Lynn Anthonissen

*Individuality in Language Change*
Acknowledgments

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Abbreviations

(.) level of significance: $p < 0.10$
(*) level of significance: $p < 0.05$
(**) level of significance: $p < 0.01$
(***) level of significance: $p < 0.001$

ACI Accusativus cum Infinitivo ‘accusative and infinitive’
ARCHER A Representative Corpus of Historical English Registers
BNC British National Corpus
CHILDES Child Language Data Exchange System
CLMET Corpus of Late Modern English Texts
COHA Corpus of Historical American English
EC-Model Entrenchment-and-Conventionalization Model
ECCO Eighteenth Century Collections Online
ECM Exceptional Case Marking
EEBO Early English Books Online
EM EMMA Medium (see EMMA)
EMMA Corpus of Early Modern Multiloquent Authors
EQ epistemic qualification
Evans Evans Early American Imprints
FSP Functional Sentence Perspective
ICC intraclass correlation coefficient
NCI Nominativus cum Infinitivo ‘nominative and infinitive’
OCR Optical Character Recognition
OED Oxford English Dictionary
PAM Partitioning Around Medoids
PCU verb perception/cognition/utterance verb
PPP prepositional passive
PPCEME Penn-Helsinki Parsed Corpus of Early Modern English
PPCMBE Penn-Helsinki Parsed Corpus of Modern British English
PPCME Penn-Helsinki Parsed Corpus of Middle English
TCP Text Creation Partnership

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Part I: Introduction
1 Introduction

All too often, even though language change necessarily involves change in the speech habits of speakers, linguists have treated speakers as if they were somehow irrelevant to the process of language change.
— Joseph (1992: 127)

The present work starts from the simple, nearly trivial observation that what we understand by language—“the collective art of expression” (Sapir 1921: 246)—must be intrinsically connected to the people who put it to use.¹ The nature of this connection and its relevance for language change, however, are still poorly understood, in part because historical linguistics has traditionally looked at language change as an aggregate, community-level phenomenon, with little regard for individual differences in how language is processed and produced. As Joseph (1992) and others long before him have suggested (see, for instance, the early works by Osthoff and Brugmann 1878 and Paul 1920), the scientific study of linguistic change will benefit from a change of perspective, one that allots individual speakers the attention they deserve.

Pursuing this line of inquiry, the present study has singled out two interconnected case studies of constructional change in English that provide the empirical foundation for exploring the interaction between the individual and the communal. Specifically, I examine the cognitive and social mechanisms underlying the spread of two special passive constructions—the prepositional passive and the nominative and infinitive—in five generations of early modern writers. The following excerpt from one of Oldmixon’s works illustrates a prepositional passive in the first clause (was prevailed upon) and a nominative and infinitive (or NCI) in the final clause (be said to V).

(1) But the King was prevailed upon to consent to it, by a pathetical Letter from the Earl himself; which Letter is mentioned by Whitlock, but with this Doubt, A Letter was said to be sent.
(0180300300, John Oldmixon, 1727)

In general terms, the aim of this book is twofold. The historical-descriptive or philological objective consists in providing a detailed analysis of the rise of the special passives in Early Modern English, how these constructions came into being

¹ Several ideas and some results presented in this book have appeared in journal articles and book chapters, some co-authored with other members of the Mind-Bending Grammars project team; see Appendix, Section 10.4 for details.

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and how their communal expansion pans out in individual usage. The broader theoretical and methodological objective is to further our understanding of language as a complex adaptive system, which holds that “[t]he structures of language emerge from interrelated patterns of experience, social interaction, and cognitive processes” (Beckner et al. 2009: 2). By viewing individual speakers as non-static agents within the macro-system, complex adaptive systems theory also speaks to various issues relating to individuality in language (change). Central questions this work aims to shed light on include the extent of interindividual variation, the possibility and nature of lifespan change and how these constellations at the micro-level scale up to changes at the macro-level of language.

In what follows, I will delineate the general theoretical issues that are at stake, set out the research questions that crystallize from this discussion and present a first sketch of the corpus and methods. I will end this introductory chapter with an outline of the chapters that follow.

1.1 Issues at stake

Grounded in usage-based and constructionist approaches to language which hold that linguistic knowledge is shaped and reshaped by experience (e.g. Goldberg 1995; Croft 2001; Bybee 2010; Schmid 2020), the work presented in this book takes as its starting point the idea that no two speakers have the same mental grammar. While the existence of individual differences in language use has been attested extensively in corpus-linguistic research (e.g. Coniam 2004; Barlow 2013; Schmid and Mantlik 2015) and even forms the backbone of research and applications in related fields (e.g. stylometry and authorship attribution, forensic linguistics), an increasing body of research now indicates that this holds true not only for language use, but also for L1 acquisition of core grammatical constructions (Chipere 2001, 2003; Dąbrowska and Street 2006; Street and Dąbrowska 2010, 2014). Street and Dąbrowska (2010), for instance, demonstrate that native speakers may differ substantially in their attainment of constructions that are generally considered part of the core grammar of a language (e.g. passives and quantifiers), thus challenging the widely-held belief that children converge on the same grammar despite substantial variation in language input (e.g. Crain and Thornton 1998). Language development has also been shown to exhibit effects of education (Mills and Hemsley 1976; Street and Dąbrowska 2010, 2014) and socioeconomic status in general (Ginsborg 2006; Pakulak and Neville 2010).

Given these facts, it is only natural that usage-based linguistics has long moved past the idea that linguistic theory must be “concerned with the ideal speaker-hearer, in a completely homogeneous speech-community, who knows its language
1.1 Issues at stake

perfectly” (Chomsky 1965: 3). Yet, the bulk of work is still concerned with the average speaker-hearer, which, though closer to psychological reality, nevertheless entails decontextualization because individual differences are obscured. While making generalizations about language constitutes the core business of linguistics, we must be aware that significant interspeaker differences exist, which, as I will argue in the following paragraph, has important consequences for usage-based models of language, and language change in particular.

Linguists (of various persuasions) have usually treated grammatical change as happening at the level of speech communities to a shared system of communicative conventions succinctly referred to as ‘the language’ of that community. However, these changes ultimately represent the cumulative effect of recurrent changes across a substantial set of individual language users whose innovative behavior reflects adjustments in the mental representation of their linguistic knowledge. In other words, conventionalization (‘language change’ rather than ‘innovation’) takes place when several such individual grammars are aligned during interaction. While this is often implicitly or explicitly acknowledged (e.g. Fischer 2010: 182; Traugott and Trousdale 2013: 46; Baxter and Croft 2016; Noël 2016), few studies of grammatical change have operationalized the notion of the “linguistic individual” (see Johnstone 1996). Admittedly, there is a large body of research within (historical) sociolinguistics that deals with interspeaker variation, social networks and the role of individual speakers in ongoing change (see Bergs 2005; Nevalainen et al. 2011; Raumolin-Brunberg and Nurmi 2011; Nevalainen 2015a, to name a few). For practical reasons, these studies are often limited to changes associated with high frequency elements, such as phonological change, and lexical or morphological change. Typical examples of the latter are replacement changes such as thou → you in the pronominal domain and the replacement of the third person singular ending -th → -s in verb conjugation. Intragenerational changes relating to syntactic constructions mostly stay out of the picture, yet their study may add significantly to our understanding of language change because—among other differences—syntactic patterns are less likely to be socially indexed (see Labov 2001: 28–29).

In keeping with the usage-based constructionist research program, the individual dimension is not only valuable for a social analysis of change, but also and perhaps especially, given the emphasis on it being a “psychologically plausible, generative theory of human language” (Hoffmann and Trousdale 2013a: 3), for a cognitive analysis of change. Analogy, for instance, a domain-general cognitive process (see Gentner et al. 2001; Itkonen 2005) that is recognized as one of the major mechanisms of language change (see De Smet and Fischer 2017 for an overview), strongly invites an individualist perspective, as it operates essentially at the micro-level of the individual mind: while the process itself may be largely subliminal, it is individuals who perceive similarities between linguistic elements, by virtue of
which they can abstract over concrete instances and align novel utterances with existing schemas. The same arguably holds for such usage-based notions as entrenchment, chunking and categorization. Given the natural connection between cognitive processes and the individual mind, it is surprising that usage-based corpus linguists in general, and diachronic construction grammarians in particular, have largely refrained from integrating the cognitive dimension into their studies (see also Noël 2016; Hilpert 2018). If we are serious about the cognitive commitment, research on language (change) as an abstract structure must be complemented by research on variation and change in the linguistic individual. As pointed out by Schmid and Mantlik (2015) and De Smet (2016b), variation in language use reflects differences in how language is cognitively represented. Therefore, “any patterns or tendencies found in this variation may reveal something about the organization of mental representation” (De Smet 2016b: 251), and, I would add, possibly also about the extent to which the adult mind can adapt to ongoing linguistic change.

Related to the focus on individuals are theoretical and methodological considerations of lifespan change. If we assume that individual mental grammars change, and if we find ways to attest and chart such changes, this could shed new light on the highly polarized debate on language change, emanating from two conflicting views on the fundamental nature of language acquisition and language change. Broadly speaking, research embedded in the generative tradition assumes the existence of a Universal Grammar, an initial state of the grammar, that is hard-wired in the brain and “passes through a series of states in early childhood, reaching a relatively stable steady state that undergoes little subsequent change, apart from the lexicon” (Chomsky 1995: 14). Proponents of this view typically consider children as the primary instigators of change (e.g. Lightfoot 1979; Clark and Roberts 1993; Henry 1997).

Conversely, usage-based/constructionist approaches attribute a central role to language use in both the acquisition process and in language change. Children are argued to construct their linguistic knowledge from the input and learn grammatical ‘rules’ by generalizing over item-specific instances (Tomasello 2003), or lack thereof (see statistical preemption, e.g. Boyd and Goldberg 2011), rather than analyzing that input in terms of predefined, innate categories. Linguistic change is considered to originate in speaker interaction (in line with sociolinguistic findings), which implies that it is not solely or primarily initiated by children (see Aitchison 2001: Ch. 14; Bybee 2010: Ch. 6; Traugott and Trousdale 2013: 21), in part because they do not actively participate in the social networks that propagate changes through a population. Bybee (2010: 116), referring to a study by Slobin (1997), furthermore argues that children might not have developed the skills to advance complex changes such as the development of epistemic meanings in grammaticalization: “The type of inferencing that is necessary for semantic change to proceed
in grammaticalization is something that children learn later in development”. It follows that speakers may adopt novel constructions both in childhood and later in life, a view that is strongly opposed to the idea discussed earlier that a person’s grammar is fixed by the time they become adults.

If the possibility of lifespan change is not precluded \emph{a priori}, it will have to be established in which forms linguistic malleability past adolescence may manifest itself. Community-level descriptions of change have consistently shown that constructional environments are pivotal in facilitating the emergence and spread of novel patterns and features (e.g. De Smet 2013; Petré 2014). Constructional environments include the immediate patterns that a construction collocates with, but the term may also point to related constructions in a network, which may mutually influence each other if speakers pick up on their similarity. Applied to the lifespan of individual speakers, the question arises whether such environmental or network effects can also be attested at the level of the individual. In other words, do related constructions coevolve in individual usage? The present study aims to add to this discussion by tracking the use of the special passives across the adult lifespan. Longitudinal studies of this kind are still few and far between, for obvious reasons: the scarcity of resources that are suitable for the study of syntactic change combined with the individual lifespan approach has long prevented researchers from undertaking such studies (see Chapter 2 for a literature overview).

### 1.2 Research questions and methodology

The preceding discussion has highlighted several areas in which the study of individual speakers could inform theories of language change. Defined more precisely, the major goal of this work is to shed light on three fundamental questions:

1. How do variation and change at the individual level interact with change at the community level?
2. Is there evidence for constructional change in syntactic constructions past adolescence? If so, how closely do lifespan changes follow community trends?
3. Are related linguistic patterns (such as the special passives) associated in individual mental grammars? If so, do these constructions influence each other’s development in individual usage?

To gain insight into the cognitive and social forces that drive linguistic change, the present study selected two interrelated linguistic constructions that undergo significant change in the history of English. In particular, this monograph concentrates on the prepositional passive (2), i.e. passive constructions whose subject corresponds to the nominal complement of a preposition in the active, and the nom-
inative and infinitive construction (3), a type of passive that features a perception, cognition or utterance verb (PCU verb) followed by a to-infinitival complement.

(2) Prepositional passive
   [SBJ be V-ed (X) P]
   a. They were laughed at.
   b. They are taken notice of. [X=NP]
   c. They are cried out against. [X=ADV]

(3) Nominative and infinitive
   [SBJ be V_{PCU}\text{-ed to } V_{INF}]
   a. He is said to be a thief. [utterance verb]
   b. He is assumed to be a thief. [cognition verb]
   c. He was heard to say: “It wasn’t me”. [perception verb]

Both types of passives constitute innovations of the Middle English period, but become more firmly established in Early Modern English when they significantly increase in frequency and become more productive. The prepositional passive, for instance, expands to more complex entities such as phrasal-prepositional verbs (e.g. cry out against) and other multi-word expressions (e.g. take notice of) (Visser 1973), while the passive with infinitival complement starts to overtake its active counterpart in frequency (Dreschler 2015) and is found to be exploited as a marker of evidentiality (Noël 2008).

Recent work has connected the rise of these special passives with the increased need for topical or unmarked subjects after word order changes established SV(O) as the default sentence pattern (Los 2009; Dreschler 2015). Stricter syntactic requirements for the sentence-initial position meant that objects and adverbials carrying old information could no longer be used as unmarked linkers to the previous discourse (a feature of the Old English V2 system). Passivization presented itself as a convenient means to obtain a similar effect: a given object could be turned into an unmarked subject to sit in its preferred clause-initial linking position. This is corroborated by a general increase of the regular passive in Early Modern English (Seoane 2006). In brief, the expansion of the special passives in Early Modern English presents itself as an interesting case study to explore individual trajectories in language change against the backdrop of temporal language dynamics in the community as well as the sociocognitive mechanisms underlying these processes.

The intention to analyze the diachrony of linguistic constructions both at the micro-level of the individual mind and at the macro-level of the community poses significant methodological challenges. The most critical one is the lack of corpora
that systematically integrate these two dimensions. A major goal of the *Mind-Bending Grammars* research project (ERC H2020 639008; PI Peter Petré), of which the present study is a result, was to develop such a resource and make it available for other researchers interested in these questions. The result of this undertaking is the EMMA corpus (*Early Modern Multiloquent Authors*), which will be discussed in more detail in Chapter 5. In brief, the EMMA corpus is a large-scale specialized corpus (ca. 90 million words) that comprises the writings of a selection of 50 individuals across 5 generations of seventeenth-century authors. The set of criteria to be fulfilled by the prospective authors included, among other things, a long career with sufficient material across career stages (amounting to a minimum of 500,000 words per author), a demonstrable link with London, and social, political and stylistic connections within and across generations. EMMA comes with a rich metadata database (containing, among other things, social network information and mobility data collected from the authors’ biographies) and a corpus query and annotation tool (see Manjavacas 2016; Manjavacas and Petré 2017), which was used for the retrieval and linguistic annotation of the special passives.

### 1.3 Outline

This introductory chapter is followed by eight chapters, which are divided into two main parts (Parts II-III) plus a concluding part (Part IV) that summarizes the findings and offers some directions for further research. Part II, consisting of Chapters 2 to 4, concentrates on theories of language change and the historical development of the special passives. This will provide the necessary theoretical and historical background to the analyses in Part III, which focus on the interplay between individual and communal aspects of change, as documented in the written production of the 50 EMMA authors, who hail from various interconnected communities of practice.

The opening chapter of Part II (Chapter 2) establishes a framework for the integration of individual-level knowledge into a comprehensive theory of grammar, that is, a theory that seeks to capture the properties that give rise to both dynamicity and stability in language. Chapter 3 elaborates on the rise of the passive in light of the historical changes English underwent, which involved the decline of the verb-second rule and the fixation of SVO word order. It provides the larger, systemic context in which the passive could expand to new construction types such as the NCI, the prepositional passive and the recipient passive. Chapter 4 will then zoom in on the individual histories of the prepositional passive and NCI construction, paying particular attention to the linguistic environments in which they arise. Chapter 3 and 4, in other words, concentrate on the aggregate developments that
have traditionally been the focus of language change research. They demonstrate, primarily from a language-internal perspective, why these cross-linguistically rare passives arose in English when they did and how their spread fits a larger picture of change.

Part III seeks to examine the role of individuals in communal change. It starts with a chapter (Chapter 5) on the design and compilation of the EMMA corpus as part of the Mind-Bending Grammars project, which constitutes the methodological answer to the desiderata laid out in Chapter 2. Chapters 6 and 7 present the results of the corpus studies in EMMA for the prepositional passive and the NCI, respectively. The main objective is to shed new light on the interaction between individual and communal aspects of constructional change (see question 1, Section 1.2). Additionally, these chapters will address the question of lifespan change (see question 2, Section 1.2). Chapter 8 compares the two constructions in order to explore whether related constructions (such as the special passives) are associated in individual usage (see question 3, Section 1.2), which offers novel insights into constructional taxonomies. Chapter 9 concludes this work by recapitulating the main arguments, discussing the implications for linguistic theory and identifying potential avenues for further research that could address some of the unresolved issues that the present research will inevitably open up.
2 A theory of language change

2.1 Introduction

One of the most fundamental puzzles in linguistic theory is the question of how and why language changes. Important insights into the mechanisms of change have been put forward by various schools, yet several areas remain underexplored, which has led to a particular bias in historical linguistics. Most notably, research of the last few decades has treated linguistic change as happening to an abstract object ‘language’, that is, the focus has been on change in linguistic conventions. While making generalizations about language use is a valid and important objective in itself, we must be aware that changing conventions ultimately represent the effect of innumerable interactions between individuals speakers, whose linguistic knowledge is continually adjusted by processes of entrenchment. Failure to integrate the individual dimension of linguistic change is a missed opportunity not only to understand the workings of language change, but also of language use more generally. Studying individuals in their social contexts during the process of language change provides a unique window on the cognitive and social mechanisms that underlie the emergence of grammar. A comprehensive theory of language change must seek to capture both dimensions.

This chapter aims to make these ideas more explicit and is organized as follows. Section 2.2 lays out the requirements for a comprehensive model of language that can accommodate the interaction between unique and shared knowledge. It is argued that the variable yet structured nature of language can be modeled if language is conceived of as a complex adaptive system. Section 2.3 contends that cognitive construction grammar is well suited to examine language as a complex adaptive system, as it provides the proper methodological and theoretical tools to do so. At the same time, it is clear that this potential has not been realized in most constructionist research to date. In Section 2.4, I address this methodological gap by zooming in on individual and communal aspects of change. The aim is twofold: first, advancing our understanding of the interaction between these two systemic levels; and second, addressing the question of lifelong learning and lifespan change.

2.2 Desiderata

This chapter subscribes to the usage-based premise that a theory of language change is first and foremost a theory of language use (Larsen-Freeman 1997: 148; https://doi.org/10.1515/9783110725841-002
Fried 2013: 419). In linking diachronic change and synchronic variation, it aims to offer a panchronic perspective on language (see Weinreich et al. 1968; Heine et al. 1991: 261; Hickey 2010). Among theories that put usage center stage, two research traditions were particularly prominent in the second half of the twentieth century: historical sociolinguistics and grammaticalization theory. A brief discussion is provided in the first part of this section because these theories offer important insights for the approach taken in this book. It will also become clear, however, that they cannot function as a comprehensive theory of language change. These issues are discussed in the second part of this section. A major shortcoming is that the individual dimension is not (sufficiently) integrated. The final part of this section, then, lays out the desiderata for a model of language that is both psychologically plausible and unites its intrinsically variable yet systematic nature.

The landmark paper by Weinreich et al. (1968) and the book-length study by Romaine (1982) marked the onset of the subfield of linguistic inquiry that has come to be known as historical sociolinguistics. A major contribution of this early paper is the insight that structuredness is not to be equated with homogeneity; language, it is argued, whether examined synchronically or diachronically, must be viewed “as an object possessing orderly heterogeneity”, that is, structured variation (Weinreich et al. 1968: 100). A fundamental construct of this theory is the linguistic variable: “alternate ways of saying ‘the same’ thing” (Labov 1972: 188). Importantly, these linguistic alternatives carry social significance, that is, their values are stratified across groups of socio-economic class, gender, age, and/or ethnicity. Since the work of Milroy and Milroy (1985), social network relations gained importance and later still variation is associated with “conscious or unconscious acts of social identity” (Auer et al. 2015: 9), which emphasizes that “variation does not simply reflect, but also constructs, social meaning” (Eckert 2012: 87). Language change is conceived of as “the inevitable by-product of linguistic interaction” (Weinreich et al. 1968: 150), a continuous process of alternating linguistic and social change: it sets in when a variant spreads through a subgroup of the speech community and becomes indexical of that group; it can then spread to other linguistic contexts until new groups arrive that reinterpret the ongoing change and thereby enable new changes (Weinreich et al. 1968: 186–187). The competition of variants is key.

The foundations for grammaticalization theory were laid in a series of seminal studies published toward the end of the twentieth century (most notably, Heine et al. 1991; Traugott and Heine 1991; Hopper and Traugott 1993; Lehmann 1995). Broadly speaking, grammaticalization theory is concerned with the development of grammatical functions from lexical expressions and examines the various processes that affect the functional and formal aspects of grammaticalizing expressions. The grammaticalization criteria offered by various strands of research within this paradigm have emphasized different aspects of change. Two major
views have crystallized over the years: one that typifies grammaticalization as reduction and another that views it as expansion (Traugott 2010; Traugott and Trousdale 2013; Coussé et al. 2018; Cuyckens 2018). The former approach characterizes grammaticalization as bringing about a reduction in the autonomy of a sign (see Lehmann’s (1995) parameters of grammaticalization and such notions as phonological attrition, semantic bleaching and decategorialization). The latter approach highlights structural and semantic-pragmatic expansion and has been most clearly articulated by Himmelmann (2004). Common to both vantage points, however, is the gradualness of change, which hinges on small-scale, local changes. Another crucial point is that old and new meanings or forms may coexist at a given moment in time. For example, while be going to V in Present-Day English is an established future marker, particular instances may still represent the older use of physically going somewhere with the intention to V; similarly, the construction with the contracted form gonna is found alongside the full form. This phenomenon is known as layering (see Hopper 1991). Overall, grammaticalization studies have provided the historical linguist with a wide range of tools to describe a variety of language-internal¹ processes involved in the emergence of grammar.

Over the past decades, historical sociolinguistics and grammaticalization theory have significantly advanced our understanding of language change. The core insight, implicit in both approaches but arrived at differently, is that diachronic change and synchronic variation are inherently related (see Weinreich et al. (1968) for historical sociolinguistics and Heine et al. (1991: 258–261) for grammaticalization theory). Historical sociolinguistics has focused on the competition of two (or more) linguistic variants, whereas grammaticalization theory accommodates the coexistence of constructions with varying degrees of grammaticalization at a given point in time. A similar analogy links synchronic gradience and diachronic gradualness.

In both cases, the models are particularly suited for specific types or aspects of change. Historical sociolinguistics has strong explanatory force when it comes to the propagation of change, which has often been modeled as an S-shaped adopter distribution, that is, a slow-quick-slow trajectory (e.g. Kroch 1989; Labov 1994; Chambers 2002; Nevalainen and Raumolin-Brunberg 2017).² S-curves typically follow the evolution of some kind of proportion across time, for instance the proportion of relevant instances that have succumbed to the innovation or the

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¹ While language-external mechanisms have traditionally received less attention in the grammaticalization literature, Heine and Kuteva’s (2003, 2005) model of contact-induced grammaticalization has put them firmly on the research agenda.

² See Blythe and Croft (2012: 279–280) for an overview of linguistic changes that have been approximated by an S-curve in the literature.
proportion of speakers adopting the incoming variant. Such a percentage scale works well when there is a binary choice between the old and new variant, e.g. pronominal thou/you, third-person singular suffix -th/-s, (ir)regularization of tense marking in pairs like dived/dove, [hw]/[w] variation in words like which and whine in Canadian English (see Nevalainen and Raumolin-Brunberg 2017; Chambers 2002). Accordingly, S-curves have been used to approximate the trajectories of so-called “replacement changes” (Blythe and Croft 2012: 278) with much empirical success. The approach is ill-suited, however, when there are no two competitors or an otherwise well-delineated set of expressions for ‘saying the same thing’. For example, with regard to the prepositional passive, Denison (2003: 66) wonders:

If [the prepositional passive as in Fran will be frowned at] was an innovation, what did it replace? An active with the indefinite pronoun man or me as subject? That is indeed a close equivalent in function to the passive, but it wasn’t the only one, and after the fifteenth century it was no longer in contention, yet the prepositional passive continued to spread.

The innovation and propagation of the prepositional passive is but one example where linguistic change is not the outcome of two expressions competing for the same function. Arguably, most changes in language do not fit the stringent variationist model of change, which requires researchers to “find a good linguistic variable” (Tagliamonte 2006: 83), i.e. forms that are (i) functionally equivalent or near equivalent and (ii) correlated with social factors (see supra and Tagliamonte 2006: Ch. 5). This creates an imbalance regarding the phenomena that are studied. For instance, abstract linguistic structure such as syntactic phenomena are less likely to be socially indexed (Labov and Harris 1986: 21; Labov 2001: 28–29), and have therefore received little attention. Another criticism is that historical sociolinguistics has failed to provide a satisfying account of innovation, i.e. how the specific variants that are central to their studies arise; most of the time, their existence is simply presupposed, or introduced by contact (see the discussion in Croft 2000: 54–55). It is clear, then, that despite its merits the sociolinguistic model of change is too confined to present a comprehensive model of change. The same holds for grammaticalization theory, which naturally has explicitly targeted a specific set of changes (roughly, from lexical to grammatical or from grammatical to more grammatical) and has primarily been concerned with the emergence of grammatical structure.

Another bias, apparent in historical sociolinguistics and grammaticalization theory, but in other subdisciplines as well, is the negligence of the individual dimension. As Sapir (1921: 246) has pointed out, our collective ways of expression reflect “thousands upon thousands of individual intuitions”. Speaking about language and language change in abstract terms easily detracts from the fact that it is not a
unified phenomenon. If we say that language is emergent, so is language change: changes to linguistic conventions can only come to the surface if a critical number of speakers in a given community adjust their use of that convention. To fully understand the nature of language change, it will be beneficial to investigate to what extent community-level changes are reflected in individual speakers.

In grammaticalization theory, the reality of individual grammars is not contested but has not been thematized either, in part because grammaticalization is viewed as an epiphenomenon bearing solely on what Sommerer (2018: 274) calls the “speaker-external” dimension. Sommerer (2018: 274) goes on to say that “[w]hereas a system can undergo some re-interpretation in time with elements grammaticalizing, the individual speaker generally does not actively ‘grammaticalize’ things”. Raumolin-Brunberg and Nurmi (2011: 262) are much more cautious to exclude the possibility of grammaticalization in the individual, but state that it is generally difficult to observe grammatical change across the lifespan because the processes involved in grammaticalization tend to be slow. They add that large-scale longitudinal data would make it possible to explore this question in more detail. Recent studies on grammaticalization in individual speakers, which draw on such large datasets, have indicated that Sommerer’s statement indeed calls for qualification (see e.g. Petré and Van de Velde 2018; Anthonissen and Petré 2019). Beyond the concept of grammaticalization per se, it is generally implied that particular processes involved in grammaticalization originate in the minds of individuals (e.g. reanalysis, analogy, inferencing). In other words, grammaticalization theory is not incompatible with the assumption that language change is both a cognitive and social phenomenon, but the distinction and interaction between individual and community grammars has not often been made explicit, let alone systematized.

Sociolinguists have periodically explored how individual variation relates to sociolinguistic structure, a question already voiced in an early paper by Guy (1980) and taken up in more recent work (e.g. Meyerhoff and Klaere 2017). Some other recent papers have also specifically expressed the need for investigating cognitive factors (e.g. Tamminga et al. 2016; MacKenzie 2019). Such undertakings are at odds with traditional work in (historical) sociolinguistics, which has repeatedly declared the primacy of the community over the individual (e.g. Weinreich et al. 1968; Labov 2006, 2012; Eckert 2019). For instance, in his influential work on the social stratification of English in New York city, Labov (2006: 5) states: “Language [...] is an abstract pattern, exterior to the individual. In fact, it can be argued that the individual does not exist as a linguistic entity.” Acknowledging that the prerequisite of change must be innovation by individual speakers, the Milroys follow a more moderate course (Milroy and Milroy 1985: 345; Milroy 1992: 77). Idiolectal aspects have also become more visible in third-wave sociolinguistics, where language users are no longer viewed as passive adopters of the community
standards, but as social agents, who actively construct social identities (Eckert 2012; Auer et al. 2015). Even though stylistic practice now figures prominently in sociolinguistic theory, the primary focus is still on social embeddedness, i.e. the way speakers construct their social identities. Individuals are not an object of interest in themselves except as interactors in a speech community, defined by their social histories and memberships (e.g. the density of their social networks, mobility, age cohort, community of practice).

A comprehensive framework for understanding language acknowledges that language is both a cognitive and social phenomenon and seeks to do justice to both dimensions. A central question then is how such a theory can best model the linguistic relations between grammars as grounded in individuals’ experiences, and grammar (singular) as an alignment phenomenon in the community flow. This question entails three desiderata for a theory of grammar. First, it should be able to accommodate the uniqueness of individual grammars. Secondly, while variation is pervasive, cognition, social embedding and experiences are also to a large extent shared between humans. The ensuing systematicity of grammar must equally be accounted for. In particular, a theory of language must seek to uncover how variation is structured and how community grammar emerges as a macro-phenomenon, which is not the mere sum of individual parts. A third objective is to model the relations between the individual and the community, that is, to clarify how unique and shared knowledge are dynamically related. In doing so, this theory of language seeks to capture and reconcile the properties that give rise to both dynamicity and stability in language.

Recent approaches that aim to factor in the intrinsically variable yet systematic nature of language commonly refer to language as a “complex adaptive system” (Steels 2000; Beckner et al. 2009; Bybee 2010; Ellis 2011; Van de Velde 2014; Beuls and van Trijp 2016; Schmid 2020).³ Such a system is characterized by the following key features:

(1) a. The system consists of multiple agents (the speakers in the speech community) interacting with one another.

b. The system is adaptive; that is, the speakers’ behavior is based on their past interactions, and current and past interactions together feed forward into future behavior.

c. A speaker’s behavior is the consequence of competing factors ranging from perceptual mechanisms to social motivations.

³ See Holland 1992 for other types of complex adaptive systems in human behavior.
2.3 Construction grammar

The structures of language emerge from interrelated patterns of experience, social interaction, and cognitive processes.

(Beckner et al. 2009: 2)

A view of language as a complex adaptive system requires a framework that offers both the methodological tools and theoretical concepts to analyze the various components of the system. While every theory of language covers grammar’s systemic aspects (i.e. linguistic ‘rules’ or ‘conventions’), few theories explicitly address the vast linguistic diversity that follows from the interaction of non-static entities. That is, dynamicity does not only lie in the interaction of agents (1a), but also in the agents themselves, as their grammars are continuously reshaped by experience and therefore inherently dynamic and non-identical between experiential phases (1b)–(1c).

Assumptions on the dynamicity of the agents themselves cannot readily be accommodated within theories of grammar that rely on idealized speaker-hearer communities such as those of generative grammar. In such models, linguistic knowledge, or at least an ‘initial state’ of it, is hard-wired in the brain (Chomsky 1965: 3) as a kind of ‘language organ’ (Paikeday 1985), relegating variable input to the realm of superficial noise (Berwick and Chomsky 2016). Sociolinguistics, by contrast, departs from the idea of idealized speakers and embraces the reality of inter- (and intra-)speaker variation. As pointed out above, this variation is argued to be socially motivated. In other words, sociolinguistics has tried to establish how variation is constrained by delineating groups of people that are more likely to share linguistic conventions. Variation resulting from individual differences in cognition (e.g. different cognitive routines or abilities) is not usually addressed (but see some recent work, e.g. Tamminga et al. 2016; MacKenzie 2019). In Section 2.3, I will argue that construction grammar offers a descriptive framework that is naturally compatible with the premises of language as a complex adaptive system.

2.3 Construction grammar

It has been argued thus far that a comprehensive and psychologically plausible theory of language—and by extension language change—needs to pay more attention to individual differences between language users than is typically done. In this section, I would like to argue that cognitive construction grammar is a suitable framework to do so, but has so far insufficiently embraced this opportunity. I will use the terms ‘construction grammar’ and ‘constructionist’ to refer to the family of cognitive, usage-based strands of construction grammar; for a comparison with
other formalisms such as Sign-Based CxG, Fluid CxG and Embodied CxG, see Ziem and Lasch (2013) and Hoffmann and Trousdale (2013b).

Cognitive construction grammar (Goldberg 1995, 2006a; see Boas 2013 and Ziem and Lasch 2013 for overviews; see also the closely related framework in Croft 2001) has been claimed to agree well with the premises of language as a complex adaptive system (Beckner et al. 2009; Ellis 2011; Croft 2014) and its adherents have explicitly aspired to psychological plausibility (Tomasello 2003; Allen et al. 2012; Boas 2013; Hoffmann and Trousdale 2013a; Pulvermüller et al. 2013). In practice, however, constructionist approaches have not fully embraced the individual dimension of this premise. This holds true especially for diachronic analyses, where construction grammar predominantly serves as a descriptive framework for exploring the structural properties of linguistic change, while the cognitive commitment that a constructionist approach entails is lacking or left implicit (see Noël 2016; Hilpert 2018). In fact, few studies outside acquisition research⁴ have explicitly tried to make systematic observations about features of individual speakers’ grammars, or how their interaction leads to a community grammar as an emergent macro-phenomenon.

From a constructionist perspective, individual constructional networks presumably contain rich contextual information, keeping track which use of which construction is appropriate in which context (called the “sociolinguistic monitor” by Labov (2012: 266)). People have been shown to switch smoothly between communities of practice, using different types of language. The role of communities of practice or text types would appear to be of great relevance to corpus-based studies of individual behavior within a constructionist framework. Yet sociolinguistic concepts have received relatively little attention in construction grammar, although there have been some attempts to integrate them (e.g. Kristiansen and Dirven 2008; Croft 2009; Harder 2010; Hollmann 2013; Hilpert 2017b; see also Hoffmann and Bergs 2018 specifically on genre as a sociocognitive construct). To adequately assess what it means to share constructional properties with peers, it is essential to take the richness of an individual’s context into account whenever possible.

In general, then, patterns of individual language use have hardly been an object of interest in themselves, and their interaction with communal patterns remains underexplored. Sections 2.3.1 and 2.3.2 highlight the main areas of opportunity for

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⁴ Individual differences in competence have received much attention in research on language acquisition and processing (e.g. Schmidt 2012; Dörnyei 2014; Dąbrowska 2015; Kidd et al. 2018; Dąbrowska and Andringa 2019) and multilingualism (e.g. Michael and Gollan 2005; Hulstijn 2015; Nichols 2017; de Bruin 2019).