en	-e	-e	-e

(1) Conditioning factors on attributive adjectival morphology in Dutch
   a. COMMON, INDEFINITE: *een gevaarlijk-e hond* "a dangerous dog"
   b. COMMON, DEFINITE: *de gevaarlijk-e hond* "the dangerous dog"
   c. NEUTER, INDEFINITE: *een gevaarlijk-Ø paard* "a dangerous horse"
   d. NEUTER, DEFINITE: *het gevaarlijk-e paard* " the dangerous horse"

<div align="right">(ex.23, Norde & Trousdale 2016:187)</div>

The Afrikaans system emerged from this *-Ø /–e* alteration. In early Afrikaans grammatical gender collapsed. Neuter determiner *het* and common determiner *de* were discarded for generic *die*. The loss of gender removed the main trigger for inflection, meaning speakers had fewer cues of how the alteration was encoded in the grammar. Lass (1990:90-95) argues that the forms were rendered functionless but somehow survived. Then followed a seeming free-for-all in inflection on attributive adjectives; both endings competed to premodify neuter and common nouns (2). Lass describes this distribution as near

"random", considering it evidence of a junk stage. It is more likely that, lacking informants, "random" reflects speakers' competing but regular analyses.

(2)   a.   **Target form:**

een kleyn   stuck

a   small-∅   piece.NEUT

'a small piece'

        b.   **Deviant form**:

een kleyn-e stuck

a   small-e piece.NEUT

'a small piece'

In cases where primary conditioning factors (PCF) are removed, here grammatical gender, we expect leftover morphology to disappear from speakers' grammar. Instead, "random" alternation gave way to a coherent and elaborate system for the selection of –*e* or -∅. In brief, monomorphemic adjectives are unmarked -∅ (3a,b), while morphologically complex adjectives take –*e* (3c,d). Lass (1990:95) classifies this exaptation, as –*e* acquired a conceptually new role unrelated to syntactic conditioning, but instead to the morphology of adjectives. Exceptions to this rule exist in some monomorphemic adjectives taking –*e* in attributive position; these are sonorant+/d/ combinations, e.g. *vreemde* "strange", and alternating stems with long/high vowel + /d/ and /x/ combinations, e.g. predicative *droog* vs attributive *droë* "dry" (Norde & Trousdale 2016:190).

(3)   a.   'n belangrik-e   kriterium

               a important-e   criterion

               'an important criterion'   [Wikipedia]

        b.   die belangrik-e rol

               the important-e role

               'the important role…'   [Lubbe & Plessis 2014:21]

        c.   'n groot   presentasie

               a large-∅ presentation

               'a large presentation'   [Lubbe & Plessis 2014:97]

    d.   die groot   groep

         the large-*Ø* group

         'the large group'   [Lubbe & Plessis 2014:28]

However, the latter alternation exists in both Dutch and Afrikaans, e.g. *dood /dooie* (dead), and therefore represents a historically-constant morphophonemic rule. The other exceptions are likely some extension. Hence, the conditioning factors of all attributive adjectives in modern Afrikaans are the morphological structure of the adjectives themselves.

In sum, the PCF for inflection on attributive adjectives went from phi-features to the adjectives themselves conditioning variation (Lass 1990:91). For Lass, the PCF now resides in a different grammatical domain: the lexicon. This is where Lass assumes that "morphophonemic alterations are lexically encoded" (p95). Synchronically this complements a minimalist account, where morphology is dictated at the syntax-morphology interface. If the conditioning of the *-e/-Ø* alteration is not phonological conditioning at PF, then the alteration must include lexically encoded information in the lexicon instructing the addition of marking at PF. However, we cannot talk about change from one domain to another, as minimalist phi-features are also encoded in the lexicon. We can conclude so far that exaptation is a response to breakdown in the wider system. However, the mechanics of Lass' (1990) exaptation remain mysterious.

2.1.4. *Lass' (1997) Revised Approach*

Lass' (1990) approach, while a valuable empirical contribution, produces many questions. For instance, if exaptation in evolutionary biology entails layering of functions on already functional genetic material or spandrels, then why is linguistic exaptation limited to so-called junk? Moreover, junk is a highly problematic concept for generative theories of change based on CLA. Consequently, we must revisit the nature of junk. Neither do we know how nor where the human language making capacity can exapt new functions from. Lass' (1997) later treatment attempts to answer these questions. I shall briefly sketch out Lass' proposal for the exaptation of non-junk in §2.1.4.1 before moving on to the other questions.

2.1.4.1. *Exaptation of Non-Junk*

Exaptation in evolution affects two types of genetic material: already functional adaptations and spandrels; "junk" does not factor. Vincent (1995) disputes linguistic "junk" on theoretical grounds, an argument I revisit in section 2.2. However, Vincent demonstrates that exaptive changes can involve material still partially retaining its function. For example, Latin marked accusative plural nouns with –*s* and nominative ones with –*i*; once case was rendered redundant by fixed word order, Western Romance languages reanalysed the former as a general plural marker, while Eastern Romance reanalysed the latter (Vincent 1995:435)[1]. Therefore, functional material can be exapted if only one of several conditioning factors are removed. Lass (1997:318-324) expands his model to also include non-junk:

> 'all is not junk. Exaptation does not presuppose (biological or semiotic) emptiness' of the exaptatum. […] Useful' (or at least not marginal, decaying) features can be exapted too…'

(Lass 1997:318)

A qualifier for non-junk exaptation is the Middle High German (MHG) morphologisation of historically umlauted vowels in plural contexts, i.e. i-mutation (Lass 1997:319-320). Root vowels originally underwent phonological conditioning triggered by -/*i*/ in the plural of *i*-stem nouns (4a). Then -*ə* replaced –*i* due to weakening of final syllables which obscured phonological conditioning. The umlauted vowel was then exaptively reanalysed (morphologised) as a plural marker (4b) and spread to other nouns historically belonging to non-umlaut-inducing stem classes (4c) (Sonderegger 1979:303-307).

4.   a. **stage 1:** phonological umlaut

   gast (guest) vs *gest-i* (guests)

b. **stage 2: Exaptation to** morphosyntactic umlaut

   gast vs g-**e**-st-e

c. **Stage 3**: Analogical extension to nouns in other stem classes

   -   *boum* (tree) vs *boum-a* (trees)

   -   *boum* vs *boum-e*   **Bridging context**

   -   *boum* vs *B-**äu**-m-e*

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[1] This is an oversimplification but appropriate to illustrate the point.

This exaptation comprises a change from phonology to morphology, presumably encoded by features calling for umlaut insertion at PF. Umlaut went from a by-product of the phonology to being co-opted for another function after its PCF disappeared. Therefore, *i*-umlaut was a spandrel and modern umlaut an exapted spandrel, a position taken by von Mengden (2016:154-155). However, biological and linguistic spandrels are a clumsy comparison as the loss and subsequent opacity of original PCFs catalysed exaptation; there is no layering effect and the impetus of the spandrel are removed, unlike in biology.

In sum, so far exaptation seems capable of change straddling grammatical domains. Indeed, if junk and non-junk can be exapted, then the notion of junk becomes useless. It is instead desirable to determine what all exapted structures have in common. The emerging common factors in exaptive change, giving rise to both plural umlaut in MHG and the $-e/-\emptyset$ alteration in Afrikaans, are the loss of one or more PCFs which render a given form totally opaque in relation to its original function, i.e. children cannot successfully acquire these structures. Therefore, a common theme in exaptation is diachronic breakdown leading to synchronic opacity in CLA.

2.1.4.2. *Bricolage of detritus*

Lass' (1997) considers grammar separate from the speaker. It can maintain the detritus, i.e. "junk" of forms from earlier productive systems in the same way that organisms contain vestiges. His mechanism for exaptation is within this context. For Lass, language building mirrors the building of biological systems via a *bricoleur*; that is, via a process of imperfect replication (*bricolage*). Language is an apparently tolerant system able to support junk (Lass 1997:316). Morphology is most clearly subject to exaptive changes because it is often conditioned by syntactic, semantic and phonological factors; but his approach means that all types of material could be exapted.

Lass' (1997:324) bricolage-based theory discounts cognitive and social factors relevant in language change, relegating them to synchronic language use. However, both social (Labov 1989, 2007) and cognitive factors (Lightfoot 1999, R&R 2003) are established factors in CLA and language change. The replication of meaning from one generation to the next required for any functional innovation is inseparable from cognition in all generative approaches. Consequently, Lass' (1997) separation of diachrony and synchrony is an awkward position which I abandon.

In conclusion, exaptive changes exemplify an interesting response to systemic breakdown in language, meriting our attention. These breakdowns appear to universally include the loss of a PCFs. However, we must explore beyond Lass' (1990, 1997) approaches to explain exaptive changes accounting for the role of cognition in language processing and change. In this way we can determine the true nature of exaptive change; that is, and how and why it occurs. Consequently, Lass' (1997:316) call for a theory of meaninglessness in historical linguistics is unheeded, and instead we require a theory of how coherent meaning is produced when the input is no longer sufficient to reconstruct the target grammar.

2.2. Refining Exaptation

Exaptation appears an all-powerful creator, assembling order from chaos. Furthermore, most scholars have radically varying interpretations of exaptation. Some conclude that it is purely epiphenomenal explicable by other means (Joseph 2016, Jensen 2016, Vermandere & Meul 2016, de Cuypere 2005); I follow this camp. While exaptation is an attractive addition to a taxonomy of changes, it represents a collection of scenarios leading to radical reanalyses within and between domains. I attempt an account in minimalist terms. The fundamental assumption in the current approach considers CLA central to all change, and thus views diachrony and synchrony as an inseparable continuum. Exaptation has received limited attention from a generative perspective, with the exception of Vincent (1995), Los (2013) and Willis (2010, 2016). I now turn to a brief analysis of the key parameters of exaptation. This section aims to deconstruct exaptive changes to their most fundamental parts, enabling us to exclude taxonomically motivated epiphenomenal accounts in order to elucidate the acquisitional nature of such changes in the following sections.

2.2.1 *Parameters of exaptive change*

2.2.1.1. *The nature of junk: the interface problem*

"Junk" is a controversial notion. While some maintain that junk can exist even if exaptation doesn't (Joseph 2016), others have abandoned it. Norde (2009:117) calls it a *contradictio in terminis*, as junk morphemes without meaning should be indistinguishable as morphemes and thus unexaptable, a position taken earlier by Vincent (1995). Willis (2010, 2016) has instead argued, in acquisitional terms, that 'obsolescent' material is vulnerable to exaptive reanalysis. That is, factors may combine to obscure the target function from the acquirer. Vincent (1995:436) employs the term 'partially empty'.

The above discussion has argued that exaptation does not include a real "junk stage". Instead, exaptive changes are a response to the breakdown of PCFs, which leave the target model opaque. Vincent's (1995) *partially empty*, while preferable to junk, describes an inherently diachronic notion; however, nothing can be synchronically 'partially empty' if integrated into the I-Language. However, structures might become gradually marginalised and eventually become opaque to the next generation, i.e. Willis' (2010, 2016) obsolescence.

Furthermore, genetic detritus and junk linguistic material are not analogous in an approach based on CLA and cognition. While analogy with genetics is attractive for the imperfect replication of language, it is inappropriate. CLA is an indirect cognitive process, while DNA replication is a direct chemical process as noted by Kirby (1999:224) '[…] whereas grammars have to be reconstructed every generation through learning or acquisition, DNA sequences do not (they are physically passed on and copied).' Therefore, CLA does not entail the endogenous duplication of one grammar, take or minus some bits, via copying. Instead, CLA comprises, in the first instance, the adult speakers' production (E-language) based on an internal grammar (I-language) and, in the second instance, the attempts of the child to decode the PLD from those speakers, and to subsequently construct a coherent grammatical system.

This approach is illustrated by Andersen's (1973) model (Figure 1). The child's acquisitional device is responsible for change. This comprises the decoder and constructer; an important distinction as evident in children acquiring language, where it is well known that comprehension can precede production or vice versa. I revisit the mechanics of CLA in language change explicitly in §3.
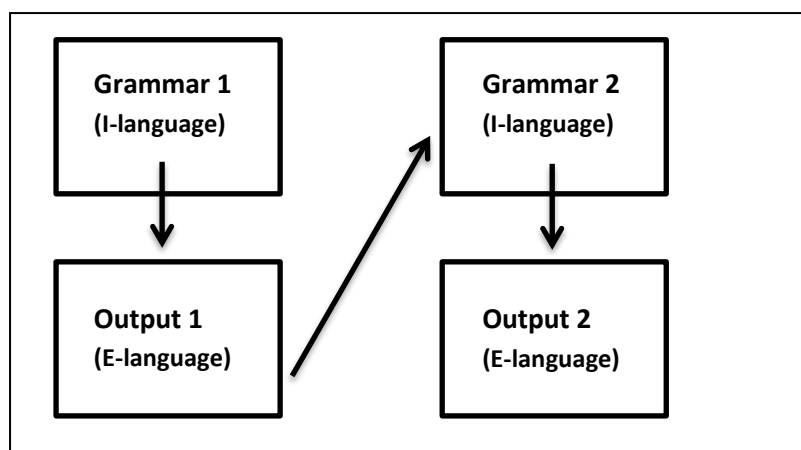
Figure 1: Adapted from Andersen's model of language change (1973)

Consequently, "junk" cannot exist. Genetic vestiges survive in organisms because they cannot be eliminated; but we cannot explain how junk is acquired. Vincent (1995:435) considers notion of linguistic junk incoherent because 'languages are sign systems and no part of a sign system is without function, even if we […] have not yet worked out what the function […] is'. Moreover, Willis (2016:202) states the following:

'It is doubtful that an item that has no function is acquirable: an earlier function must be retained until such time as speakers have innovated a new function, or else the linguistic item disappears. At the very least, speakers need some rationale for an item's distribution, and any such rationale amounts to a function.'

In sum, "junk" and functionlessness constitute an acquisitional paradox. Following Willis (2010, 2016) I choose to classify exaptable material as obsolescent; however, as argued above, I place acquisitional opacity at the heart of obsolescence in exaptation.

2.2.2. *Functional and conceptual novelty*

This section aims to assess conceptual novelty as a parameter of exaptive change. Lass (1997:320) states that 'in a real exaptation the function served by the innovation may either be quite a new one, or a very different version of an old one'. This mirrors biological exaptation which entails the 'opportunistic co-optation of a feature whose origin is unrelated or only marginally related to its later use. In other words (loosely) a 'conceptual novelty' or 'invention'' (Lass 1990:80). This suggests that conceptual novelty need not be exclusively

the invention of a completely new category in language, but may relate somehow to its former function.

Simon (2010:53) argues that the only parameter is the introduction of a previously non-existent category into the grammar. He believes that the emergence of German 2nd person honorific pronoun *Sie* from 3.PL pronoun *sie* demonstrates exaptation, as it represents the introduction of a grammatical category "respect" into the language. However, the additive re-use of 3.PL *sie* as 2.SG.PN-HON has the same syntactic behaviour, i.e. plural verb conjugation (e.g. *Sie machen* " you do"). Moreover, the T/V distinction in German requires a good deal of pedagogical training (Bausinger 1979:2) well after children have acquired 3.PL *sie* and 3.SG.FEM.ACC/NOM without problem. This argument is inadequate to prove that complete conceptual novelty can be the only parameter of exaptation. Simon's (2010) approach cannot inform us how the child is able to produce coherence from an impoverished system.

Moreover, Lass (1997:319) holds that '[e]xaptation is conceptual invention, not extension […] in accordance with a 'target' or a 'model'. In exaptation the 'model' itself is what is new'. However, exaptation in Afrikaans seems to have included a partial model. The new adjective-specific conditioning of –*e*/–∅ appears some extension of the historically constant –*e*/–∅ attributive and predicative alternation pattern of adjectives like *dood* "dead", e.g. *dooie*+N vs [N [V+*dood*]], whose alternation is presumably encoded with the lexical entry. If correct, the conceptual novelty of the new complex vs simple morpheme distribution had some loose model. Thus, taking a cognitive position, I assume that the language acquisition device regularises incoherent PLD by default. It does not care if there is a clear, partial or non-existent model; it creates the model by probing for scraps of coherent material and assembling them together to create a novel pattern. Experimental evidence by Hudson-Kam & Newport (2005) supports this position, showing that children form regularity in far more innovative ways than adults.

The primacy of complete conceptual novelty is only tenable if we discard obsolescence and opacity. Conceptual novelty alone creates a circular notion inseparable from grammaticalisation. Moreover, it is undesirable as it focuses on the product and not the process, which is by definition the result of its parts; That is, obsolescent/opaque PLD and a cognitive interface which regularises incoherent material. When confronted with such material, learners either assign an existing grammatical function, posit a new one (Willis 2016:204), or dump it entirely. If regularisation is impossible, it will discard the material. Conceptual novelty is therefore only important as an item-specific, and not language-wide, notion. Therefore, following of Willis (2016:204), exaptation in morphosyntax invariably

includes the reanalysis of a particular surface form from coding an obsolescent morphosyntactic feature to coding an innovative and unambiguous feature, conceptually novel with regard to the previous function.

In conclusion, to understand the underlying nature of exaptation, we must address the question: how does the human language making device produce a coherent grammar without coherent input? This question is inherently related to the mechanics of CLA.

2.3. Exaptive Changes in the Syntax

This thesis abandons exaptation as a foundational process of language change as a consequence of a) rejecting Lass' (1990, 1997) notions of junk and bricolage, and b) concentrating instead on cognition in CLA. In short, exaptive change is a response to obsolescent data which has somehow been refunctionalised. However, exaptation is a useful term, which helps the diachronic linguist address exceptional changes in exceptional circumstances of breakdown. Such examination of language change can contribute more widely to a theory of language and language change.

Indeed, Lass (1990) is not alone in noticing that old language material is susceptible to re-use involving remarkable functional leaps. Croft (2000) and Brinton & Stein (B&S) have proposed alternative approaches. While I do not adopt their theories, I shall briefly review them in order to further determine the most fundamental commonalities between all such changes. Moreover, these approaches highlight that we cannot limit investigation to morphology or morphosyntax. These studies demonstrate that syntactic structures are also liable to exaptation.

2.3.1. Croft's (2000) Hypoanalysis

Croft (2000) attempts to explain exaptation via *hypoanalysis,* as part of his theory of language and language change. This entails the recategorisation of linguistic items from outside the syntax into the syntax. Croft (2000:126) argues that semantic/functional properties can be reanalysed as properties of syntactic units, which creates new meaning.

This accounts for item-specific conceptual novelty. However, Croft believes linguistic selection to be based on social factors in some interaction with a vaguely defined Universal Grammar (UG). While Social factors do affect CLA and children are sensitive early on to sociolinguistic variation (Labov 1989, 2007), this cannot detract from the primacy of

cognitive factors. Furthermore, hypoanalysis belongs to a taxonomy with which Croft explains language change: *hyperanalysis, hypoanalysis, metanalysis* and *cryptanalysis*. Hypoanalysis represents form-function reanalysis entailing enlargement of function but not change in form. This works for exaptations like MHG *i*-mutation being exapted as plural marking, i.e. from phonology to syntax. Nonetheless, the stipulation of enlargement contradicts the definition of exaptation followed so far; unless we accept "junk", which comprises change from no function to a function. We have, however, established the undesirability of this position. Since I do not employ Croft's (2000) overall theory[2], I shall not adopt hypoanalysis. In sum, the breadth of hypoanalysis reflects the language acquisition device's ability to make good data from bad data in the face of obsolescent PLD.

2.3.2. Functional Renewal (Brinton & Stein 1995)

Functional renewal proposed by Brinton & Stein (1995) (B&S) provides an important contribution to the exaptive spectrum of change. Here, older and crucially marginalised syntactic structures are shown to make resurgences with renewed function, which may be completely new, previously lost or declining (p.34). B&S (1995) take several clause structures involving word order alterations to show how archaic orders have gained functional novelty in respect to their older functions or newer replacements. A notable example is the functional renewal of an XVS inversion comprising a fronted locative adverbial phrase, intransitive verb and nominal subject in ModE (6a,b), known as LOCATIVE INVERSION (LI) (Coopmans 1989, Rizzi & Shlonsky 2006), e.g. *down the hill rolled the egg*. In OE and ME XVS inversions were generally unmarked normal operations in the V2 system. Inversions greatly reduced from OE and ME to very limited contexts in ModE, e.g. LI. As SVO/SVX order marginalised XSV, orders such as LI became more marked, becoming obsolescent or falling away entirely. For B&S (1995:40-43), the rise of LI in 16th.C EModE and the development of a series of new constraints constitute the functional renewal of V2 inversion as a focus-marking structure. Explicitly, LI is restricted to copula and intransitive verbs in the present or past simple tense and is generally ungrammatical with auxiliaries. These restrictions disallow compound tenses, limiting LI to bifocal structures. Subject pronouns cannot undergo inversion (6c), while nominal/phrasal subjects can. The focused nominal subject appears sentence finally according to the *principle of end weight*: old

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[2] See Lightfoot (2002:409-413) for a summary of reasons against Croft's framework.

information first, new information last. In the functionalist approach employed by B&S, the resurgence of a marked LI structure represents renewal from a syntactic to a discourse strategy at the information structural level (IS).

(6)   a.   In comes John **LI**

        b.   John comes in **Canonical**

        c.   In comes he*   (adapted from B&S 1995)

However, B&S's (1995) analyses are incompatible with much generative evidence showing that LI cannot be a V2 structure. In contemporary LI the verb remains in vP (Radford 2004:354) and does not move to a V2 diagnostic position in C (Holmberg 2015). Moreover, the fact that this construction is limited to locatives casts doubt on a purely discourse related analysis; the topicalisation of adverbs, amongst other elements, in V2 sentences is a well-known operation in OE and ME. It is more plausible that 'renewal', i.e. exaptation led to a conflation of discourse and locative syntactic features creating LI in EModE, an attested operation in ModE (Rizzi & Shlonsky 2006). While LI does exhibit exaptive behaviour in terms of its specificity to locatives and XVS order, it is not exaptation in terms of new discourse strategies or renewal of V2. It is instead more likely the maintenance of an obsolescent discourse strategy boosted by the introduction of a new PCF: the actuation of locative features allowing LI as a syntactic operation. This can count as exaptation if shown to be a response to breakdown, as the surface order resembles systemically opaque orders. Therefore, syntactic exaptation requires rigorous treatment within a generative-minimalist approach, which has yet to address the phenomenon outside morphosyntax (Willis 2010, 2016). I shall revisit the diachrony of LI in §4 as a test case using minimalist and cartographic architecture. This case study will be based on the hypothesis that the rise of LI presents an innovative response to the breakdown of V2.

2.3.3. Intermediate conclusion

In sum, such change in syntax appears to mirror exaptive changes in morphosyntactic categories. Yet, we lack a minimalist approach to the former. As shown by Vincent (1995), the loss of case as a primary syntactic conditioning factor for Romance plurals led to the primacy of another, previously less important, syntactic factor: ([Case] > [Number] > [Gender]) → ([Number] >[Gender]). In short, form to function mapping became opaque and,

left with no other option, acquirers reorganised the system. Likewise, Willis (2016) shows how the distribution of *was* vs *were(n't)* in some colloquial English varieties has been largely reassigned to negative and affirmative polarity (7). In PDE number distinctions in verbal morphology have become obsolescent and root alternating *be* has become especially isolated. Polarity alternations are common on other modals and auxiliaries with impoverished number marking, e.g. *can/can't, will/won't*. Willis (2016) argues that children are unable to reconstruct number features on the verb and consequently exploit evidence from other auxiliaries/modals, thus extending a polarity distinction and positing a polarity feature for *was/were(n't)*. This case shows item specific conceptual novelty as a response to obsolescence, i.e. opacity.

(7)   a.   The apple was on the table (affirmative polarity)
        b.   The apple weren't on the table (negative polarity)

If reassignment of function is possible at an item-specific level where the assignment of morphology is simply assigned by a different syntactic conditioning factor, the same should be possible for grammatical derivations, i.e. clause structures. The evidence presented by B&S (1995) shows that exaptive change is possible in syntax, at least from a functionalist perspective. The commonality of contexts which give rise to exaptive changes across grammatical domains show that obsolescence is not domain specific. Consequently, the entire grammar is susceptible to co-option when PCFs disappear. I thus conclude that exaptive changes are inherently related to obsolescence, a term covering various factors leading to acquisitional opacity. Opacity is not limited to impoverished morphosyntactic material (see Willis 2016) but is also possible in purely syntactic environments. An overly complex taxonomization of the phenomenon itself is unhelpful as the key linguistic process we wish to investigate is how the human language acquisition device is able to assign item specific conceptual novelty to obsolescent material. Lastly, owing to the primacy of CLA and cognitive factors, exaptation simply reflects the interaction between PLD and cognitive processes. Hence "exaptation" is epiphenomenal. I now turn to an explicit investigation into exaptive change and its workings within a generative minimalist framework.

3. LANGUAGE CHANGE FROM A MINIMALIST PERSPECTIVE

This thesis differentiates itself from preceding studies as it employs minimalist insights from the nature of exaptation in morphosyntax, building on work by Willis (2010, 2016), in relation syntactic change, such as Brinton & Stein's (1995) "functional renewal" of LI. The latter resembles morphosyntactic exaptation, in that obsolescence and item-specific conceptual novelty appear integral to exaptation. In the following sections, I present diachronic models in which to frame the exaptation of syntactic structures. Furthermore, following minimalist assumptions, I assume that any account of exaptation must be rooted in CLA (Lightfoot 1999, Meisel 2011, R&R 2003). In this section I clarify an approach towards parametric variation and change, and review the mechanics of CLA in language change. Moreover, I introduce parametric change as part of an extended hierarchy within the generative emergent approach (B&R 2012, forthcoming). The goal, therefore, is to fit exaptive changes in syntax and morphosyntax into a unified and acquisition-based theory of (morpho)syntactic change. Moreover, this section aims to make consistent predictions about which material is likely to become opaque. I assume familiarity on the part of the reader with the basic notions of minimalist architecture based on Merge and Agree (Chomsky 1995).

3.1. Generative Assumptions on the Structure of Language

The current approach goes beyond traditional generative approaches to diachronic syntax (Lightfoot 1979, 1999) and assumes Chomsky's (2005) three factor model of language design:

(9)
      i.   The innate endowment: Universal Grammar (Factor 1).
     ii.   Experience: the Primary Linguistic Data (PLD) (Factor 2).
    iii.   Non-domain-specific cognitive optimisation principles (Factor 3).

Following B&R (forthcoming) and Biberauer 2016, we assume a very limited natural endowment from UG. This does not entail a rich *a priori* endowment of all formal, phonological and semantic structures, as argued for by Chomsky (1981) and Lightfoot (1979), which in current thought are shaped largely by formal features in the lexicon. Instead, I consider UG an underspecified repository of only the most fundamental aspects of language for the formation of features, Chomsky's (1995) virtual conceptual necessity. One approach,

following Chomsky (2001:10), is to stipulate that acquirers make a 'one-time selection' of underspecified features from possible values in UG. However, I adopt a radical view, following Biberauer (2016) & B&R (forthcoming) which reduces UG to its most conceptually necessary components. On this approach UG consists of Merge, Agree and a skeletal feature template ([uF]/[iF]). These elements then interact with PLD and non-domain-specific cognitive optimisation principles (henceforth third factors) to produce a feature-rich I-language during CLA. This requires less conjecture about the nature of UG. Also following Biberauer (2016), extralinguistic cognitive factors should be given primacy as they shape how humans perceive their experiences and encode them in language, described by Ramchand & Svenonius (2014:185) as a "cognitive proclivity to perceive experience in terms of events, situations, and propositions (with analogous ontologies for other extended projections)". Consequently, all features must be learnt, as must lexemes. This assumption can elucidate the radical nature of exaptive changes; if the PLD changes it is not triggering a different manifestation of a UG-given parameter, but rather triggering a completely different set of evidence for feature construction.

However, the nature of third factors is debated. Moreover, we expect different factors to be at work in general synchronic processing of adult language than during CLA. Explicitly, principles affecting adult language processing form a subset of those mediating CLA. General principles of economy in CLA and thus change also count as third factors, such as van Gelderen's (2011:17-26) 'feature economy principle' which minimizes the semantic and interpretable features in the derivation, or Roberts' (2007:131) 'simplicity preference': 'acquirers prefer to assign the simplest possible structural representations to the strings they hear'. Other third-factor effects include processing cost limitations such as working memory (O'Grady 2012:497). The latter can play a role in the acquisitional order and/or emergence of certain structures as the child becomes able to store and process more information. This is exemplified by the later stage in which the CP is acquired, later than the vP or the DP (Müller & Hulk 2001). Thus, third factors mediate the interaction between PLD and UG during CLA.

These aspects shape an account of how the interaction of third factors can shape exaptive change when limited evidence is available to the child acquiring language. I now turn to a discussion of syntactic parameters in order to elucidate the nature of both diachronic and crosslinguistic variation.

3.1.1. *Parametric variation*

Syntactic parameters represent the locus of crosslinguistic and diachronic variation (R&R 2003, Baker 2008). A modern definition of syntactic parameters is provided by Baker (2008:354) in the 'Borer-Chomsky Conjecture' (BCC).

(8)   The Borer-Chomsky Conjecture: the nature of syntactic parameters
        All parameters of variation are attributable to differences in the features of particular items (e.g., the functional heads) in the lexicon.

Parameters have been argued to embody those elements of syntax which are not automatically available from UG, but instead require activation during CLA (Meisel 2011:123). In light of Biberauer's (2016) skeletal view of UG, learnt features are the basis of parametric variation, and varying combinations of these features create different parametric values. Therefore, we must account for exaptation in syntax and morphosyntax in terms of diachronic parametric variation. Nonetheless, the effects of a parametric change like the exaptation of the *was/weren't* polarity distribution (Willis 2016) have a less pervasive effect on the grammar than the loss of gender agreement in Afrikaans, or word order change. Consequently, some form of parameter hierarchy can shed light on the reach of individual parameters and their diachrony.

In terms of the BCC (Baker 2008), Parameters with more pervasive effects across the grammar are thought of as macroparameters, e.g. parameters affecting underlying SVO/SOV word orders (Tsimpli 2014). Less pervasive parameters are generally considered microparameters; however, if BCC is correct all macroparameters can be recast as a set of microparameters (Baker 2008:360), and microparameters are products of a particular feature set. Consequently, change in the feature values of particular constructions entails parametric change. Nonetheless, this distinction fails to account for differences between very broad parameters settings, e.g. underlying word order, less broad but pervasive general patterns, e.g. V2; category specific phenomenon, e.g. auxiliary raising in English; and very isolated patterns, e.g. *good enough* vs canonical *very good*. B&R (2012) and Biberauer et al. (2014) propose a typology distinguishing the overall effects of parameters on the grammar, which allows us to better understand the course of historical parametric change:

For a given value v$_i$ of a parametrically variant feature F:

a. Macroparameters: all heads of the relevant type, e.g. all probes, all phase heads, etc, share v$_i$; e.g. Head Final vs Head Initial.

b. Mesoparameters: all heads of a given natural class, e.g. [+V] or a core functional category, share v$_i$: for instance, V2, Null-subjects.

c. Microparameters: a small, lexically definable subclass of functional heads shows v$_i$: T-to-C modal auxiliary raising in English.

d. Nanoparameters: one or more individual lexical items is/are specified for v$_i$: e.g, verb initial conditionals with *should, were, had* "had I known…"

(adapted from Biberauer et al. 2014:109, B&R forthcoming)

Finally, if parametric change amounts to feature changes on functional heads, and functional heads may be phonetically empty, i.e. null heads such as null D (Longobardi 1994) or null complementisers (Bošković & Lasnik 2003), then null heads could be susceptible to obsolescence and acquisitional opacity. Consequently, the exaptation of null heads is a real possibility; yet it has remained unaddressed in the literature. Moreover, if the acquirability of null elements relates to other overt syntactic operations (e.g. constituent movement etc.), which provide evidence for the null element (Friedemann & Rizzi 2000:5-7), then changes in parameters for those operations represent source contexts which can obscure the evidence for null heads. This could lead to their exaptation. That is, altered evidence could theoretically produce an altered feature set on a null head or the actuation of one. I investigate this prospect in §4.

3.1.2. Third Factor Driven Parameter Setting

In a generative approach to language, the construction of language by children is reliant on the input they receive from adults, i.e. PLD, and language change proceeds via the imperfect replication of adult grammars by children. Therefore, a theory of parametric change - exaptation included – relies on a theory of acquisition. An account of the acquisition of

parameters and timing effects in CLA will allow us to make sound predictions about exaptive change at the end of this subsection.

Parameters are the locus of syntactic variation and change. Therefore, we must show how they are set. I consider parameters to be independently defined by certain PLD: TRIGGERS (Gibson & Wexler 1994). However, this is does not rely on activation of pre-set UG-defined parameters (See Lightfoot 1999).   R&R (2003:15) propose the following definition of a parameter expression (10) and trigger (11).

(10)   Parameter expression:

A substring of the input text S expresses a parameter p_i just in case a grammar must have p_i set to a definite value in order to assign a well formed representation to S.

(11)   Trigger:

A substring of the input text S is a trigger for Parameter p_j if S expresses p_j

Since I assume a skeletal UG, third factors mediate the PLD without extensive recourse to UG. We have seen that exaptation appears to create order from inconsistent PLD. Therefore, we must conclude that third factors can mitigate opaque PLD via general optimization, thus creating conceptual novelty out of opacity. B&R (2012, forthcoming) suggest that two third factors specifically act as acquisition strategies, interacting during CLA to set parameters. These are Feature Economy (FE) and Input Generalisation (IG) (defined below). Together these factors create an acquisitional principle to "make maximal use of minimal means" (B&R 2012).

Feature Economy (FE):

Given two structural representations R and R' for a substring of input text S, R is less marked than R' iff R contains fewer formal features than R'

Input Generalisation (IG):

If a functional head F sets parameter P_j to value v_i then there is a preference for similar functional heads to set P_j to value v_i.

(Biberauer et al. 2014:110)

Overall, children prefer to posit the simplest possible feature representation from the input they receive, i.e. as few features as possible or even none at all. However, IG exploits those features triggered by the PLD, generalising them as much as possible. IG can then be moderated by unambiguous evidence in the PLD which provides evidence against maximum feature generalisation (B&R 2012:268-70). For example, children receive evidence that English verbs remain in *v*P, and consequently generalise that all verbal heads remain there; then upon evidence of features allowing auxiliary verbs to move up to T and C, children will modify the rule so that only lexical verbal heads remain in *v*P. This creates a feature parameterisation pathway of none>all>some. These acquisition strategies are those dictating diachronic change. However, other third factors in cognitive development, e.g. working memory, and the acquisitional complexity of a parameter also mediates the order of acquisition. I now turn to explore this as it can provide insight into those structures most susceptible to exaptation.

3.1.3. Timing Effects on Acquisition and Opacity

Tsimpli (2014) shows that different parameters are acquired at different stages, leading to a distinction of 'early, late or very late'. 'Core' macroparametric values in narrow syntax, such as directionality (SOV/SVO), V2 and Null Subject are acquired early. This is because they are semantically vacuous and require less effort at the interfaces. However, the emergentist approach considers parameters such as V2 to be mesoparameters. Indeed, Chomsky's (2000) notion of the duality of semantics (thematic + discourse/scopal meaning) suggests that movement creates extra meaning, requiring more interaction at the interfaces. This predicts that a mesoparameter such as the V2 constraint, involving movement of the finite verb to a higher position, should be acquired later than macroparametric base word orders. This is correct; very young speakers of V2 German varieties first produce SOVfin structures in root clauses before these give way to consistent V2 at around 2;6 years of age, shown by Penner (1992) for Bernese Swiss German. Moreover, another factor delaying the full acquisition of V2 is the acquisition of finiteness and inflection entailing more processing at the syntax-morphology interface, at least for German (Gawlitzek-Maiwald et al. 1992).

Late and later acquired microparametric values entail more interaction with 'semantics, pragmatics and language-external cognitive resources' (Tsimpli 2014:286), i.e. third factors. Therefore, the acquisition of microparametric syntactic operations like passivisation, or wh-movement occurs late. Finally, microparametric values concerning overt

morphosyntactic functions such as case agreement and phi-feature-marking morphology are predicted to be acquired later than movement operations as they require more explicit evidence and are susceptible to ambiguity via syncretism. In short, non-core parameters require more evidence and the quantity of that evidence is also moderated by its quality.

Consequently, the functional transparency of morphology and syntax directly affects the timing of acquisition of late and very late acquired parameters, which can lead to cross-linguistic variation in the timing of acquisition. Late and very late parametric values expressed via ample unambiguous evidence are more likely to be acquired earlier, while parameters with weaker evidence, i.e. more opaque ones, are liable to later acquisition. Regarding FE, the child prefers to not to posit features until a crucial amount of unambiguous evidence has been provided. For instance, this is evident in discrepancy in the timing of the acquisition of Greek and Dutch gender agreement between determiners and nouns (Tsimpli 2014, Tsimpli & Hulk 2013). Greek gender tends to be fully acquired early by age 3, as PLD evidence is unambiguous (Table 2). In Dutch, however, acquisition is very late and only complete by age 6/7 as PLD for gender is highly ambiguous (Table 3), and only DEF.DET.NEUT *het* avoids syncretism.

Table 2: Grammatical Gender in Greek

Noun Gender	Definite article	Indefinite article
Masculine	*o*	*enas*
Feminine	*i*	*mia*
Neuter	*to*	*ena*

Table 3: Grammatical Gender in Dutch

Noun Gender	Singular		Plural
	Indefinite	Definite	
common	*een*	*de*	*de*
neuter	*een*	*het*	*de*

The above discussion allows us to make predictions about exaptive change in terms of CLA. We can predict that those parameters requiring more evidence, and thus acquired later, are especially susceptible to exaptive change, if the already challenging PLD is further disturbed. This may take the form of catastrophic syncretisms that remove the ability to

acquire gender or any other category. Indeed, this is evident in the exaptation of gender marking in Afrikaans, which was based on the Dutch system up until the loss of *het* and *de* in favour of *die.* Indeed, these articles are the primary triggers for children to acquire gender in Dutch (Tsimpli & Hulk 2013). Furthermore, it is established that morphosyntactic systems with rich morphology such as Greek and Spanish facilitate the early acquisition of gender and case, where relevant. MD had a much richer system than Modern Dutch (ModD), which has a richer system than Afrikaans. Therefore, we can safely assume that gender was acquired earlier in MD; and we know gender is acquired late in ModD*,* and became unacquirable in 18th.C Afrikaans.

This observation allows us to predict that the later and very late acquisition of features by subsequent generations will facilitate either the loss of those features altogether or their refunctionalisation with co-opted functionality. In light of B&R's (2012) parameter hierarchy, CLA and the order of acquisition, we can say something definitive about the nature of the obsolescence precondition in exaptive change. In diachronic acquisitional terms, obsolescent constructions are likely to be acquired later and later, due to higher computational complexity and more obscure evidence. Moreover, when the PLD becomes insufficient for the child to reconstruct the parametrized values of obsolescent constructions present in adults' E-language, acquisitional opacity represents genuine impetus to innovation whereby the child either loses or refunctionalises forms or structures.

3.2. Syntactic Change

We have now made some clear predictions about the nature of exaptation and timing effects in CLA. I shall now describe the mechanisms of (morpho)syntactic change based on Harris & Campbell's (1995) (H&C) model of syntactic change. This is useful for two reasons. It allows us to draw a distinction between change based on ambiguity and opacity as catalysts of change; the latter can be considered a source context for exaptive change. Moreover, it provides us with a straightforward way of approaching syntactic and morphological change without becoming burdened by taxonomies. I then summarise a minimalist conceptualisation of syntactic change according to R&R (2003) related to an emergentist multi-layered approach to parameters. This will allow us to better assess the diachronic behaviour of exaptive changes within parametric terms.

3.2.1. *Mechanisms of Syntactic Change*

I adopt the general framework of syntactic change suggested by Harris & Campbell (H&C) (1995). This approach reduces syntactic change, and thus parametric change, to three fundamental "mechanisms": 'reanalysis', 'extension' and 'borrowing'. Following Deutscher (2001), I also adopt the same assumption for morphological change, providing consistency across related domains. The first two of these mechanisms relate to the strategies used by children to make sense of their PLD, while 'borrowing' is an oversimplification better explained by psycholinguistic dominance (see Winford 2005). In short, H&C's borrowing is not a mechanism itself but reflects altered PLD containing "exotic" elements subject to the same three factors of language design as any other input. It is therefore excluded from the discussion. Nonetheless, contact is known to motivate parametric change (Meisel 2011). This section aims to incorporate exaptation into this framework.

3.2.1.1. Reanalysis

Reanalysis is 'a mechanism which changes the underlying structure of a syntactic pattern and which does not involve any immediate or intrinsic modification of its surface manifestation' (H&C 1995:61). This includes changes in constituency, hierarchy, category, grammatical relations and cohesion.[3] In our terms, reanalysis is variation in the acquisition of given features of a feature set from one generation to the next. H&C (1995) argue that reanalysis either produces a completely new analysis, i.e. feature set, (innovative reanalysis) or draws on pre-existing elements of the language in a new context (preservative reanalysis). H&C's discussion does not address features; however, we might think of the former as the introduction of formal features drawing on the semantic and pragmatico-discourse domains, to which syntax is otherwise blind. Preservative reanalysis instead draws on features already in the syntax via redistribution, presumably based on unmoderated IG. In these terms, Willis' (2016) *was/weren't* distinction can be thought of as such, as [uPOL:NEG] is a copy from an [i:NEG] on an existing Neg head e.g. *not* (p.214), which creates a new Agree relationship. These are both relevant to exaptation as they apply to item-specific conceptual novelty.

Moreover, since exaptation constitutes the co-option of form with new function (a new feature set) I follow Willis (2010:171, 2016:204), who defines exaptation as a

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[3] Cohesion refers to the 'status of a linguistic sequence as a fully independent word, a clitic, an affix or unanalysable part of a larger unit.' (H&C 1995:63)

subcategory of feature/category reanalysis. That is a 'type of reanalysis that involves some morphosyntactic item being assigned to express a morphosyntactic feature (N,V,D,C, Person, Number, Polarity) different from the one assigned to it in the ancestor (model) grammar' (cf. H&C 1995:61, Langacker 1977). In §4, I shall apply this approach to the diachrony of purely syntactic operations.

Why then is it useful to talk about exaptation at all? The answer lies in the nature of the input catalysing exaptive reanalysis. We have already established that obsolescence and symptomatic opacity define exaptive change. Willis (2016:204) argues that these cases involve the abduction of a hypothesis about the feature values of obsolescent structures' in the face of weak evidence. Indeed, weak evidence constitutes opacity in terms of the acquisition of the model grammar. Because examination of the parts can tell us more about the human language making device than examination of the product alone, it is important to distinguish feature reanalysis in exaptive change from other reanalysis.

In standard reanalysis the evidence available in the PLD is not totally opaque but ambiguous. Indeed, why previously acquirable surface strings in non-obsolescent constructions are subject to reanalysis presents a challenge. Timberlake (1977:168) considers string ambiguity the catalyst, where old and new analyses are available. Likewise, H&C (1995:70-72) argue that 'the possibility of multiple structural analyses' leads to reanalysis and discount opacity as an obligatory prerequisite to reanalysis. In situations of multiple analyses, optimization through FE will dictate selection.

However, I have shown (§2.1.3) that, in exaptive reanalyses, such as Afrikaans gender inflection, opacity relates to the complete lack of triggering experience (synchronic PCFs) for the ancestor grammar during CLA. This renders the previous structural analysis an acquisitional impossibility. Willis (2016:203) calls this 'near-total analysis failure: only surface form is correctly established, and function and structure are left unanalysed.' However, this definition is limited to morphosyntax; for syntax I consider surface structure cognate to surface form, especially if null elements are exaptable. Regardless, the catalyst to exaptive feature reanalysis is thus not ambiguity between analyses, but the possibility of any structural analysis for a surface structure. Lass' (1990) slogan 'adapt or die' can be reformulated in terms of reanalysis:

(12)   a. If the possibility of any structural analysis is removed (in any grammatical domain) opacity will cause death.

b. If there exists any possible analysis, the construction will be exapted.

The opacity precondition in exaptation is, however, not analogous with Lightfoot's (1979) Transparency Principle. Opacity in our terms is acquirability and not some notion of markedness-like tolerance.

3.2.1.2. Extension

It is important explain where new features have come from in exaptation and how they got there. In brief, we want to know how brand new features are donated to linguistic items, and how existing features are shared (copied) from an established head to a new item, which previously did not engage in that particular Agree operation.

A mechanism creating the surface contexts in which these kind of reanalyses can take place is extension. Extension changes syntax by generalising rules, often reducing complexity created by reanalysis H&C (1995:97). It affects surface manifestations of syntactic patterns without intrinsic change to underlying patterns, i.e. features on heads. In this sense, extension exploits surface analogues and need not change features. Extension can lead to feature reanalysis or alternatively take place during 'actualization' when the consequences of reanalysis map out across the grammar.

As shown, reanalysis is the central mechanism in exaptation; however, that does not exclude extension from exaptive changes. Uncontroversially, extension can take place as a consequence of exaptive feature reanalysis, evident in the spread of MHG plural umlaut from i-stems to other stems, e.g. *gäste* then *bäume*.

Moreover, exaptations can source meaning from elsewhere in the system based on "rule" similarity. This is demonstrated in the exaptive reanalysis of the *was/weren't* distinction as polarity marking in some colloquial British English varieties (Willis 2016), which I consider a conflation of reanalysis and extension. As discussed in §2.3.3, Willis (2016) argues that presented with weak evidence for number/person features, children turned to evidence from modal/auxiliaries bearing a cliticized (*n't*) marking a polarity distinction without number features, e.g. will/*won't*. Thus analogy via extension also appears to be a factor in exaptive reanalysis, a position taken by Joseph (2016).

Explicitly, if the PLD is incapable of triggering the model parameter, extension can serve as a mechanism to find "any possible analysis" on the basis of surface similarity. We should also explore the possibility that extension and 'preservative reanalysis' belong to the same generalising operation. The former based on overt evidence in the input and the other on covert evidence. In sum, the child acquiring language can probe the across domains at the interfaces for possible features to assign to items presenting an acquisitional challenge.

This summary of extension and reanalysis sheds light on diachronic processes involved in exaptive change. Nonetheless, H&C's (1995) work precedes approaches fully linking optimization principles in CLA and syntactic change. Therefore, giving prominence to third factors as mediators of PLD and UG, we should attempt to explain all syntactic change in these terms. This is especially the case where the input poses a challenge to the acquirer. I now turn to the approach of Roberts and Roussou (2003) (R&R) as it is desirable to frame exaptive feature reanalysis in minimalist hierarchical terms.

3.2.2. Hierarchical Reanalysis: Roberts & Roussou (2003)

Exaptive changes include both the absorption of morphophonological conditioning into morphosyntax, e.g. umlauted plurals, and the reanalysis of grammatical items into new and conceptually-novel roles within morphosyntax. Therefore, it is useful to compare such change with minimalist approaches to syntactic change.

R&R's (2003) approach can provide hierarchical distinctions in the types of reanalysis applicable to exaptive feature reanalysis. They propose two principal types of change: upward or downward reanalysis of heads in the derivation. The former, termed grammaticalisation, entails formation of new functional material via 'successive upward reanalysis' (R&R 2003:202), while the latter does not. These two types of reanalysis are associated with different effects (14 & 15). There is no reason that exaptive changes should be limited to either of these as options, as exaptation refers to the acquisitional context and not to the process of change itself.

(14)   'Downward' changes:

      a. apply to all members of Y;

      b. do not change category of Y;

      c. involve no semantic or phonological change to Y-roots;

      d. cannot be cyclic.

(15)   'Upward' changes:

        a. apply only sporadically or to morphological subclasses of Y;

        b. change category of Y;

        c. are associated with semantic bleaching and phonological reduction;

        d. can be cyclic.

                                                                    (R&R 2003:208)

All reanalysis is proposed to involve simplification of the previous grammar, as the conservative nature of CLA always prefers to eliminate head movement if given the option. This presents a diachronic preference of Merge over Move, i.e. the elimination of 'marked' movement operations in favour of merge. This pattern emerges because children tend to assume an exact mapping between acquirable features and lexical items. Crucially, they also avoid positing the same realisation for multiple features instead preferring 'to have a one-to-one mapping between features and lexical items' (R&R 2003:203). This is a likely explanation for general avoidance of doublets in morphology (Aronoff 1976), syntax and morphosyntax (Kroch 1989, 1994). In sum, children look to disambiguate multiple analyses and economise the input they receive, and FE means the child will attempt to posit as few features as possible for the strings it hears.

        A difficulty for R&R's proposals is the emergence of new Agree relationships capable of creating or preserving movement operations. Moreover, changes in features on a particular head do not automatically necessitate a different first-merged position in the derivation, i.e. we also expect stationary reanalysis. For instance, there is no evidence that a movement operation has changed in the exaptation of the *was/weren*(*n't*) distinction (Willis 2016). Instead, a different feature on the same head licenses the appropriate form and enclisis of negative *n't* in the same hierarchical position.

        I now turn to define two different types of opacity capable of triggering exaptive reanalysis, which I consider the primary catalysts under the superset label of obsolescence. An account of the exaptation of syntactic null-heads in historical English will follow.

4. A MODEL OF SYNTACTIC EXAPTATION

In this section I suggest two types of opacity, subsumed under obsolescence, capable of forcing exaptive reanalysis in morphosyntax and narrow syntax during CLA. This approach is framed in terms of hierarchical parametric variation and the discussion of CLA and diachronic syntax in §3. Firstly, I provide a theoretical discussion of exaptive reanalysis brought about by competing feature sets, building on work by Kroch (1994). I then present an approach to opacity via breakdown, which can in turn feed Grammar Competition. Then follows a case study showing the syntactic exaptive reanalysis of a phonologically-null head and its associated Agree operation in the history of English. That is, owing to breakdown, the V2-mesoparameter allowing XVS inversion was exaptively reanalysed as a microparameter for locative inversion. This demonstrates that exaptation is also a valuable descriptive classification for syntactic changes, and that phonologically-null syntactic heads are also exaptable.

4.1. *Two Types of Obsolescence*

This account of obsolescence focuses on parametric variation. However, this account could extend beyond the syntactic and morphosyntactic domains. The fundamental idea is that acquistional opacity is involved in all obsolescence but how opacity arises can be taxonomized. To recapitulate, opacity in exaptation obscures a feature set so greatly that the child finds it impossible to acquire the associated parameter. It is not ambiguity that allows for exaptive reanalysis but the possibility of any analysis where a complete lack of the initial model arises.

4.1.1. *Opacity via Grammar Competition*

As noted in §3.2.2, R&R (2003:203) argue that children acquiring language prefer to posit a one-to-one mapping between features and lexical items. Therefore, the conservative nature of CLA should prevent the child from positing two identical feature sets for distinct realisations. This pertains to work on Grammar Competition (Kroch 1989, 1994). Kroch (1994:5) argues that morphosyntactic change 'proceeds via competition between mutually exclusive grammatical options', called 'doublets', and changes are the working out of this competition. Like 'adapt or die' (Lass 1990), structures in competition follow two distinct diachronic

patterns. Normally an innovative variant comes into competition with an older variant which it gradually replaces, akin to 'die'. R&R's (2003) assertion reflects Kroch's (1994:3-6) observations that only one variant of a given function is acquired during basic CLA, demonstrated by language users' tendency to select 'one abstract grammatical option over another in their language production'. In Grammar Competition, both variants of a particular feature set are available in the PLD. The choice of one over the other, i.e. the avoidance of doublets, is attributed to the Blocking Effect (BE), suggested for morphology by Aronoff (1976), but expanded to parameter setting by Kroch (1994). The BE represents 'a global principle of economy that applies to the lexicon and rules out functionally equivalent items' (Kroch 1994:9). The BE is most likely a manifestation of FE; however, this thesis does not aim to examine the exact nature of the BE. Wallenberg (2013) considers it a combination of the principle of contrast, which dictates that two forms must have two different representations in the lexicon (Clark 1987), and frequency-based selection by children. Regardless of its mechanics, the BE invariably causes the opacity of an otherwise acquirable realisation.

Exceptionally, an older variant can survive by gaining its own separate and innovative function. Kroch terms this 'specialisation', i.e. 'adapt' (Lass 1990). This relates to exaptive change in that the child must choose between two items with the same parametric value, but it can only assign that value to one variant. The child also receives the older variant in the PLD but its ancestor parameter value has been made opaque by the competing variant. Now the child can take advantage of any other possible analysis and specialise that variant by actuating different features, which need only be marginally different from its former value. If no analysis is available the variant will die.

Regarding CLA, this is indistinguishable from opacity affecting only one construction or structure, due to the loss of PCFs. Consequently, specialisation via Grammar Competition represents a special instance of exaptive feature reanalysis. Moreover, the loss of particularly prominent features within morphosyntactic paradigms may force a situation of competition between previously distinct categories as feature sets become identical. These variants are then subject to the pressures stated above, i.e. one will be replaced, or both will survive as the child searches for any possible analysis for one or both variants.

An example of exaptive reanalysis in Grammar Competition is found in work by Guillot (2015:558-580) on the development of a morphosyntactic distinction between demonstrative determiners and pronouns in medieval French. This has been classified specialisation by Lowell-Sluckin (2016), but can be considered exaptation. Old French had

two separate paradigms marking a general demonstrative class encoding determiner and pronominal function. These paradigms marked distinct speaker-reference deictic function. One paradigm based on *cist* (1SG.MASC) indicated that the referent in his/her is inside the speaker's personal sphere (16a). The second paradigm based on *cil* (1SG.MASC) indicated that the speaker placed the referent outside his/her personal sphere (16b).

(16)

a. Com   vos   dei   graciier /
    how   to.you.CL   should.3SG   thank.INF

    De   **cest** cheval que   j'ai   ci   guaaignié!"
    of   this horse   that   I'have.1SG   here   won

    'How much gratitude I owe you for this horse that I have won!'

b. je te   pri […]   que   tu   **cel**   cheval   me   prestes
    I you.CL beg.1SG that   you   this   horse   to.me.CL lend.2PL

    tant   que je aie   ateint   un chevalier   qu   ci
    such   that I have.1SG.SUBJV   seized.PST.PTCP a knight   who   here

    s'   en   vet"
    REFL=ADV.CL   goes
    'I ask you to lend me this(/your) horse until I catch a knight who has just fled.'

                                        (adapted from Guillot 2015:565)

    The Medieval French deictic system underwent radical upheaval, and this speaker-reference dependent distinction disappeared. Consequently, these two paradigms became interchangeable triggering competition as the variants shared the same functional space, i.e. feature set. These paradigms were thus opaque due to the BE. However, they slowly specialised from the 14th.C to 16th.C creating a new morphosyntactic distinction. From the *cist* series emerged a reduced set of demonstrative determiners *ce(t)/(ceste) cette / ces,* and from the *cil* series emerged a set of demonstrative pronouns *celui/celle/ceux/celles*. As

expected over long periods, the paradigms underwent changes in form and some levelling. This case shows the redistribution of formal features across the two paradigms, creating marginal conceptual novelty in relation to its original distribution. That is, the paradigms were exapted.

In sum, competition-induced opacity constitutes a source context for exaptive feature reanalysis. Moreover, those variants which are either forced to adapt or subject to replacement, are obsolescent in two concerns. Firstly, for children exposed to two or more variants, at least one variant is obsolescent due to BE-induced opacity. Secondly, they are generally obsolescent as they are gradually marginalised over time in the wider speech community, reducing their frequency in the input over time. However not all Grammar Competition falls into the described pattern. Indeed, competition can also proceed quite normally if an innovative analysis is more economical than its predecessor. I now turn to the emergence of opacity within the context of language breakdown, identified by Los (2013) as a catalyst of exaptation.

4.1.2. *Opacity via Breakdown*

The inability of the child to acquire the target grammar unites exaptive changes such as the reanalyses of gender inflection in Afrikaans (Lass 1990), *was/were*(*n't*) polarity in English (Willis 2016), and morphologised plural umlaut in German (Lass 1990). Such change involves the principle of 'any possible analysis' during CLA, rather than a choice based on FE between multiple ambiguous analyses. Unlike opacity via Grammar Competition, these cases invariably include the breakdown of PCFs rendering their target role unacquirable. These triggers may erode due to diverse and unrelated types of change. Crucially, the input is insufficient to reproduce the same features present in the target grammar. For Afrikaans, the loss of a crucial trigger for the positing of grammatical gender features catalysed reanalysis, the *het* vs *de* distinction. For German umlaut, phonological syncretism in stem morphology fatally obscured the original distribution. The reanalysis of a polarity distinction for *was/weren't* is likewise the result of breakdown, as person/number marking completely disappeared in past tense forms across English verbal paradigms, leaving *be* isolated and thus obsolescent (Willis 2016). In varieties where reanalysis occurred, the evidence of person/number distinction was systemically so limited and thus opaque that children will have looked for any possible analysis for *was/were*. While change in the system isolated the form, breakdown represents the failure to acquire overt features of an otherwise

phonologically stable alternation. Therefore, this represents parametric change involving change in the features on a head and the loss of a checking relationship involving person/number features. This distinction also demonstrates how parameter change can destabilise the system, leading to a knock-on effect of parameter change. This is supported by Longobardi's (2001) inertial theory and B&R's (2008) work on 'cascading parameters'. However, breakdown in morphology for instance need not render a given structure so opaque that it cannot be acquired.

While the breakdown of rich inflectional morphology has been argued to precipitate word order changes, such as the loss of V2 in English (Haeberli 2002a,b), it participates in a chain of events and cannot immediately render a word order unacquirable. This is evident in the maintenance of V2 in Scandinavian despite sparse verbal inflectional morphology. Therefore multiple parameter changes can collude over time to render another parametric value so opaque that it is lost or reanalysed on its own terms, ergo exapted. Notably, the loss of features via breakdown may bring two previously distinct categories into competition, which are then subject to opacity via Grammar Competition, evident from the discussion in §4.1.1. This builds on Lass' (1990:81) observation that a language may possess a grammatical distinction, 'coded by means of morphology', which is then jettisoned leaving the same morphological material encoding fewer functions.

I now return to the parametric notion that changes across different parametric values may collude to render a given construction opaque in the PLD. If presented with enough alternative evidence the child may posit an exaptive feature reanalysis. I shall show exaptation to also be real phenomenon for phonologically-null syntactic heads.

4.2. Exaptation of Syntactic Material: *from V2 to Locative Inversion*

I am unaware of any work addressing exaptation in syntax from a generative perspective. However, the prospect of purely syntactic exaptation is plausible in any theoretical account involving feature-based Merge, Move (internal Merge) and Agree. Word order changes are inherently tied to reanalysis of parameter settings, which may become less pervasive and thus move between macro, meso, micro, or nanoparameteric levels. In order to diagnose syntactic exaptation, one must show that the chronologically earlier construction was in some way opaque, and that the latter construction includes item-specific conceptual novelty.

I now revisit work by Brinton & Stein (1995) (§2.3), offering a feature-based analysis of the "functional renewal" of V2 XVS inversion structures as locative inversion (LI),

e.g.*Into the room came John*, between Middle English and ModE. If inversion in ME was allowed through a V2 mesoparameter (R&B forthcoming) but lost during the transmission from late ME (LME) to Early Modern English (EModE) (R&R 2002:13-15), then surviving XVS orders will have required reanalysis on their own terms, re-setting them to lower level parameters. I present a case in which LI can be seen as a particular XVS order which instead of "dying" was able to survive via 'any possible analysis', i.e. exaptation. I shall briefly describe the background and architecture of my approach before providing a synchronic account, historical background and diachronic analysis.

4.2.1. A Cartographic Approach to the C-Domain and V2

This case study addresses exaptive changes in the syntax, whereby change in the conditioning factors of movement are rooted both in feature changes in the narrow syntax (in the traditional sense) but also change mediated by the interfaces. Indeed, English LI involves fronting of a PP to the CP (Roberts 2010:172), while V2 structures also involve operations in the C-domain (Holmberg 2015), as these structures entail processing at the interfaces between syntax, discourse and semantics. I therefore adopt a cartographic view of the CP and the syntax-discourse interface, following the split-CP hypothesis (Rizzi 1997). This separates the C-domain into separate functional categories encoding the narrow-syntactic properties of the clause and contains a pragmatico-semantic informational field. The purely syntactic projections form the force-finitness system: ForceP sits in the highest position and its head determines if a clause is interrogative, imperative or declarative; an inward facing Fin(itness)P sits above T and its head carries a [±finiteness] feature licensing mood and tense in the lower projections. Between these projections can optionally occur discourse XPs: Topic (TopP) and Focus (FocP). These are generated according to the syntactic and discourse features present in the clause (Rizzi 1997:285-291). The outer-left FrameP field anchors the speech act in terms of speech participants and deixis (Benincà & Poletto 2004). A basic structure of an articulated CP can be assumed as follows (17):

(17) [FrameP [ForceP [TopP [FocP [TopP[FinP [TP….]]]]]]]

                    (adapted from Rizzi 1997, Benincà & Poletto 2004)

        This approach provides highly descriptive analyses of features and heads, with which to reassess the findings of B&S (1995). They consider LI a refunctionalised V2 structure

marking presentational focus on the late subject. However, many reject a cartographic approach to discourse (Los 2009, Neeleman & van de Koot 2008). Nonetheless, a cartographic approach is desirable at least in descriptive terms, as both ModE LI and historical constituent movement rely heavily on purely syntactic formal features and formal discourse features, which I show in §4.2.2.

Before discussing the workings of the V2 system in historical English, I shall define a cartographic approach to V2. V2 is a general requirement for the finite verb to be realised in the second position in the derivation, (18a). The V2 parameter involves the interaction of two primary features: a) a feature on a functional head in the left periphery attracting the finite verb thus inducing V-to-T-to-C movement, and b) an EPP/Edge feature (+EF) on that head requiring movement of a constituent to its specifier position (Holmberg 2015).

V2 systems divide into symmetric and asymmetric V2 (Holmberg 2015:354-359). Asymmetric languages like German show asymmetry between main and embedded clauses; finite verbs appear in final position in embedded clauses (18b). Symmetric systems also include a verb raising operation in embedded clauses, consequently showing V2 distribution in all clauses, e.g. Yiddish (18c). As the case study addresses matrix clauses, further discussion is unnecessary. This approach assumes that V2 movement in matrix clauses, at least in Germanic, invariably involves V-to-T-to-C movement. This comprises movement across the phase heads C^0 and v^0, as proposed by Chomsky (2001), which is otherwise blocked by the PHASE IMPENETRABILITY CONDITION (PIC). We must therefore posit an EPP, (or rather an Edge Feature [+EF] following Chomsky 2008) on both v^0 and C^0 allowing for cyclical movement across phases, a position taken by Roberts (2010: 168-69).

(18)   a.   Peter **geht** nach Hause   **[German]**

Peter goes to home

'Peter goes home'

   b.   Maria glaubt,dass Peter nach Hause **geht**

Maria believes   that Peter to   home goes

'Maria thinks that Peter is going home.' (cf. Holmberg 2015:358)

c.	Avrom	*gloybt*	*az*	*Max*	***shikt***	*avek*	*dos*	*bukh*
	Avrom	believes	that	Max	sends	away	the	book

'Avrom believes that Max will send away the book.'

[Yiddish] (cf. Holmberg 2015:356)

Roberts (2004) argues that V2 systems include a generalised EPP feature on Fin$^{'}$ which invokes phrasal movement to Spec-FinP, thus satisfying a requirement that this position be filled. This is roughly equivalent to proposals by Alexiadou & Anagnostopoulou (1998) that parametrized EPP checking on AGR^0 leads to a requirement to fill Spec AgrSP. We can assume that the AgrSP projection above T is equivalent to FinP in this case (Alexiadou p.c.). Wolfe (2016: forthcoming) argues that all V2 systems have unmarked V^0 to Fin^0 verb movement. A distinction can also be made between V2 systems which carry the responsible features on Fin^0 (low-V2 languages) and those which carry features on Force^0 – or on both- (High-V2 languages) (Poletto 2016, Wolfe forthcoming,). Low-V2 systems, e.g. Old English, are more flexible in producing deviant V3 orders, while the High-V2 systems are stricter and disallow V3 orders, e.g. German. Regardless, V2 is an example of a mesoparameter as all [+V] heads are affected. I now turn to describe LI in ModE, the loss of the V2 parameter in English and the parametrization of LI.

4.2.2. LI in Modern English

As discussed in §2.3.2, B&S (1995) make explicit claims regarding the history of ModE LI. They claim that LI is a V2 construction allowing for the fronting of an argument or adjunct to a position preceding the verb. Moreover, B&S claim LI to have undergone renewal from an unmarked ME V2 alteration to a V2 focus-marking construction of nominal subjects. Their interpretation of modern LI depends on the idea that information is weighted: old information precedes new information. On their approach, the modern construction arises in two stages: locational-adverbial PPs underwent standard topicalisation in ME (like many other elements), before a presentational reading of the XVS order was 'functionalised' in EModE. This is an undesirable position for a formal account as it cannot explain why other elements ceased taking part in movement; and, as I shall demonstrate, modern LI does not constitute residual V2 in formal structure. I first present a synchronic analysis of LI in ModE following the analysis of Rizzi & Shlonsky (2006) (R&S). I shall then provide an account of inversion in

Middle English in §4.2.3. In §4.2.4 I suggest a diachronic developments which allowed for LI to be exapted with its own microparametric value.

SVX is the canonical order in contemporary English matrix clauses. However, LI produces XVS and is one of few attested XVS phenomena in ModE; others include wh-movement, negative inversion (NI) and quotative inversion (QI)[4]. In LI, a PP encoding some spatial deictic adverbial function, or a lexical adverbial of place is topicalised via leftward movement from a canonical first-merged complement position (19a) to a phrase-initial position. This results in either an SXV verb-final order (19b) or XVS LI showing subject-verb inversion (19c). LI is sensitive to thematic and aspectual properties of the predicate such a path (19c) or location interpretation (19d) (Roberts 2010: 171) but a source interpretation is also grammatical (19e).

(19)   a. John came into the room.
        b. Into the room John/he came.
        c. Into the room came John.
        d. Under the car slept the cat.
        e. From under the car emerged the cat.

The construction manifests several constraints unattested in historical stages of English (see Table 4). LI in ModE is a matrix clause phenomenon and occurs primarily with unaccusative verbs. However, some unergatives also appear in LI, but these are often optionally generated with unaccusative structure (Roberts 2010:171). Moreover, transitives, modals and auxiliaries forming compound tense and aspect constructions are mostly disallowed (20a), making LI near obligatorily bifocal. Modal and progressive verbal complexes are marginally more grammatical than tense-bearing auxiliaries (20b,c). This variation might reflect the former's lower first-merge position. Consequently, negation via *do*-insertion or otherwise is ruled out (20d). Lastly, only a nominal DP subject may undergo verb-subject inversion, while V-PN inversion is ungrammatical (20e) (B&S 1995, Coopmans 1989, R&S 2006).

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[4] A comprehensive list of all non-canonical word orders is outside the scope of this thesis.

(20).   a. *Into the room has walked John.

b. ??Into the room shall (John) walk John.

c. ??Into the room is John walking.

d. *Into the room didn't/doesn't John come (John)

e. *Into the room came he.

Table 4: Characteristics of inversion of locative structures

Locative inversions	OE +ME	ModE
Intransitive verbs		
Unergatives	+	-/+
Unaccusatives	+	+
Transitive verbs	+	-
Compound tenses	+	-?
Bifocal structure only	-	+
Copula/ full verb only	-	+
Matrix clauses	+	+
Embedded clauses	+	-
DP subject final	+	+
PN subject final	+	-
Negation	+	-
Expletive insertion (null or 'there')	+	-

(B&S 1995:41-2, Coopmans 1989)

B&S's (1995) argument that LI belongs to a renewed V2 structure is problematic in synchronic minimalist terms. Residual verb second refers to '…construction-specific manifestations of T-to-C movement in a language […] which does not generalize the V2 order to main declarative clauses' (Rizzi 1996:64). Instances of genuine V2 T-to-C movement do exist in ModE, such as NI and Wh-fronting of auxiliaries (Haegeman & Guéron 2000:334, Westergaard 2007a). These are special V2 microparameters but lexical verbs are unaffected, and thus banned from V-to-T movement. This is regularly considered a prerequisite for movement to C (see Roberts 2010 for an alternative). Therefore, LI cannot be

a simple functional renewal of V2 inversion because LI affects unaccusative lexical verbs (including copular *be*), which cannot leave *v*P.

A feature raising unaccusatives from V-to-C is unlikely. ModE's status as a strong satellite-framed language means that finer argument structure is not present in featural terms on verbal heads, e.g. path, source, goal, locative etc. (Folli & Harley 2016, Acedo-Mattelán 2012) but on prepositional elements. There is no possible checking relationship able to raise lexical verbs to C in these contexts. Roberts (2010:168-170), proposes movement of the PP to Spec-CP, the verb remaining in *v*P. This is a stronger position. However, Roberts' does not attempt to specify features allowing LI. Indeed, LI is an anomalous and marked in ModE; thus we must seek a synchronic feature-based account capable of explaining LI movement.

Indeed, LI presents a messy picture (see Landau 2010 for a review). Some consider LI primarily an information structural (IS) strategy (Birner 1995, Westergaard 2007a, Levin & Rappaport 1995, Coopmans 1989). For Birner (1995) LI is not even exclusively locative as sentences such as (21) also demonstrate inversion. However, this example contains an auxiliary and a heavy subject susceptible to heavy-NP shift. Consequently, lumping all cases of inversion together is undesirable.

(21)   Second, to this rule **would** apply, optionally, a rule we may call Verb Second...

(Birner 1995:244)

Regardless, IS does play a key role LI, as is evident from adverbials of place in presentational constructions with *here* (22a), which are subject to the same restrictions as shown in Table 4 (22b); Crosslinguistically LI induces presentational focus on the postverbal DP; and English LI involves the topicalisation of the PP (Landau 2010:120). Nonetheless, pure IS accounts cannot explain why the overwhelming majority of LI structures are so heavily restricted to locative PPs with unaccusatives. Moreover, it is hard to account for topicalisation based movement across phases in ModE as this would require a [±TOP] feature presumably on Top^0 in the left periphery to probe across phase heads for a goal in *v*P, which should be impossible without an +EF. However, an +EF and [±TOP] combination on Fin could not disallow all those complement types disallowed in LI. I choose to provide an analysis which accounts for the majority of cases and leave the exceptions to be explained by later work.

(22)   a.   Here comes John.

    b.   *Here will John come (John).

I adopt the analysis of LI by R&S (2006). Firstly, I assume an underlying first-merge structure of unaccusative verbs in a *v*P shell (23a), in which locative complements are the sister of V (23b). Unaccusatives are special due to their late internal subject. The subject has traditionally been analysed in object position, receiving a theme θ-role (cf. Alexiadou et al. 2004:1-22). I assume a subject generated in Spec-VP in contrast to transitive and unergative subjects generated in Spec-*v*P (Radford 2004:336-361). Following Radford (2004: 349-351), the verb merges in V before being obligatorily called up to check phi-features on *v* rendering a structure in (24); the subject remains in situ. For a canonical structure the subject must then move to a subject position above T (25)[5] to check nominative Case and satisfy the Subject Criterion (henceforth SC). That is, akin to the classical EPP, clauses have a mandatory criterial subject position which must normally be filled by an element capable of checking +N features; if this element checks all feature requirements it undergoes 'criterial freezing' in the subject position (Rizzi 2008), i.e. further movement is blocked. Subject extraction may skip this position to avoid freezing. An analysis making use of *v*P shells accounts for postverbal unaccusative subjects and allows for a more succinct analysis of unaccusatives with additional arguments. LI Structures like *in comes Chomsky* involve subject in situ, low V-to-*v* movement and the movement of the complement above *v*P.

(23a)
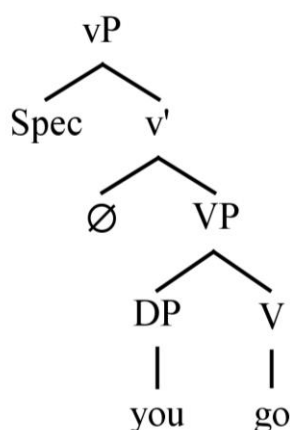
(23b)
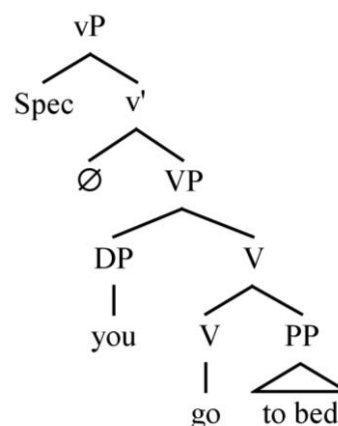
(adapted from Radford 2004:350-351)

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[5] The exact labelling of this position is disputed. It is classified SubjP by Cardinaletti (2004) and Rizzi (2008), but tentatively proposed as PersonP by Rizzi (2012). For simplicity, I use Spec-TP for this position.

(24) $[_{v}P[_{Spec}][_{v'}[_{v}go+\emptyset]][_{VP}[_{DP}you][_{V'}[_{Vt}][_{PP}to\ bed_{j}]]]]]]$

←----------------------

(25) $[_{TP}[you_{i}][_{T'}[_{T}][_{v}P[_{Spec}][_{v'}[_{v}\ go+\emptyset]][_{VP}[_{DPi}][_{V'}[_{Vt}][_{PP}\ to\ bed_{j}]]]]]]]]$

We must explain A-movement of locative complements in terms of features and movement across phases. R&S (2006:344-8) dispute straightforward presentational analyses of LI, which place a topicalised the locative PP (LOC.PP) in Spec-TP (termed 'SubjP') to satisfy the Subject Criterion. Raising to Spec-TP constitutes the operation blocking 'there' insertion. However, LOC.PP cannot remain in Spec-TP because it is a case assignment position and P is a case assigner unable to check nominative Case features in Spec-TP. Consequently, LOC.PP must evacuate this position to satisfy the SC via another possible mechanism, moving to a position in the split-CP. Normally the SC is satisfied by movement of a DP to Spec-TP before Fin is merged. However, structures will be ill-formed after Merge if the SC of Spec-TP could not be satisfied before Merge, for the reason that Fin is generally non-nominal. That is, Fin cannot normally license the movement of a nominal constituent alone, but instead could license movement of a finite verb and subsequently an +EF calls a nominal argument or expletive to satisfy the SC, as familiar from V2 systems.

R&S (2006:346) propose the existence of a special nominal Fin head bearing uninterpretable Phi-features. This phonologically-null head is able to license movement of a nominal constituent through itself on the way to a higher Spec position. Nominal Fin accommodates LI if we posit an uninterpretable locative feature [u:LOC] on Fin^{0} which probes for a lower goal [i:LOC] on P. As Fin is a phase head, the probe is not blocked. A [±LOC] feature approach is also taken by Landau (2010) within a non-cartographic framework. Parametrized EPP checking on Fin'[6] (Alexiadou & Anagnostopoulou 1998) combined with [u:LOC] will then target LOC.PP specifically. Indeed, English shows diachronic continuity as both ModE and the historical V2 systems in ME bear a generalised EPP on Fin (Roberts 2004). Thus, [+LOC] features on Fin^{0} and P enter into a checking relationship and due to the EPP the probe is able to target the entire PP (see B&R 2008:83) in a normal but obligatory pied-piping operation (26), allowing for the cyclical movement of LOC.PP through Spec-TP to Spec-FinP (27)[7]. To account for movement across phases this approach requires some +EF on vP.

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[7] I have only drawn movement of the PP from spec to spec positions for ease of presentation. Movement should however be considered to pass through the heads.

(26)   . . FIN$_{PROBE}$ . . . [$_{PP}$ . . . P$_{GOAL}$ . . .] . . .   (Adapted from B&R 2008:83)

(27)

However, LI movement cannot stop at Spec-FinP because Fin' is not a criterial head and cannot assign any special interpretive properties to its Spec (R&S 2006:347). As a result, LOC.PP must move to TopP (or any other criterial position). Of course, this is only possible if the PP also bears a [±TOP] feature allowing a checking relationship with discourse features on Top$^{'}$ (28a,b). Without [±TOP] features the derivation will crash at Fin'. This combination of [±LOC] checking followed by [±TOP] checking explains LI more thoroughly as accounts for IS and deictic analyses, demonstrating that a conflation of both discourse and locative features are responsible for LI in ModE.

(28)

a.

ForceP
Spec Force'
Force TopP
PP Top'
into the room Top [u:TOP] FinP
PP$_i$ Fin'
Fin [u:LOC] [+EPP] TP
PP$_i$ T'
T [+EPP] vP
PP$_i$ v'
v [+EF] VP
come John V'
V$_t$ PP$_i$ [i:LOC] [i:TOP]

b. $[_{ForceP}[_{TopP}[_{PP}$ into the room$][_{Top'}[_{Top}^0][_{FinP i}[_{Fin'}[_{Fin0}][_{TP i}[_{T'}[_{T}^0][_{vP}[_{Spec}][_{v'}[_{v}^0$ come$+\emptyset][_{VP}[_{DP}$John$][_{V'}[_{V}^0{}_t][_{PP i}]]]]]]]]]]]]]]]$

R&S's (2006) analysis means that English Fin can be either nominal or verbal but never both. Since nominal Fin and the raising of LOC.PP blocks I-to-C movement and Comp insertion, the unacceptability of LI with auxiliary movement and in embedded clauses is explained. However, one peculiar characteristic is that pronominal subjects cannot occur finally. However, this is explicable if we adopt an articulated lower TP, proposed by Belletti (2004), where the pronominal DP can move up to a low TopP between T and vP. This is plausible as pronouns are naturally anchored by an antecedent in the discourse, and a pronoun– or any subject - with a discourse antecedent clashes with the principle of end focus.

This is demonstrated in the more felicitous nature of (29a) compared to (29b). Movement of the Pronominal subject to TopP yields XSV order.

(29)

     a.   John knocks at the door, and in he comes.

     b.   % John knocks at the door, and in comes John.

Since the finite verb never leaves vP in LI, it cannot be residual V2 in the Rizzian sense (1996). Indeed, nominal Fin blocks V2-diagnostic V-to-T-to-C movement. It is however peculiar that only locatives and not temporal adverbial PPs participate in subject-verb inversions, as both did in ME. This can be explained in terms of a split in the responsibilities of deixis marking between different two separate head features on Fin (Sigurðsson 2010:162)[8]: a temporal one and a locational one. Consequently, we can conclude that English has only innovated the latter on a null Fin head since the loss of V2. This is a safe assumption since V2 entails a generalised EPP on a verbal Fin (Roberts 2004). Therefore, we must explain the innovation of both nominal Fin and [+LOC] features. I now turn to a brief analysis of inversion in ME, before investigating the innovation itself in EModE.

In sum, the specificity of LI with +LOC feature checking is indicative of a microparametric value, entailing processing at both the syntax-semantics and syntax-discourse interface. Following Tsimpli's (2014) 'early, late and very late' acquisition, we can predict that LI is acquired late due to reduced frequency and demanding interface requirements.

4.2.3. V2 and Middle English

ME had more flexible syntax than ModE. Inversion was more frequent and more constituent types were frontable. However, mid-ME (around 1300) inversions were more restricted than OE ones, largely due to macroparametric word order change in the emergence of SVO and the decline of SOV during late OE and early ME (Pintzuk & Taylor 2006). SOV is typologically associated with scrambling operations available in OE but which subsequently decreased in frequency over time (Los & van Kemenade 2006:1483). This section

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[8] Sigurðsson provides a more articulated account. However, this representation suffices for our purposes.

concentrates on inversion and verb movement in ME in terms of syntactic parameters available during the majority of the ME period. Recourse to OE structures is made where relevant. This allows us to distinguish between inversion in ME, and EModE and ModE, which differ in two key mesoparametric values. Firstly, ME had a V2 parameter (Fischer et al. 2000:132-137), allowing for a many inversion structures. Secondly, ME and indeed EModE contained another parameter allowing for V-to-T movement.

Historical English V2 clause structures show exceptional behaviour in the movement of finite verbs and subjects. There is a degree of agreement that in OE and ME the finite verb targeted either a higher or a lower position above T (Fischer et al. 2000, Haeberli 2002a,b, Warner 2007); Fischer et al. (2000) label these positions C and F, while Haeberli (2002a,b) and Warner (2007) posit movement to C or low AgrS. C is targeted when fronted operators rise to Spec-CP, e.g. wh-movement; FP is the neutral target. These analyses account for variation in subject placement by making two separate subject positions available: Spec-FP (Spec-AgrSP) for pronominal subjects and Spec-TP for DP subjects. On this account, focused operators are hosted in Spec-CP, e.g. wh-words, or focussed temporal adverbials such as *Þa/Þonne* (Fischer et al. 2000, Los & van Kemenade 2006). Spec-FP hosts pronominal subjects, considered by many proclitics or weak pronouns (Haeberli 2002b:95), necessitating a position left of the verb. Topicalised DP subjects can also be found here (Kroch & Taylor 1997:304). DP subjects and adjuncts with a discourse antecedent may also occur to the left of TP. Spec-TP is a generic subject position hosting informationally neutral DP subjects and indefinites (van Kemenade & Westergaard 2012). Furthermore, we can posit a silent expletive, i.e. *pro* in Spec-FP when the position is not occupied by an overt constituent (Haeberli 2002b:95); this expletive satisfies EPP on F. Following Fischer et al. (2000) the following structure is posited on these accounts (29):

(29) $[_{CP}[_{C'}Vf^1[_{FP}SU^1(PN/pro)[_{F'}Vf^2[_{TP}SU^2(DP)[_{T}[_T][_{VP}]]]]]]]$

Haeberli (2002b) posits null-expletive *pro* for OE, and Early ME (EME) but not ME, as ME demonstrates a stricter V2 system in all positions were consistently overtly realised. However, strict V2 is limited to northern ME Dialects and has been attributed to language contact with Norse (Kroch & Taylor 2000). Southern dialects and some Midlands dialects, e.g. the language of the final continuation of the Peterborough Chronicle, exhibit similar subject distribution as OE (Fischer et al. 2000:132). Consequently, I posit a null-expletive *pro* in many dialects throughout ME.

Following cartographic assumptions for ModE and wider V2, we may categorise FP/AgrSP as FinP and CP as ForceP. Therefore, in ME, a verbal Fin hosted a feature licensing V2 movement and an EPP for constituent raising above the verb. I assume automatic topicalisation for pronouns due to a general discourse antecedent requirement. Therefore, I posit that pronominal DP subjects and *pro* land in a low TopP and thus satisfy Fin's EPP. This complements work by Walkden (2013:171), who classifies OE null-subjects as aboutness topics. Furthermore, like fronted LOC.PP in modern LI, no constituents can be hosted in Spec-FinP as it is a non-criterial position. Hence, I tentatively assume the structure in (30) containing the initial subject position in TopP[9]:

(30)

$$[_{ForceP}[_{Force'}Vf^1[_{TopP}^1[_{FocP}[_{TopP}^2SU^1(PN/pro)[_{Top0}][_{FinP}[_{Fin'}Vf^2[_{TP}SU^2(DP)[_{T'}[_T][_{vP^{\wedge}}]]]\ldots$$

This analysis is not problematic for a weak pronoun analysis, as low TopP immediately precedes the Verb's landing site (Fin), whose empty Spec position cannot block phonological proclisis. I do not assume a proclitic head-adjunction analysis for pronouns, as Speyer (2010:181) finds a statistically significant number of V3 orders in late OE containing a topicalised nominal DP subject above the verb but below a higher topic (31a). Historical English behaves erratically compared to sister languages. It is possible that separate microparametric values involved in operator fronting could have induced verb movement to both Force and Fin, just as auxiliaries can rise to Fin in ModE. Since V2 in southern early ME largely reflects West Saxon OE, I assume the presence of an unmarked low-Fin-V2 grammar until V2 collapsed around 1450 (B&R 2008). With this analysis, (31b) has a low DP subject in Spec-TP rendering XVS inversion, but also shows the topicalisation of a temporal-adverbial PP presumably to Spec-TopP. Instead, (31c) shows flexible V3 order, containing a high PN subject in low TopP, while the fronted object is in high TopP (schematically prsented in 31d). It is uncontroversial that flexible low-Fin V2 systems can produce V3.

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[9] See B&R (2008:92) for alternative parsing with *v*P recursion under T.

(31)

    a.   and ðas   feower godspelleras God geswutelode gefyrn … Ezechiele

          and these four   evangelists   God revealed   long-ago Ezechiel

          'and God announced these four evangelists to Ezechiel long ago'

          (coaelive,+ALS_[Mark]:174.3311, cf. Speyer 2010:180)

    b.   On þis gær wolde   þe king Stephne tæcen Rodbert . . .

          in   this year wanted the king Stephen seize Robert

          'During this year king Stephen wanted to seize Robert . . .'

          (NE.Midl, C12; *ChronE* (Plummer) 1140.1, cf. Fischer et al 2000:130)

    c.   Ðas   þing   we habbað   be   him gewritene

          these   things we have   about   him written

          'These things we have written about him'

          (NE.Midl, C11; *ChronE*(Plummer) 1086.139 cf. Fischer et al 2000:130)

    d.
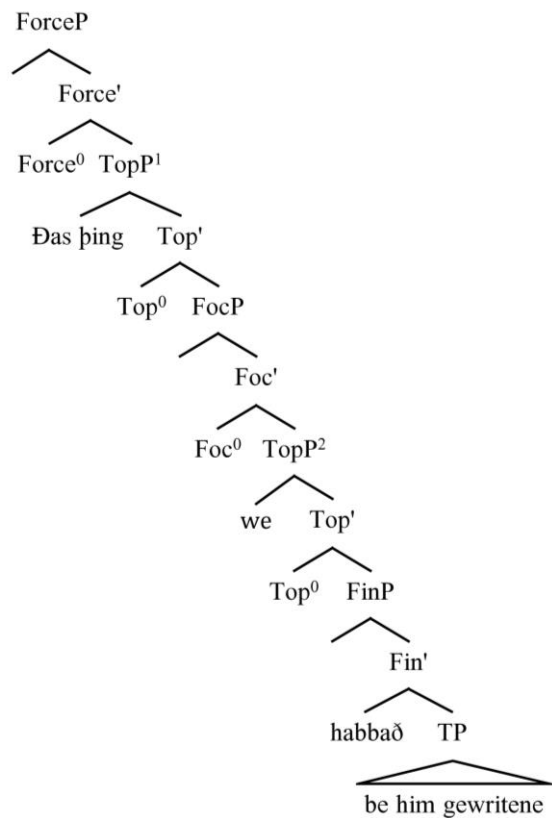
Unlike ModE, ME also permitted XVS inversions with transitive modal constructions. However, fronting became more restricted compared to OE over time. Indeed, Table 5 demonstrates some fronted constituents which could appear in throughout ME XVS inversions at different frequencies:

Table 5: Elements occurring in left periphery in ME XVS

Types of initial element	Notes
Non subject wh-questions	
Adjuncts	PP adjuncts
Locational adverbs	PPs, lexical adverbs of place
Temporal adverbials	PPs, lexical adverbs of time
Discourse anchoring adverbs	*Þa/then*, *now*
Other adverbials	
Adjectival complements	
Negative adverbials	Rare but more common in late ME EModE
Topicalised NP-objects (32)	Limited to quantified and negative objects after EME.

(Kroch & Taylor 1997, Williams 2000, Fischer et al. 2000, Pintzuk & Taylor 2006)

(32) Oðir labur sal þai do
      other labour shall they do
      'They must do other labour'

      ([*Ben.Rule(1)*](Lnsd)33.20] Cf. Fischer et al. 2000:131)

This thesis aims only to trace the diachrony of LI and not to account for all XVS inversion in historical English. I therefore turn to show commonalities between historical and modern XVS inversions involving unaccusatives. Modern LI has a topicalised LOC.PP and low DP subject; a low PN subject is impossible. This behaviour mirrors OE and southern ME XVS inversions with topicalised arguments, albeit without other modern constraints. Unaccusatives have always been susceptible to inversion due to their lower subject position (van Kemenade 2016, Warner 2007), i.e. subjects are base-generated in Spec-VP and the verb raises obligatory from V-to-*v*. Regardless of SOV/SVO orders, low movement was always necessary. Warner (2007) finds that LME definite DP subjects with unaccusatives are more

likely to occur early, i.e. topicalise, while indefinite subjects more often inverted producing XVS. Specifically, indefinite DPs remain in situ in an end focus position due to novel discourse status, mirroring modern LI subject distribution. Indeed, ME patterns akin to modern LI are common (33).

(33)   Of   þese   seuene heuedes comen alle manere of synnes

From   these   seven   heads   come   all   manner of sins

'From these seven heads spring all manner of sins'

(Vices and Vertues 11.8, cf. Warner 2007:94)

The key difference is that LI-like structures in ME are V2, which is incompatible with a nominal Fin analysis. Consequently, (33) does not require [+loc] features for LOC.PP to raise and satisfy EPP on Fin. Instead, [+topic] features interact with EPP on verbal Fin and probe for the appropriate argument. We could theoretically posit [u:LOC] on verbal Fin which calls up a locative complements. However, this requires us to posit [+temp] features for fronted temporal adverbials and an unparsimonious array of features for all fronting operations. It is more parsimonious to conclude that V-to-T and T-to-C rendered constituent raising via topicalisation and focalisation more economical due to both word order flexibility and proximity to EPP features. It is well known that languages with richer nominal morphology exhibit more flexible word order, often more susceptible to conditioning by IS/discourse, e.g. OE, Russian, Latin. Consequently, much inversion in ME was mediated primarily at the syntax-discourse interface. In light of this, (34a,b) provides a derivation of (33) involving cyclical movement of the verb to Fin and LOC.PP to Spec-TopP.

(34)

a.   [ForceP[Force'[TopP[PPOf þese seuene heuedes][Top'][FinP[PP$_i$][Fin'comen$_t$[TP PP$_i$[T' V$_t$[vP PP$_i$[v V$_t$[VP[DP alle manere of synnes][V'[V$_t$][PP$_i$]]]]]]]]]]]]]][10]

---

[10] For simplicity vP-to-T is not shown (see B&R 2005). This parameter was lost separately before V-to-T and T-to-C movement.

b.

Surface similarity between historical and modern structures does not prove their relation. I shall now show how these constructions are diachronically related via theoretical investigation of the reanalysis of ME topicalisation of LOC.PP/LOC-adverbials as modern LI.

4.2.4. The Loss of Verb Movement and the Birth of LI: Cascading Parameters

Here, I present a scenario for the emergence of LI in EModE, which I argue occurred as a last-resort acquistional response to opacity caused by the loss of a V2 mesoparamter. I show that PP.LOC-V-S structures became increasingly isolated and then opaque due to both ever fewer frontable constituents in XVS, and the loss of T-to-C followed by the loss of lexical V-to-T movement. Eventually evidence in the PLD for Verb movement will have been so minimal that PP.LOC-V-S became increasingly obsolescent until it was unacquirable as a V2 structure. Children in the generation responsible for reanalysis will have had two

choices: not to acquire the inversion or innovate 'any possible' new parametric value which allows the structure.

4.2.4.1. The Loss of the V2 Mesoparameter

This approach follows B&R (2008), who argue that parametric change can result in a knock-on effect ('cascading') for other parametric changes, when the loss of one parameter facilitates the resetting of another and so on. This builds on Longobardi's (2001) inertial approach, which argues against endogenous syntactic change considering only extra-syntactic developments responsible for syntactic change. Consequently, syntactic change may be caused by parameter-exogenous change which is nonetheless syntactically endogenous. In English successive parameter changes rendered the inversion of LOC.PPs unacquirable as V2 movement belonging to underlying constructions like (34).

The initial syntactic catalyst was likely the loss of SOV order. Around 1400 object fronting became restricted to negative and quantified objects (B&R 2008: 94-98). In terms of B&R (2005), this was the result of the loss of vP to Spec-TP movement, which caused a change how the EPP_D on T could be satisfied. This could no longer occur via pied-piping but instead by DP raising to Spec-TP from around 1450.

OE object fronting was triggered by two possible operations: 'an obligatory EPP-feature specifically associated with a [+Op] D-seeking Probe' via *v*P-fronting, or an optional EPP-feature defocusing objects, i.e. topicalisation (B&R 2005:20). OE and Early ME also allowed base generation of preverbal objects (Moerenhout & van der Wurff 2005:97). In LME after the loss of *v*P fronting and OV base generation, OV was limited to negative and quantified objects, and clauses with non-overt subjects. Preverbal objects were then only possible via quantifier raising, movement to NegP and the remaining topicalisation operation (Moerenhout & van der Wurff 2005:97). Brief corpus analysis of matrix clauses in the Penn-Parsed Corpora of Middle English (PPCME) shows that many undisputable V2 distributions with objects immediately preceding transitive finite verbs (OVS) refer directly to discourse antecedents (35). While OVS matrix clauses are a minority pattern throughout ME, their relative frequency holds at around 2.5% after an expected dip in EME (Table 6). The M24 category is an exception (5.26%); this classification contains texts originally composed by Richard Rolle (1300-1349) in EME but only attested in copied manuscripts from the LME period. We must therefore treat this data with caution. However, Speyer (2010:27) shows that

the fronting of topicalised direct objects, regardless of V2, sinks continuously from OE to late EME (figure 3).

(35)   …..All þese   relikes broute he to Acon   [CMCAPCHR, 85.1561]

         all these relics   brought he to Acon

         'he brought all these relics to Acon'

                                                LME circa 1461, East Midlands dialects

Table 6: OVS orders in ME from the PPCME[11]

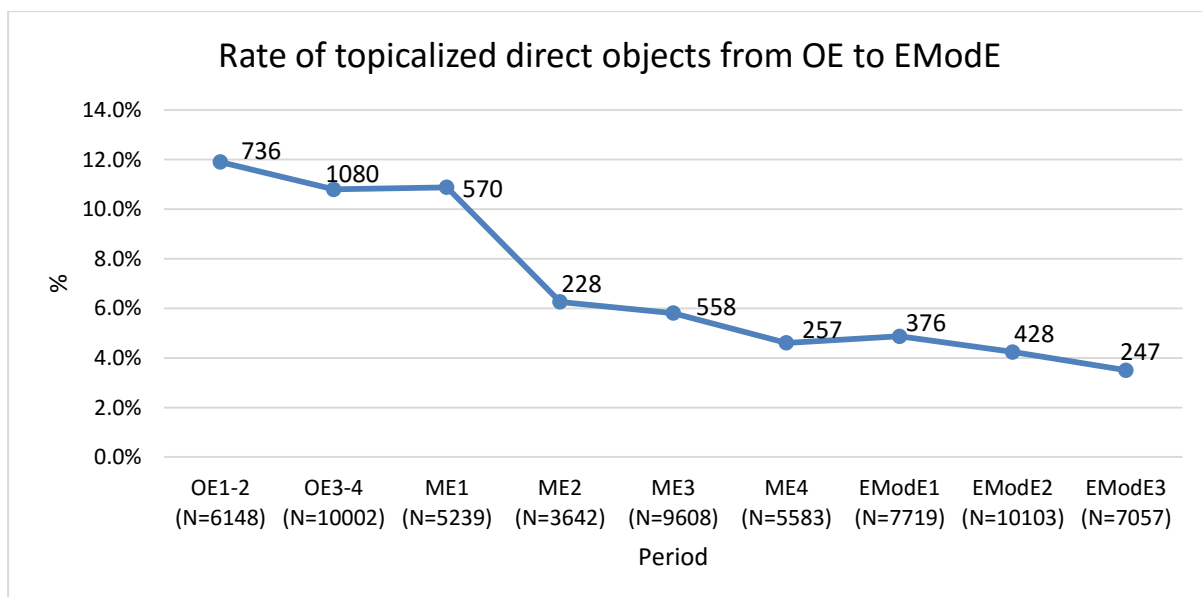| Time period	1150-1250 (M1)	1150-1250 (Mx1)	1250-1350 (M2)	1250-1350 (M23) m.1350-1420[12]	1350-1420 (M3)	1250-1350 (M24) m.1420-1500	1350-1420 (M34) m.1420-1500	1420-1500 (M4)
Tokens	205	62	52	6	232	34	4	144
Percentage of tokens	4.85% (N=4221)	4.39% (N=1412)	1.83% (N=2833)	2.77 % (N=216)	2.86% (N=8107)	5.26% (N=676)	2.6% (N=1840)	2.39% (N=6012)

Figure 3: Rate of direct object topicalisation from OE to EModE (Speyer 2010:27).

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[11] For accuracy this search was limited to objects immediately preceding the finite verb, and finite verbs immediately preceding the subject.

[12] M.xxxx-xxxx denotes the date of manuscripts if different from the original composition

Nonetheless, limited distribution of initial objects is insufficient to induce the reanalysis of fronted LOC.PPs into modern LI. The ME V2 system and later could produce many other fronted constituents without selecting specific semantic features. Moreover, the V2 parameter is widely regarded to have depended on V-to-T movement enabling T-to-C movement. I shall briefly discuss the mechanics of the loss of the V2 mesoparameter; an in-depth analysis is beyond my aims (for detailed analysis see B&R 2008, Haeberli 2002*a,b,* Kroch & Taylor 2000, amongst others).

Several credible analyses exist for the loss of T-C movement and thus the death of a pervasive V2 mesoparameter. B&R (2008:98-9) suggest that the decliticisation of subject clitic pronouns as full subject pronouns interacted with the EPP_D on T, which after the loss of *v*P movement had to be obligatorily filled by a DP capable of satisfying the EPP, i.e. PN subjects. This coincides with the loss of the expletive *pro,* which Haeberli (2002b) considers the result of disintegrating infinitival *-n* inflection, and the true catalyst for the loss of V2. These changes occur around 1450. However, decliticisation is not crucial. Indeed, the loss of *pro* would force a low subject to satisfy T's EPP, thus we can speak of parametric change in that subjects could no longer be realised in a low TopP above FinP. Indeed, PDE forbids two DP topics in the left periphery (Rizzi 2016) and thus the loss of low TopP subjects likely contributed to this change. B&R (2008) argue that the clause was consequently reanalysed from V2 with a proclitic pronoun to a non-V2 structure where V raised only to T (36a,b); however, on our non-clitic approach the analysis in (37) is more likely, but the result remains unchanged.

(36)   a. [CP XP[C SCL[C[T V *v* T]C]][TP…

      b. [CP XP C[TP PN[T[*v* V *v* T]]]](*v*P)….

<div align="center">(Adapted from B&R 2008:98)</div>

(37)   a. [TopP PN[Top]][[FinP[Fin'[T V *v* T]C]][TP…

      b. [FinP[Fin][TP PN[T[*v* V *v* T]]]](*v*P)….

These approaches explain the gradual loss of V2, as innovative grammars would consistently target Spec-TP for all subjects, while conservative grammars would maintain a subject DP in Spec-TP only. B&R (2008:99) assume that in the innovative grammar standard verb movement is limited to V-to-T, unless an operator raises finite verbs to C. The

emergence of uniform V-to-T movement in LME and EME is considered a mesoparameter, as it targets all verbal heads (B&R 2012:272).

However, finite verbs must have continued to move to Fin without operators, due to frequent fronted adjuncts and temporal, locational and other adverbial arguments in V2 orders which endured into EModE (Bækken 1998). Thus it is premature to posit the reanalysis of LI at this point, as other fronted elements provided evidence for general fronting. However, V-to-T movement and pervasive residual V2 need not present a theoretical contradiction if work by Westergaard (2007b) on Norwegian V2 is correct. Her approach credits variation in Norwegian V2 to a four-way microparametric split of V2-inducing heads in split-CP: [IntP[(*wh*)Int°V], [TopP[Top°V], [ExclP[Excl°V] (exclamative) and [WhP[Wh°V]. This is possibly the result of the disintegration of a V2 mesoparameter in Norse, but we lack appropriate data to prove this (Lohndal p.c.). Transitional English could have contained a similar set of V2 microparameters inducing subject movement without need for *pro*. If correct, this means that fronting was still available without the need for reanalysis of Fin from a verbal to nominal head. A full analysis is beyond this our goals, but this approach could elucidate variation in the gradual decline of V2. Indeed, V-to-C movement of lexical verbs survived well into EME in the 17th.C (Fischer et al. 2000:135) (38). Apart from purely stylistic instances in the late 16th.C, this is evidence of a V2 mesoparameter recast as smaller microparameters in English, which were then eroded individually.

(38) why   ordeyned   not   God   such   ordre

      why   ordained   not   God   such   an   order

      'why did not God ordain such an order'

<div align="center">(Wycl. Sermons 32.358; cf. Rissanen 1994: 341)</div>

This can be accommodated within B&R's (2008) cascading parameters approach, but complicates the picture. The important point is that evidence for fronting and V2 structures became gradually more ambiguous and isolated, i.e. obsolescent. Moreover, speakers were forced to construct a system burdened by several parameters allowing movement to different positions, which is susceptible to reanalysis if simpler innovations present themselves. I now turn to the exact developments from which microparametric LI emerged.

4.2.4.2. From V-to-T to Opaque Inversion

The nail in the coffin for lexical microparametric V-to-C, and thus the breeding ground for LI, was the loss of lexical V-to-T movement. V-to-T, as described above, had become a mesoparametric value between LME and EModE. Microparametric movement of V-to-C had to pass through T, in accordance with the Head Movement Constraint (HMC). That is, head movement from lower to higher heads should pass through intervening heads (Travis 1984:131)[13]. B&R (2008:99-101) argue that V-to-T movement, emerging around 1450, was fundamentally unstable owing to impoverished tense morphology. The crucial morphology was the infinitival marking also responsible for the loss of *pro,* which ultimately disappeared by 1500. In short, V could no longer check features on T. Therefore, a more economical analysis without V-to-T appeared for lexical verbs (39), while auxiliaries and *do-*support arose as a microparametric class still able to lexicalise T (B&R 2008, 2012). This change is gradual as *do-*support expanded throughout the 16th.C, replacing the older system (Kroch 1994).

(39)   a. [TP John [T walk-eth]. . .[VP..V $_t$. . .]] **Old**

b. [TP John T..[VP. . .[V walks]]]   **New**

(B&R 2008:101)

The loss of V-to-T and rise of *do-*support in EModE bled residual microparametric lexical movement to C. Consequently, the PLD contained ever narrowing evidence of lexical V-to-C movement. Likewise, subject-verb inversions became marked as the subject would satisfy the EPP$_D$ in TP blocking objects from movement out vP. Remaining OVS structures dropped rapidly during EModE, and IS marked XSV structures rose considerably (Bækken 1998:143) (figure 3). Regardless, fronted direct objects only constituted 1.9% of transitive clauses by 1500 (Fries 1940:201). Thus OVS was all but dead by the mid-17th century, when *do-*support was truly cemented.

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[13] This oversimplifies; see Roberts 2000, 2010 for an in-depth discussion and alternative approach.
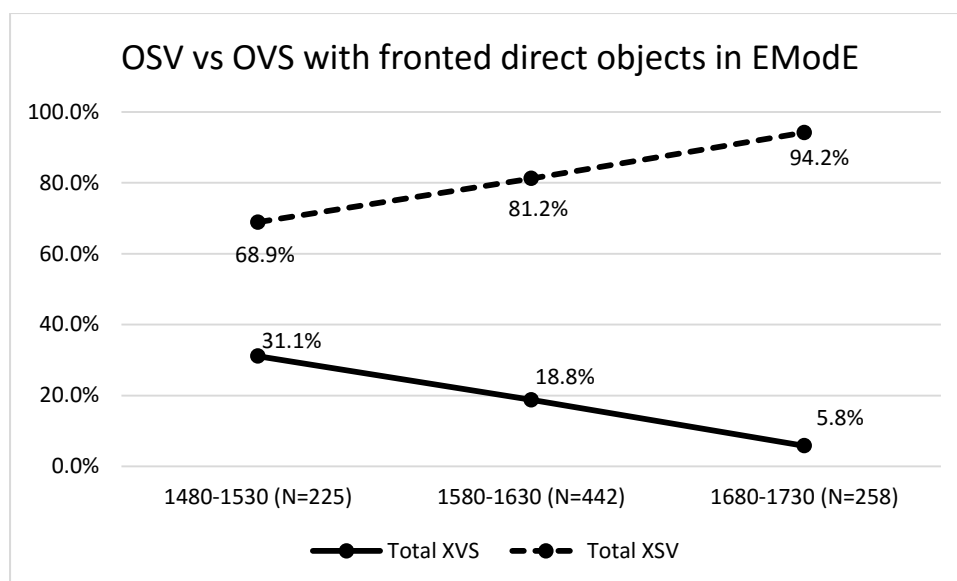
Figure 3: the diachronic distribution of fronted objects in EModE (Bækken 1998:143)

The loss of fronted object inversion could not cause the reanalysis of LI, since various fronted temporal, discourse and locational adverbials were still prevelant in XVS inversions throughout LME and early EModE. However, data collected by Bækken (1998:245-267) shows that fronted adverbials in XVS declined radically during EModE (figure 4). By late EModE, inversions with temporal adverbials (*then, now*) and discourse linking adverbials (*therefore, so, thus, yet*) were all but lost. The clear decline of both types demonstrates that XVS inversions were especially obsolescent by the time *do*-support stabilised in late EModE. I do not claim a direct connection, but it is possible that such movement became uneconomical in terms of distance (Minimal Link Condition), and blocked by overt expletives *it/there* in Spec-TP. Likewise, as *there* cemented its expletive role we can expect fewer adverbial inversions owning to ambiguity between the pro-form and the locative adverbial in the initial position, e.g. *there*.PN *are books* vs *books are there*.LOC. Statistical findings by Jenset's (2013) appear to confirm this position. Remarkably, *here* remains frequent in adverbial XVS inversions throughout EModE, while other adverbials become marginalised. Also telling is that all inversion with adverbial *there* (N=4) and 86% with *here* (N=44) occurs with intransitives. The latter occurs minimally with residual transitives (11.4%, N=44) which normally prefer XSV. By late EModE only 0.9% of transitive verbs occurred in subject verb inversions, while 11.8% (N=186/1576) of intransitives appear in XVS[14] (Bækken 1998:351).

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[14] I combine intransitives with linking verbs, i.e. copular *be* since its structure is unaccusative.
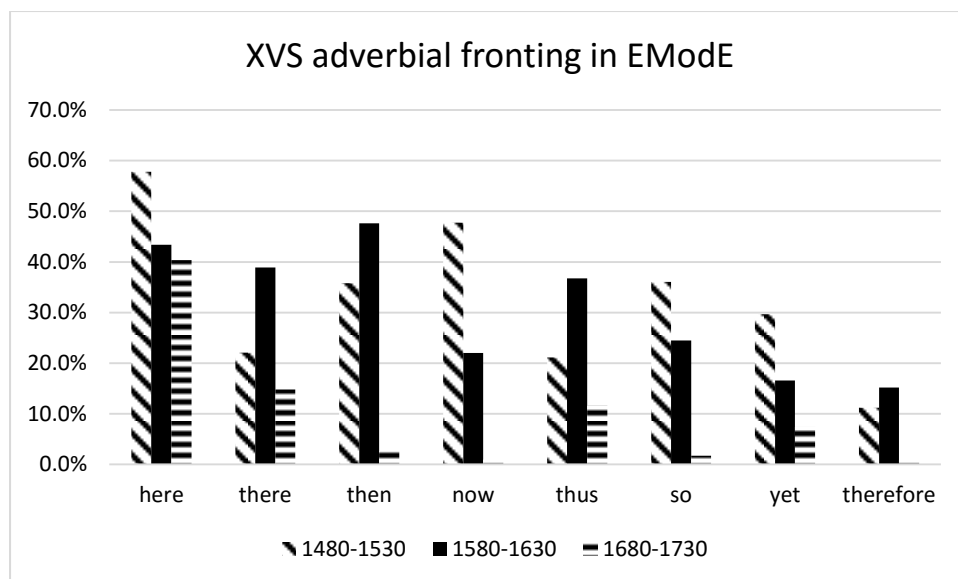
Figure 4: the individual frequency of different fronted adverbials in XVS in EModE (Bækken 1998:245-267)

This data shows a preference for locative adverbials emerging in the late 16th.C. Unfortunately, Bækken's (1998) data excludes prepositional constituents. However, analysis of matrix clauses including PPs in the Penn-Helsinki parsed corpora of Early Modern English (PPCEME) shows a clear preference for locatives in XVS inversions (62.5% N=35) by late EModE (1620-1730), while temporal inversions amount to 14.3% (N=8), and all other adverbials (*hence, so, thus, therefore* etc.) account for 23.2% (N=13). Of the locatives, 15 tokens are PPs and 20 are lexical adverbs.[15]
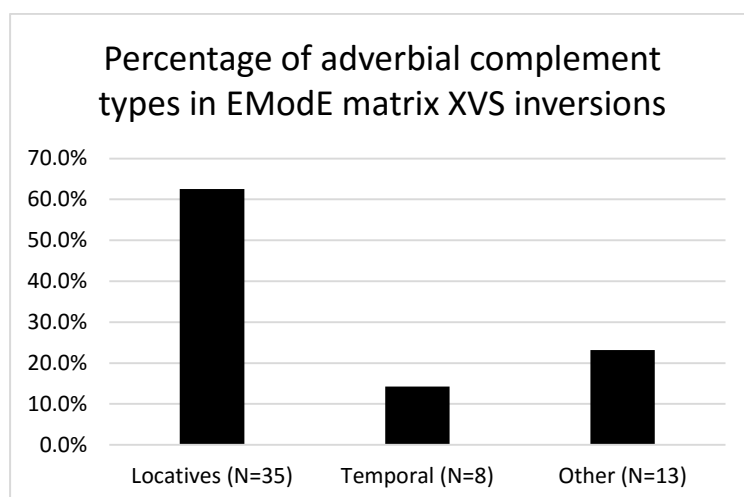

Figure 5: the frequency of different fronted adverbials including PPs in EModE XVS orders

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[15] These results discount quotative and negative inversion, passives and compound tenses.

Consequently, the reanalysis of LI must have happened between 1630 and 1700. The lack of other fronted constituents in XVS structures, combined with the loss of lexical V-to-T, likely rendered residual microparametric verb raising to Fin not just obsolescent but completely unacquirable from the PLD. Therefore, any V2-like fronting operation became completely opaque and exaptive feature reanalysis was required to preserve this surface order. In this case, reanalysis actuated a [+LOC] feature checking relationship (See §4.2.2). However, this cannot tell us why reanalysis producing LI was limited to locative complements and predominantly unaccusative verbs. I shall show that this reanalysis was enabled by the syntactic structure and the semantics of many unaccusatives, the latter of which reacted with spatial-deictic (locative) complements to innovate formal [+LOC] features.

4.2.4.3. *Unaccusativity as a Facilitator of LI*

Bækken (1998) shows that XVS inversion favoured intransitives. However, she further classifies inversion by semantic types of intransitive, divided into three categories (p354-360): verbs of 'existence on the scene' and 'appearance' e.g. *be, appear, stand,* corresponding to Unaccusatives; egressive verbs denoting movement away or out of the scene, e.g. *die, leave, end*, which includes both unaccusatives and unergatives; and an 'other' category with a mix of both types. By late EModE, 96.4% of XVS comprises the first category, while the other 3.6% are limited to the second; the third contains no instances. However, historical data (40) and modern data (41), demonstrate that so-called egressive verbs are never excluded from LI, and that unaccusativity is a determining factor. Throughout EModE and earlier in LME unaccusatives show an XVS preference, representing either the older V2 or newer non-V2 grammar.

(40)   Of   þese   seuene heuedes comen alle manere of synnes
       From   these   seven   heads   come   all   manner of sins
       'From these seven heads spring all manner of sins'

                                        (Vices and Vertues 11.8 cf. Warner 2007:94)

(41)   [PP From Platform 7] [VP departed [a train to London]].

An unaccusative preference for XVS from LME into EModE remains much later than for transitives and unergatives. Warner (2007) finds that unaccusative late subject inversions

are stable in the 15th.C when other inversions are declining. In LME, three different grammatical systems existed: strict V2 in the north, flexible V2 in the south and a non-V2 grammar in the Midlands. Eitler & Westergaard (2014) show that Capgrave's chronicles shed light on the distribution V2 surface orders between different verb types. This illuminates the circumstances leading to the reanalysis of LI. One shortcoming is that the study does not define which constituent types are fronted. Capgrave's chronicles show variation in one author's V2 patterning according to the intended regional or national audience, it must therefore be treated with caution as a syntactic resource. Regardless, in those texts showing flexibility between V2 and non-V2, inversion is considerably higher with unaccusative verbs (see Table 7). Two texts (*Life of St. Augustine* and *Gilbert*) show predominantly V2 inversions, while his *Abbreuiacion of Chronicle* is largely non-V2 except unaccusatives. This demonstrates the importance of unaccusativity. Combined with Bækken's (1998) data, this shows that inversions persisted longer with unaccusatives and were therefore probably more frequent in the PLD after V-to-T and T-to-C were lost. This explains diachronically how unaccusatives provided evidence for the exaptive reanalysis of LI structures, as their previous analysis was bled by parametric change but they were regardless frequent enough to constitute analysable PLD.

Table 7: The proportion of V2 word order relative to verb type across the four Capgrave texts, non-*then* initial XPs

Verb type	Auxiliary	Unaccusative	other verbs	Total
Sermon	6/6 (100%)	2/2 (100%)	5/5 (100%)	13/13 (100%)
Augustine	6/9 (66.7%)	23/40 (57.5%)	41/89 (46.1%)	70/138 (50.7%)
Gilbert	5/5 (100%)	43/68 (63.2%)	34/83 (41.0%)	82/156 (52.6%)
Chronicle	0/1 (-)	79/125 (63.2%)	12/66 (18.2%)	91/192 (47.4%)

(cf. Table 9, Eitler & Westergaard 2014:222)

However, it is dubious that a particular microparameter rendered unaccusatives consistently more V2 than other lexical verbs, since unaccusatives do not necessarily carry any great functional or semantic dissimilarity from unergatives or transitives. While Bækken's (1998) semantic classification shows a trend, all LI cannot fall into the same category nor do I wish to posit an unparsimoniously large set of nanoparametric values on all

verbal heads in LI. The distinction allowing inversion is primarily structural, unlike modals and auxiliaries subject to a T-to-C microparameter in PDE (B&R 2012). Instead, unaccusative XVS is likely the result of two factors: the ability of unaccusatives structures to assign one θ-role only (Burzio 1986) and its late internal subject which need not receive that θ-role. Burzio's generalisation (Burzio 1986:178) sates that 'all and only the verbs that can assign a theta-role to the subject can assign Accusative Case to an object'. Consequently, an unaccusative cannot assign a θ-role to the empty high subject position Spec-vP, but rather to the constituent occupying an argument position below the raised verb, usually the grammatical subject. Consistent with UTAH (Baker 1988), clauses with only one argument will assign the θ-role automatically to the theme, i.e. the late subject, which will move to Spec-vP[16]. On our analysis of an unaccusative *v*P containing two arguments the θ-role can be assigned to the prepositional complement and not the subject generated in Spec-VP. However, this is likely mediated by the ability of the complement to check [±D] features in *v*P and T's EPP, and various other factors (See Woolford 2003).

Thus, the enduring syntactic character of English unaccusatives produced the evidence and structural prerequisite for 'any possible analysis' after the loss of V-to-T, which bled residual microparametric T-to-C. Unaccusativity cannot explain why only spatial deictic complements remained in inversions, and why they did not disappear with other adverbials. Under FE the easiest option is to posit no features during CLA, as seems the case for inverted temporal and discourse adverbials. How then was semantic spatial deixis reanalysed as formal [±LOC] features on locative complements and Fin? Notably, we need not discuss any change in [±TOP] features as our analyses of ME and ModE have movement to TopP in C.

4.2.4.4. The Locative Semantics of Presentational Constructions

This section looks to illuminate the sources for the exaptive reanalysis of locative features. One possibility is a well-known relationship between existential/presentational structures and locatives. Indeed, Freeze (1992) argued that existentials are inherently locative. He argues that [+LOC] features exist inherently on copulas verbs, which probe for some [+LOC] goal. If Freeze is correct, then we must posit some feature extension to all other unaccusatives in LI. This is undesirable and cannot explain the innovation of [u:LOC] on a

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[16] Current thought argues that nominative case is inherited from T and that an unaccusative vP is instead defective and thus unable to assign a patient θ-role. However, this does not change the analysis of enduring XVS unaccusatives in LME.

nominal Fin. Moreover, a verbal-head approach is dubious as English is a strong satellite-framed language; that is, motion and location are not lexicalised on verbal heads but on other 'satellite' constituents, e.g. PPs and adverbials (Acedo-Matellán 2012, Talmy 2000). Again referring to human language's 'cognitive proclivity to perceive experience in terms of events, situations, and propositions' (Ramchand & Svenonius 2014:185), Freeze's "universal" locative features are better accounted for by general spatial-deictic semantics, not coded by formal features on verbs. Moreover, *be* is structurally unaccusatives and its frequency in locational existential/presentative constructions is simply symptomatic of its linking role. Thus, positing locative features on verbs in historical English creates no descriptive advantage.

A workable syntactic alternative is to posit intrinsic formal [±deictic-proximal/distal] referential features on demonstratives which agree with a complementary set of [±deictic-proximal/distal] locative features on locational adverbials (Gutierrez-Rexach 2015:458). Furthermore, demonstratives and deictic reinforcers are assumed to generate under the same projection (Gutierrez-Rexach 2015:441-466) (42). The definiteness of demonstratives could have interacted with historical topicalisation in English causing generalisation of features onto Fin in the face of opacity.

(42)   That   book   there
        That[+DEIC-DIST]   book   there [+DEIC-DIST-LOC]

                                    (cf. ex.38 Gutierrez-Rexach 2015:450)

4.2.4.5. The Exaptive Reanalysis of Locative Inversion

I consider the following description the most likely scenario for the exaptive reanalysis of LI as [+LOC] feature checking on Fin and P. Firstly, the combined loss of several parameters (discussed above) created considerable opacity for the acquisition of topicalised XVS structures. Object fronting was mostly erased due to changes in the way the EPP on T was satisfied. Fronted adverbials also began to decrease. However, unaccusatives were especially resistant to change owing to their low subject structure and behaviour regarding θ-role assignment. This provided enough residual evidence of XVS inversion that reanalysis could take place. Indeed, all LOC.PP fronting should have been lost if only a Spec-TP position were available for topicalised PP adverbials. The sharp decrease in fronted temporal and discourse adverbials and their questionable grammaticality in ModE XVS structures is

evidence of their inability to check EPP_D on T. Locative adverbials (source, path, location) survived thanks to a natural predisposition of human language to favour locative readings in presentative and existential constructions. A combination of raising via topicalisation and end-focus ensured that presentational readings were consistently available at every stage. However, the clash of case assigner P with the case assignment position Spec-TP, combined with the loss of all lexical V-to-T and thus microparametric lexical V-to-C movement, created severe opacity; that is, acquistional impossibility. The movement of LOC.PP through a verbal Fin' to satisfy presentational/topicalisation discourse requirements was unacquirable and movement of LOC.PP to Spec-TP violated case assignment. Hence, children looked for 'any possible' analysis in order to acquire an informationally and semantically important construction.

The inherently presentational (and existential with *be*) interpretation of inversions encouraged exaptive feature reanalysis incorporating semantic spatial deixis as formal [±locative] features: [i:LOC] on satellite elements dictating the spatial behaviour of the utterance, i.e. LOC.PP and locational adverbials; and [u:LOC] on a higher null-head able to license movement to the Split-CP. These deictic features have two possible sources: either complete feature innovation from a universal deictic semantic repertoire, or the generalisation and novel reanalysis of intrinsic proximal/distal deictic features on demonstratives. The particular C-head Fin^0 was lexicalised, which following Sigurðsson (2004, 2010) is capable of hosting separate syntactic deictic features relating to speaker time and speaker location. The drop in temporal adverbials in EModE shows that the former was not lexicalised but modern LI with LOC.PP-to-C movement is the result of the innovation of the former, i.e. [u:LOC] on Fin^0. Finally, LOC.PP-to-C would be impossible without verb movement if Fin had remained verbal, as it was in V2. Thus, the innovation of [±LOC] feature checking on Fin coincided with the reanalysis of verbal Fin as a nominal Fin enabling the LI operation. However, a generic verbal Fin remained for other inversion operations, e.g. wh-fronting, QI and NI. Thus, not only was a new microparametric value exapted in EModE from a previous mesoparameter, I have also shown that phonologically-null heads equally as susceptible to exaptive reanalysis as overt heads or inflectional morphology. The old and new analyses can be compared (43a,b):

(43)

a. $[_{ForceP}[_{Force'}[_{TopP}[_{PP_i}$Of þese seuene heuedes$][_{Top'}[_{Top}^0][_{FinP}[_{PP_i}][_{Fin'}$comen$_t[_{TP}$ PP$_i[_{T'}$ V$_t[_{vP}$ PP$_i[_{v}$ V$_t[_{VP}[_{DP}$ alle manere of synnes$][_{V'}[_{V_t}][_{PP_i}]]]]]]]]]]]]]]$ **Middle English**

b. $[_{ForceP}[_{Force'}[_{TopP}[_{PP}$ into the room$][_{Top'}[_{Top}^0][_{FinP_i}[_{Fin'}[_{Fin}^0][_{TP_i}[_{T'}[_{T}^0][_{vP}[_{v'}[_{v}^0$came$][_{VP}[_{DP}$ John$[_{V'}[_{V0_t}][_{PP_i}]]]$….   **Modern English**

In sum, the exaptive reanalysis of English LI is a diachronic operation of last resort. Any possible analysis was found, not explicitly due to ambiguity, FE or IG; but rather because the PLD provided superficial evidence of a residual structure which was otherwise completely opaque. Only via recourse to deixis, which I consider a cognitive (third factor) universal, could children regularise the input and innovate LI with the current feature configuration. Further quantitative research into definiteness effects could shed further light on the diachrony of LI.

5. CONCLUSION

This thesis has shown that exaptation is not a fundamental process of language change itself, but rather a valuable classification pertaining to the acquistional circumstances leading to radical reanalyses of formal features. The primary catalyst for exaptive change is the breakdown of primary conditioning factors, which enable children to make sense of the PLD and recreate the target parametric model. When these are removed, children are unable to make sense of the distribution of morphological, morphosyntactic or syntactic structures. Willis (2016) argues obsolescent structures are liable to exaptation, i.e. grammatical structures which have become isolated and obscured in the PLD; I have gone further and shown that the target model becomes so opaque that acquisition is impossible. I predict that in most cases structures will be acquired later and later as they become more obsolescent until reaching complete opacity (§3.1.3). This was argued for the exaptive reanalysis of adjectival gender inflection in Afrikaans (Lass 1990) as the quality of triggers for grammatical gender disintegrated from MD to EModD to Afrikaans.

Moreover, exaptive reanalysis is distinct from standard reanalysis. Standard reanalysis relies on ambiguity and FE to choose between multiple analyses, while exaptive reanalysis can occur only if any possible analysis is left over after the original becomes unacquirable (§3.2). The child is able to make sense out of incoherent PLD probing the grammar for any

perceived similarity. The new analysis can be based on existent features being copied from existent heads, or via recourse to general cognitive third factors which shape the way humans process language.

This thesis has contributed by showing it possible to further classify opacity into two subgroups (§4.1). Opacity caused by the breakdown of PCFs, thus inhibiting acquisition, is most prolific. A second kind of opacity is caused by Grammar Competition (Kroch 1994) for the same feature sets on two different realisations. This is inherently unstable due to FE and/or the BE, as children cannot incorporate doublets into their I-language because one realisation obscures the other during CLA. However, rarely, the losing variant survives via specialisation (Kroch 1994), which I have argued constitutes a special type of exaptation.

Finally, the case study on LI has provided valuable results. Firstly, it has shed light on the development of LI in English. Secondly, in parametric terms exaptive reanalysis seems able to invent parameters from nothing and is predicted to follow a path from more pervasive to increasingly item-specific parameters. The innovation of LI shows this pattern; after the breakdown of V-to-T and V2 mesoparameters, inversion became progressively more obsolescent until it became completely opaque. Not only did a LI microparameter appear from the wreckage of former mesoparameters, but locative adverbials were able to find any possible analysis due to a cognitive proclivity to make sense out presentational structures in terms of spatial deixis. Moreover, the exaptive feature reanalysis of LI proves a valuable test case for the exaptation of syntax in minimalist terms. Most importantly, it has shown, in generative terms, that syntax be exaptively reanalysed and even phonologically-null heads are exaptable when other parameters governing their acquisition change radically via breakdown. Further research on exaptive feature reanalysis in the syntactic domain can shed on the hierarchical typology of such changes, and the child's ability to find coherent analyses for seemingly unacquirable parameter values.

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