Nadine Dietrich*

The seamlessness of grammatical innovation: the case of *be going to* (revisited)

https://doi.org/10.1515/flin-2024-2004
Received February 20, 2023; accepted October 23, 2023; published online February 16, 2024

Abstract: In this paper, I revisit the continued debate surrounding manner of grammatical innovation, i.e. whether it is ABRUPT or GRADUAL. I show that the debate is complicated by different diagnostics for manner and argue that it is best understood in terms of DEGREE OF SIMILARITY (how similar the innovative use is to existing uses of a construction). However, even when adopting degree of similarity as a diagnostic, approaches differ with regards to how similar they find innovative and existing uses. The GRADUALNESS account argues that innovative uses are similar but distinct from existing uses, as they imply a new form-meaning pairing. A SEAMLESSNESS account instead argues that innovative and existing uses are so similar that no new form-meaning pairing is required. I develop seamlessness into a theoretical position for semantic innovation in grammaticalization, which holds that grammatical innovations are maximally similar to existing uses i.e. they exhibit considerable conceptual overlap and the existing use is semantically underspecified. Seamlessness is empirically tested using semantic innovations in *be going to* as a case study.

Keywords: futurity; gradualness; grammaticalization; innovation; semantic change

1 Introduction

In grammaticalization lexical items take on grammatical functions and grammatical items take on further grammatical functions and thus become further syntactically and morphologically integrated (Haspelmath 1998; Hopper and Traugott 2003; Lehmann 2015). The intricacies of this process are however much debated in historical linguistics. One of the most contentious questions is how grammatical innovation proceeds. Are grammatical innovations discrete steps and thus abrupt? Or do they emerge gradually from existing uses? Disagreement on this point is commonly attributed to different understandings of innovation.

***Corresponding author: Nadine Dietrich**, Department of Linguistics and English Language, University of Edinburgh, Edinburgh, UK, E-mail: Nadine.Dietrich@ed.ac.uk

Open Access. © 2024 the author(s), published by De Gruyter. This work is licensed under the Creative Commons Attribution 4.0 International License.

Accounts that assume reanalysis as the main mechanism in innovation go for abruptness, while traditions that assume other mechanisms (e.g., analogy, grammaticalization) go for gradualness. This is however not the whole story, because even accounts that argue for the abruptness of innovation argue that innovations in actualisation, i.e. sequences of innovations, are gradual.

In this paper I will give a typology of different accounts of manner of innovation and make the case that semantic innovation in grammaticalization is seamless. Specifically, I will demonstrate that disagreements in the manner of innovation debate can be attributed to different diagnostics for manner. I will show that diagnostics used to defend abruptness, i.e. CONSEQUENCES (how catastrophic the consequences of an initial innovation are) and UNPRECEDENTEDNESS (whether an innovative use has occurred before) are poor diagnostics. Instead, I will argue that DEGREE OF SIMILARITY (how similar the innovative use is to existing uses) is the best way to understand the manner of innovation. Both reanalysis and no-reanalysis approaches recognise that innovative uses are similar to existing uses but disagree on the degree of this similarity. The former argue that although similar, innovative uses imply a small step to a new *grade* from existing uses and signify a new form-meaning pairing. I will refer to this as GRADUAL INNOVATION. The latter argue that innovative and existing uses are so similar that innovation is *seamless* and almost goes unnoticed. I will refer to this as SEAMLESS INNOVATION. I will demonstrate that the two give different accounts of innovation not only with regards to manner but also in terms of conditions, mechanisms and consequences of semantic innovation.

I propose that seamless innovation gives a preferable account of semantic innovation in grammaticalization and will present results from a case study on *be going to* in support. The case study is a qualitative and quantitative diachronic corpus analysis, which looks at five semantic innovations in the grammaticalization of *be going to.* Instances were gathered from a purpose-built corpus, the Corpus of Early and Late Modern London Playwrights (CELMLP), and manually semantically annotated. The different innovations of *be going to* were conceptualised in a frame semantic framework. Frame semantics makes more explicit the larger conceptual structure associated with a meaning and is thus ideal for identifying potential seamlessness.

The theoretical commitments of this paper are in line with usage-based construction grammar (Bybee 2010; Croft 2001; Goldberg 2006). Linguistic knowledge is assumed not to be innate, but to be shaped by usage and domain-general processes, making language a complex adaptive system (Bybee 2010: 1–2; Schmid 2020: 10). The theory assumes a non-modular representation of linguistic knowledge with no clear distinction between syntax and lexicon (Croft and Cruse 2004). The basic unit of linguistic knowledge are constructions, i.e. symbolic pairings of form and meaning (Bybee 2010; Croft 2001; Goldberg 1995). The formal side of the construction consists

of syntactic and phonological information, the meaning side comprises semantic, pragmatic and discourse-functional information (Croft 2001: 175; Goldberg 2006: 5). Constructions are seen as abstractions over stored usage-events (exemplars) but can also be abstractions over other constructions (Goldberg 2006: 58–59; Traugott and Trousdale 2013: 13–14). Linguistic knowledge constitutes a structured inventory of constructions in a taxonomic network, where different levels of abstraction are connected via inheritance links, which signal their meronymic relations (Croft and Cruse 2004: 262; Goldberg 1995: 67; Traugott and Trousdale 2013: 61).

The paper is structured as follows: in Section 2, I will give a typology of different approaches of innovation and manner of innovation and develop seamlessness specifically into a position on semantic innovation in grammaticalization that is in contrast to gradual innovation. In Section 3, I will present evidence from a diachronic corpus study of *be going to* as a case study to test seamlessness. Section 4 will discuss the findings and explore further applications for seamlessness.

2 How innovations emerge

2.1 A typology of innovation and change

Before talking about the manner of innovation, it is useful to consider what it is we mean by innovation. In the following, I will give a typology of accounts of language change in relation to innovation and in this align my own position with that of functionalist and cognitivist theories of change. Since we are interested in innovation in grammaticalization, the focus will be on grammatical innovation and change.

While theories of language change differ widely, most theories make reference to three different phenomena related to change: INNOVATION, ACTUALISATION and PROPAGATION.

INNOVATION is a synchronic phenomenon which takes place within the grammar of an individual. It means the first encounter of an expression in an hitherto unprecedented way (Croft 2000: 31–32 on "altered replication"; Hopper and Traugott 2003: 46; Labov 1969: 110; Roberts 2007: 126). The first time a speaker uses (or a hearer understands) *be going to* to not make reference to a motion event is, for instance, innovative.

ACTUALISATION is seen as a diachronic process that follows reanalysis (ascribing a new underlying structure to an existing construction). It means the spread of an expression to new contexts, syntactic uses or meanings following an initial innovation (Andersen 2001; Croft 2000: 120; De Smet 2012; Himmelmann 2005; Hopper and Traugott 2003: 47; Labov 2007 on "transmission"). Traugott and

Trousdale (2013: 120) for instance argue that the semantic reanalysis of *a lot of* from partitive to quantifying meaning is a first micro-step (e.g., *there is a lot of people*) followed by a syntactic reanalysis of *a lot of* as a full quantifier (e.g., *there are a lot of people*).

PROPAGATION is understood as the diachronic spread of an innovation throughout the speech community, sometimes also referred to as conventionalisation (Croft 2000: Ch. 7; Hopper and Traugott 2003: 46; Schmid 2020 on "conventionalization"; Weinreich et al. 1968: 186). *Be going to* for instance is thought to be conventionalised by the 18th century, as this is when the number of users and instances of *be going to* increases (Budts and Petré 2016; Petré and Van de Velde 2018).

Approaches differ with regards to which of these phenomena they consider integral to their conception of language change. These differences arise from different conceptions of language and assumptions about change. We can identify broadly two positions, INNOVATION-MEANS-CHANGE, which generativists support, and CHANGE-FOLLOWS-INNOVATION, which cognitivists and functionalists support.

The innovation-means-change position holds that language changes when language learners adopt novel underlying analyses. This position follows from the generativist view that language is the property of an individual, characterised by universal parameters and principles. In this view, innovation is a hearer-based process that takes place during language acquisition, when children set parameters differently from the parent generation due to ambiguity in the input they get (Lightfoot 1997: 174–176; Roberts 2007: 124). Children will initially go on producing instances that on the surface could be analysed in their parents' grammar. Eventually, children will produce instances that clearly deviate from surface representations of what the parent generation would produce (Roberts 2007: 126). Generativists refer to this as actualisation. As such, innovation is synonymous with change and actualisation follows change. Propagation merely means that change is transmitted to further generations (Lightfoot 1997: 175–176).

This approach relies on Universal Grammar as an innate capacity for language and language acquisition as the locus of language change. Both have however been contested by cognitivists, who have argued that language can be acquired with a combination of domain-general faculties and usage (Tomasello 2010) and that children are likely not the drivers of change (Bybee and Slobin 1982). Also, functionalists and cognitivists see language as a property of a speech community rather than of an individual, which means that changes in an individual grammar are not enough to speak of language change (Croft 2000: 26).

Functionalist and cognitivist approaches to innovation can thus be characterised as change-follows-innovation, which is also the approach I will adopt in this paper. Here innovation is seen as a condition for change, but not a sufficient one at that. This is because innovations can be mere one-off occurrences in a particular

speaker or hearer (Croft 2000: 4–5; Hopper and Traugott 2003: 45–46). To count as change, an innovation needs to spread throughout the rest of the speech community and thus requires propagation. Change also involves actualisation, as actualisations are seen as sequences of innovations that follow an initial innovation (Hopper and Traugott 2003: 51). As such, each actualisation is an innovation itself as it implies the use of a construction in an unprecedented way.

The idea of actualisation being a sequence of related innovations highlights that innovation, while being a synchronic phenomenon, must also be investigated from a diachronic perspective in terms of the questions "what enables innovation?", "*how* does innovation occur?" and "what is the *manner* in which it comes about?". This brings us to the question of the manner of innovation, which will be discussed in the following section.

2.2 A typology of diagnostics for manner

There is a continued debate about how the manner in which innovations emerge can be characterised. The debate is traditionally framed in two mutually exclusive positions, abruptness and gradualness. In this section, I will show that some disagreements in this debate can be linked to different ways of diagnosing the manner of innovation (CONSEQUENCES, UNPRECEDENTEDNESS) and argue that the best diagnostic for manner is DEGREE OF SIMILARITY.

Consequences are taken as a diagnostic by Lightfoot, who is situated in the generativist tradition. He argues that parametric change, which causes innovation, is abrupt, because it has catastrophic consequences, as it effects clusters of seemingly unrelated surface changes (Lightfoot 1997: 174–176). Consequences however seem a poor diagnostic, because the consequences of any event do not necessarily relate to how that event has come about: The consequences of pouring water into a vessel can be catastrophic when you pour in so much water that it overflows, but this does not mean that the vessel did not gradually get to the point of overflowing.[1]

Unprecedentedness is a diagnostic that is supported both by some generativists as well as some functionalists and cognitivists. They argue that innovation is necessarily abrupt, because innovations are unprecedented, i.e. they have not occurred before: "when an innovated form B enters the grammar alongside of an older form, it does so abruptly: an Ewe language user either does or does not use *bé* as

1 Lightfoot (1997) uses a similar metaphor about the temperature of water gradually increasing until the 'catastrophic' consequence of turning into steam, but to make a different point, i.e. that dramatic changes can happen after relative stability (Lightfoot 1997: 174). This is however not what is contested here. What is contested is that the idea that catastrophic consequences must mean that these consequences have emerged abruptly.

a complementizer" (Hopper and Traugott 2003: 46). This unprecedentedness means that the hearer needs to have a new analysis to comprehend the innovation and thus implies a discrete step (Roberts and Roussou 2003: 202; Traugott and Trousdale 2013: 52, 76).

Unprecedentedness is also a problematic diagnostic, because speaking of the unprecedentedness of innovations is tautological: innovations are by definition unprecedented, but this does not mean that the way they emerge is abrupt. The argument further runs the risk of overemphasising the difference between conventional and innovative language use, which is especially undesirable from a usage-based perspective. Usage-based linguistics argues that even conventional language use is to some extent innovative. This is because every instance of language use implies a unique combination of moment in time, speaker and addressees and their respective mental states (Croft 2000: 104). Unprecedentedness can thus not reliably differentiate between innovative and conventional language use.

I propose that the debate should instead be framed in terms of degree of similarity, i.e. how similar an innovative use is to existing uses. Proponents of this diagnostic argue that innovative uses of a construction are very similar to existing uses and that their emergence can thus be called gradual. Degree of similarity is most evident in what De Smet has termed the cascade model of grammatical change (De Smet 2016: 85). The model argues that grammatical innovations are more likely to occur if their "deviation from convention is so minimal as to be (almost) undetectable" (De Smet 2016: 86). Because differences between existing and conventional uses are so minimal, these types of approaches do not rely on reanalysis as a mechanism. Instead, they argue that grammatical innovations "preserve the identity of the construction" (Haspelmath 2004: 28). In his study, De Smet (2016) shows that innovative uses of *key* in clearly adjectival positions (e.g., *key and important issues*) are very similar to existing uses of *key* that are not clearly nominal (e.g., *the key official documents*). He argues that due to this similarity the innovative adjectival uses of *key* do not require reanalysis but are licensed by existing uses.

Degree of similarity is a much more appropriate diagnostic for innovation because it puts the focus on what enables an innovation rather than its consequences. It is also more in line with usage-based linguistics as it emphasises the similarities between innovative and conventional language use rather than the differences. It even features as a diagnostic in approaches that otherwise argue for abruptness on the basis of unprecedentedness. These approaches argue that innovations in grammaticalization might seem gradual, because they play out in micro-reanalyses, where each new analysis is only minimally different from the former. They however hold that this gradualness is only epiphenomenal, because even if the difference between two analyses is minimal, it is a difference nonetheless and thus implies a discrete step (Hopper and Traugott 2003: 47; Labov 2007: 236 on

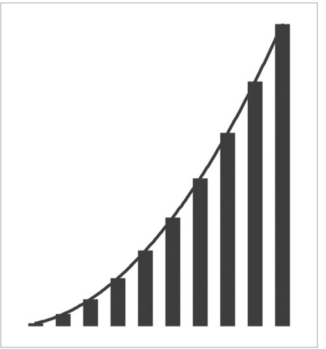

Figure 1: The calculus analogy of seamless and gradual innovation.

"incrementation"; Roberts 2010: 47; Roberts and Roussou 1999: 1037; Traugott and Trousdale 2013: 57).

We can thus discern two different accounts of innovation based on degree of similarity: the first argues that innovative uses are so similar to existing uses that they can be licensed under one construction. I will refer to this as SEAMLESS INNOVATION, as this highlights the "sneaky" (De Smet 2012: 605), "undetectable" (De Smet 2016: 86) and "imperceptible" (Haspelmath 2004: 28) nature of grammatical innovation. The latter argues that innovative uses are very similar to existing uses, but since they are not identical, they imply different analyses. I will refer to this as GRADUAL INNOVATION because it implies that each innovation signifies a new grade (or step).

The difference between the two accounts can be nicely illustrated with an analogy from calculus, where a "continuous curve can be treated as a series of discrete infinitesimal steps" (Roberts 2010: 47) (see Figure 1). Seamlessness argues that the curve is really continuous and that the discrete steps are a mere approximation. The gradualness approach instead argues that the curve only seems continuous and actually consists of very small discrete steps. Thus, while both look at the same phenomenon (innovation) with the same diagnostic (degree of similarity) they nonetheless signify different accounts of innovation.

2.3 Seamless innovation versus gradual innovation

In this section, I will further develop seamless innovation[2] into a theoretical position and contrast it with gradual innovation in terms of CONDITIONS, MECHANISMS and

2 In contrast to previously mentioned approaches, seamlessness will be defined as a property specifically of semantic innovation. This is because diagnosing syntactic seamlessness is much more

CONSEQUENCES. I will then give reasons why seamlessness pre-empirically gives a preferable account of semantic innovation in grammaticalization and how the possibility of a seamless account can be tested empirically.

Conditions: Seamless innovation assumes that innovative uses of a construction occur, when that construction has an existing use that the innovative use is very similar to. I will refer to this use as enabling use. The enabling use (a) has substantial conceptual overlap with the innovative use, (b) is semantically underspecified, and (c) is sufficiently well entrenched. We will look at (a–c) in turn:

(a) Substantive conceptual overlap means that the innovative and the enabling use share a conceptual structure with few idiosyncrasies on either side. Speakers are more likely to use a construction innovatively, when innovative and enabling uses are maximally similar to one another, as this minimises the deviation from convention (De Smet 2016: 86).
(b) Semantic underspecification means that the enabling use is not fully specified in some parts of its conceptual structure and that it does not need to be fully specified for interpretation to succeed (Denison 2017: 293). These underspecified parts of conceptual structure will be exactly those in which the enabling and innovative uses differ.[3]
(c) Speakers can exploit the underspecification of the enabling use to produce innovative uses.
(d) Sufficient entrenchment means that the enabling use is so well-entrenched that it can more easily license innovative uses. De Smet (2016: 86) argues that "the more readily retrievable a conventional use of an expression is, the better are its chances of being used also in similar but unconventional ways".

We can illustrate this with the innovation of the meaning intention in *be going to* (e.g., *I'm going to believe you*). At the time of this innovation, *be going to* already has the meaning of motion-with-a-purpose (e.g., *I'm in a rush, I'm going to deliver these letters*), which can be seen as an enabling use for intention: there seems to be substantive conceptual overlap as both meanings imply that the subject intends to carry out a future event but differ as motion-with-a-purpose implies a motion event, while intention does not. Motion-with-a-purpose seems to be semantically

theory-dependent and would require endorsing one syntactic framework over another, which is outside the scope of this paper (Denison 2010: 105; De Smet 2014: 26).

3 See also Dension on this "vagueness is crucial, because only inferences that are underdetermined by the semantics can be added pragmatically" (Denison 2017: 295).

underspecified with regards to its motion event, as many motion-with-a-purpose instances seem to background the motion event (e.g., *What's new? – I am going to visit my aunt*). There is also evidence that motion-with-a-purpose instances have increased in frequency by the time intention is innovated, which indicates better entrenchment (Petré 2019: 170).

Gradual innovation instead assumes ambiguity as a precondition for innovation. Ambiguity posits that an existing construction can, given the context, yield different analyses, one that is associated with the existing construction and an innovative one (Diewald 2002: 103; Hopper and Traugott 2003: 52; Roberts 2007: 131). Ambiguity might seem similar to underspecification, but the two are in fact distinct concepts. The crucial difference is that ambiguity implies two or more distinct interpretations and "something hangs on the choice" (Denison 2017: 293). Underspecification, on the other hand, means that the analysis can be left underspecified without interfering with interpretation.[4]

In the case of *be going to*, ambiguity presupposes that the language user either interprets *be going to* as meaning intention or motion-with-purpose. Underspecification, on the other hand, means that the degree of motion involved is left unspecified and does not need to be specified for interpretation to succeed.

Mechanisms: Seamlessness assumes that innovation is a mostly speaker-based process that works by exploiting the underspecification of an enabling use. This can happen in two ways: profile manipulation and contextual implicature.

Profile is a concept from Cognitive Grammar and refers to the part of the conceptual structure that a word foregrounds ("profile") against the rest of the conceptual structure ("base") (Langacker 2013: 66). If an enabling use is underspecified in terms of the degree to which a conceptual entity is profiled, speakers can innovate by manipulating this degree of profiling. For instance, since motion-with-a-purpose is underspecified with regards to how much the motion event is profiled, speakers can then exploit this underspecification by backgrounding the motion event to such an extent that it gives rise to an intention reading.

Some parts of conceptual structure can be underspecified because they are not part of the coded meaning of the construction but are rather contextually inferred.

4 Denison further argues that vagueness and ambiguity apply to different stages of language change (including grammaticalization): vagueness is likely to be "the enabler of change 'from below'" (Denison 2017: 318), while ambiguity is rather the outcome of change (see also De Smet 2009: 1792). De Smet (2009: 1749) similarly points out that semantic changes proceed from "constructional monosemy over vagueness and polysemy to homonymy".

Speakers can innovate by using a construction in a context that invites the hearer to fill in the underspecified parts of conceptual structure (Denison 2017: 293–294; Traugott and Dasher 2001: 38). Third person instances of intention *be going to* (*John is going to come to Yoga tonight*) carry the contextual implicature that the speaker is talking about someone else's intentions, but the epistemic source of the speaker's assertion is underspecified: it is not clear how much they rely on their knowledge or on conjecture (Disney 2009: 35). Speakers can exploit this underspecification by producing instances that imply more conjecture and thus give rise to a prediction reading (*See, John is going to come to Yoga tonight, he's brought his yoga mat*).

Gradualness instead assumes that innovation works by reanalysis. This usually means that the hearer understands an utterance to have a different analysis from what the speaker intended, although Traugott and Trousdale (2013) argue that speakers can also be the locus of reanalysis (Hopper and Traugott 2003: 52; Roberts 2007: 122–123; Traugott and Trousdale 2013: 52–55, 91). Semantic reanalysis is mostly based on contextual inferencing (which is the hearer-based equivalent of contextual implicature; Hopper and Traugott [2003: 94–98]; Roberts [2010: 68]). Hearers come up with an innovative analysis by inferring a different meaning based on the context the construction is used in. Hopper and Traugott (2003: 3) for instance argue that motion-with-a-purpose *be going to* allows the contextual inference that if someone is going somewhere in order to do something they also will do it in the future. This inference then enables the reanalysis of *be going to* as an auxiliary with futural meaning.

Consequences: Seamless innovation assumes that innovative uses of a construction arise as instances of an already existing, enabling use. This means that innovative uses are fully licensed by the existing construction and do not signify a new analysis. This is because the innovative use can be got at on the basis of the underspecification of the enabling use. With repeated use, the innovative use may become separately stored and might thus license further innovations (De Smet 2009 on "automation", 2016: 87). Innovative uses of *be going to* such as intention would thus be seen as full members of the construction, licensed by its similarity to the motion-with-a-purpose use (Denison 2017; De Smet 2014, 2016 on "analogy"). When the innovative use becomes better and separately entrenched, it allows the seamless innovation of further uses such as prediction (Budts and Petré 2016).

Gradual innovation, instead, argues that the innovative use cannot be fully licensed by the existing construction and thus qualifies as a new form-meaning pairing. This view is most evident in Traugott and Trousdale's (2013: 56–57) account of innovation. They illustrate what innovation looks like from a hearer-based

perspective: the hearer understands an utterance in a novel way which cannot be sanctioned by an existing construction. The hearer thus creates a construct, a temporary form-meaning pairing, that is enriched with pragmatic and phonetic detail informed by the actual usage-event but cannot be matched to a construction which would fill in the semantic detail. Using the best-fit principle, the hearer identifies constructions that are phonetically and pragmatically similar to the construct, but imply a mismatch, because the construct is only partially sanctioned by them. They argue that innovative uses of *be going to* had to be partially aligned with an auxiliary construction to make sense of its futural meaning (Traugott and Trousdale 2013: 117).

In this section, I have shown that seamless innovation and gradual innovation give different accounts of semantic innovation in the context of grammaticalization. Table 1 summarises the differences.

The remaining question is: which of these two accounts is more adequate for the explanation of semantic innovations, specifically in the context of grammaticalization?

Pre-empirically, seamlessness seems much more sensitive to the unique characteristics of grammatical constructions and grammaticalization than gradualness. Grammatical meanings are often expressed by closed-class items and are paradigmatically related to one another, and their selection is often obligatory (e.g. Diewald 2020: 281). Grammatical items tend to be more frequent and highly conventionalised and automated (Traugott and Trousdale 2013: 95). When expressing grammatical meanings, language users will thus be inclined to be as conventional as possible, because deviations in the domain of grammar are more conspicuous than in the lexicon (De Smet 2016: 86). Similarly, in grammaticalization, lexical forms come to express grammatical meaning and compete with existing highly conventional and entrenched grammatical constructions. This process typically takes a long time, spanning many generations and does not

Table 1: Differences between seamless and gradual innovation.

	Seamless innovation	**Gradual innovation**
Condition	Enabling use with conceptual overlap, underspecification and sufficient entrenchment	Ambiguous contexts
Mechanism	Contextual implicature and profile manipulation via exploitation of the underspecification (mainly by the speaker)	Contextual inference via reanalysis (mainly by the hearer)
Consequences	No new form-meaning pairing, extension of existing construction (enabling use)	New form-meaning pairing, only partial alignment with existing constructions

necessarily come to full completion (Haspelmath 1998; Lehmann 2015). For grammaticalization to proceed, innovative uses have to be accessible enough that they would be repeated again and again.

The seamless account of grammatical innovation is much more in line with these characteristics, precisely because it lowers the bar for innovation and makes it seem less like a problem that needs to be solved and more like conventional language use (Croft 2000: 118). Gradualness instead argues that innovations imply a mismatch between syntax and pragmatics that only gets resolved in time.

The remaining question is whether, from an empirical point of view, seamlessness and gradualness would make different predictions, given that both recognise a degree of similarity between innovative and existing uses. Mechanisms and consequences of innovation cannot be tested with the methods of historical linguistics and could only be approximated with experimental methods. Conditions for innovation could however be used as a way to differentiate between the two accounts. Seamlessness predicts that innovations only emerge if there is an enabling use with features such as conceptual overlap, underspecification and sufficient entrenchment. Seamless innovation would be invalidated, if we find that a semantic innovation occurs without there being an enabling use. If we do find that there is an enabling use, this is a strong indication for the validity of the seamless account.

3 Case study: innovations in *be going to*

In this section, I will empirically test the possibility of the seamlessness account by looking at innovations in the semantic development of *be going to* from a lexical item to a future-time expression.

3.1 Previous approaches

Be going to as a posterchild for grammaticalization has received a lot of attention in the diachronic literature. Most researchers assume a two-step trajectory of semantic change for *be going to*, from motion-with-a-purpose to intention to prediction (Bybee and Pagliuca 1987; Danchev and Kytö 1994). Bybee and Pagliuca (1987) argue that there are metonymic extensions from motion-with-a-purpose first to intention which later gets further abstracted to prediction (Bybee 2006; Bybee and Pagliuca 1987).

Other approaches have broken the motion-intention-prediction pathway down into a more fine-grained trajectory that might suggest seamlessness. Disney (2009), for instance, argues that new meanings in *be going to* progressively develop away from a given prototype. He breaks the motion-intention pathway down into

two intermediate steps and suggests a development from motion present purposive ("I am going to visit her now") to motion future purposive ("They are going to meet him tomorrow") to non-motion future intention ("I'm going to be here at 6 pm") (Disney 2009: 34–35). The shift from intention to prediction, he argues, starts with non-motion future intention instances with 3rd person subjects ("he is going to kill her"), as they necessarily involve some "guesswork" (Disney 2009: 35–36). Disney argues that all of these uses can be seen as peripheral extensions of the original motion future purposive use. He argues that predictive uses only develop later and slowest because they are furthest away from the agentive core domain. Budts and Petré (2016) argue along similar lines that instances where speakers report on the intentions of others signal a lack of certainty that then becomes the basis for the predictive meaning to develop. Petré (2019) also argues that the co-occurrence with topicalization, passives and present tense assertions contribute to the emergence of intention and prediction as these contexts (de)profile different parts of the meaning of the source assembly such as control, movement and intention.

Another suggested two-step pathway is that of *be going to* from motion-with-a-purpose to a relative future marker to deictic future marker (Garrett 2012: 66–71; Hopper and Traugott 2003; Traugott and Trousdale 2013). This pathway rests on the observation that many early non-motional instances of *be going to* mainly refer to imminent events (Budts and Petré 2016: 13; Danchev and Kytö 1994). This notion of imminence is thought to have arisen from the use of the progressive on *go* as it makes it seem that the agent is already taking steps towards carrying out the future event in the *to*-purposive (Hopper and Traugott 2003: 89).

While both pathways are to a certain extent historically attested, the intention-prediction pathway seems better attested than the relative-deictic future pathway. This is because early instances of *be going to* are not always imminent (Danchev and Kytö 1994: 63), whereas instances of predictive *be going to* are really only attested from the early 18th century onwards (Petré 2016: 130).

3.2 Corpus and methodology

The above-mentioned recent studies come very close to suggesting seamlessness; especially Disney ("guesswork") and Petré ("deprofiling") are reminiscent of the idea of "underspecification". However, having had different research agendas, these investigations do not make clear how these innovations arise seamlessly, especially with reference to changes in the conceptual structure. I have thus conducted another diachronic corpus investigation with the specific aim to identify innovations in the semantic development of *be going to* and their respective enabling uses and the seamless development from one to the other. This crucially

implied devising a more fine-grained semantic framework for modelling the meanings of *be going to* to identify underspecification and conceptual overlap.

The investigation was carried out on a corpus that was specifically built for the investigation of innovations in English future-time expressions, the Corpus of Early and Late Modern London Playwrights (CELMLP). The corpus comprises 11 generations of playwrights born between 1550 and 1769 and has around 10 mil. words. The idea behind the corpus was that innovations and future-time expressions are more likely to be found in speech-based genres such as plays. To control for confounding factors such as geography as much as possible, the corpus exclusively features plays written by playwrights who spent most of their childhood in the south of England and at some point in their life were writing for the London stage.

The texts were sourced from EEBO (*Early English Books Online*) and LION (*Literature Online*). The corpus was not compiled according to year of publication or first performance but according to year of birth of the author. This is both for practical and theoretical reasons. The practical reason is that due to the theatre closures during the civil war between 1642 and 1660 only very few plays can be found for that period, which would leave a big gap in the data (Randall 2014; Wiseman 1998). Looking at generations rather than publication dates avoids this gap. The theoretical reason is that following a usage-based conception of linguistic knowledge, speakers of the same generation are more likely to have made similar experiences with language and are thus more likely to be similar in the type of linguistic knowledge they have acquired and the innovations this linguistic knowledge would license.

The corpus was searched for every instance of the *going to V* sequence. Major spelling variations were included but did not make a difference in the end. Only instances of *going to* were included where *going* and *to* were a sequence with a maximum of one word between them that was not a locative phrase (e.g. “Sir” or “now”). This search returned 503 instances of *be going to* and shows a general increase of instances from 6 instances in generation 1 to 142 in generation 11. Each of these instances was then manually semantically annotated.

Overall, I have identified five innovations and their respective enabling uses in the semantic development of *be going to* (see Table 2).

Table 2: Enabling use and innovations for *be going to*.

Enabling use	Innovation
Motion-with-a-purpose	Motion backgrounded
Motion backgrounded	Intention
Reported intention	Prediction over intention
Plan	Prediction over non-intentional propositions
Ongoingness	Predetermination, intention, present indication

In the following sections, I will show how the emergence of each innovation from its respective enabling use can be shown to be seamless. I will do so by giving frame-semantic analyses of the above-mentioned meanings. Frame semantics is a framework for semantic analysis that argues that constructional meanings are not feature-based or monolithic but instead evoke larger conceptual structures (frames) that are interconnected with other conceptual structures. Frames can make background knowledge and assumptions about meanings more explicit (Fillmore 1975: 124–125, 1976: 25–26). They signify a "system of concepts related in such a way that to understand any one of them you have to understand the whole structure in which it fits" (Fillmore 2008: 275). Frames also show how conceptual structure maps unto syntactic structure and are thus compatible with constructionist approaches. Commercial events for instance can be viewed as frames with specific *event participants* (e.g. buyer, seller, goods, money). Different verbs connected to this frame foreground and background different participants depending on their relation to the syntactic roles they are linked to. *Buy* obligatorily expresses the buyer and goods but can leave the price and the seller unspecified, whereas *cost* specifies the goods and the price but can be underdetermined with regards to buyer and seller. This shows that even if some event participants are unexpressed, they still remain part of the overall conceptual structure that is being evoked (Fillmore 1976: 25).

Using frame semantics, I will demonstrate the conceptual overlap between innovation and enabling use and identify parts of the conceptual structure of the enabling use that may be underspecified or vague. I will also test whether innovations usually occur at a time when the enabling use is better entrenched than it was before thus making it more likely for an innovation to occur. This was tested by looking at whether there has been a significant increase of enabling use instances by the time the innovation occurs. The significance was tested using Kendall tau-b, a correlation coefficient, which tests whether there is a positive correlation between an observed pattern and time. Kendall tau-b is preferable to other types of correlation coefficients such as Pearson's product-moment correlation because it makes less assumptions about potential outliers and specific distributions (Gries 2013). In addition to a *p*-value, it also returns a measure for effect size (tau-b).

3.3 Results

3.3.1 Motion backgrounded innovation

The first meaning *be going to* is associated with is motion-with-a-purpose. Motion-with-a-purpose has a complex conceptual structure (see Figure 2). It

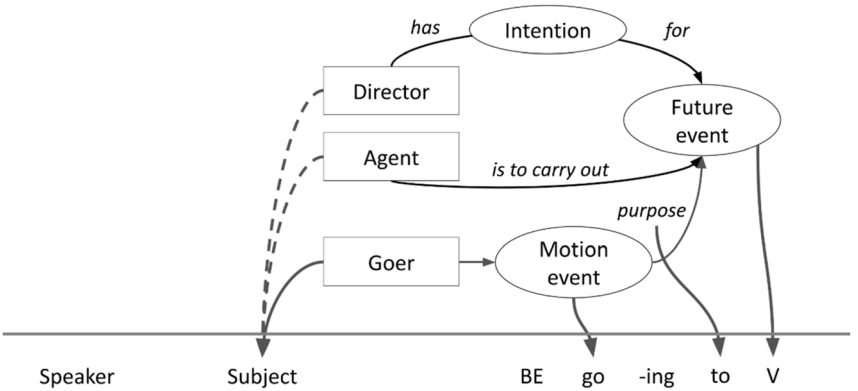

Figure 2: Motion-with-a-purpose frame.[5]

combines two types of structures, a motion structure expressed by *go* and a purposive structure expressed by *to V*. The motion structure entails a goer (expressed by the subject), who is engaged in a motion event. The purposive structure contains what I will refer to as a directive[6] structure and a purpose relation. This directive structure underlies many root modal notions including volition, intention, purpose and deontic modality: it implies that there is a director (a person, group of people or any other type of authority) that is in a mental state of intending for a future event to happen. There is also an agent that is obligated to carry out the future event.

5 Here are some pointers on how to read the frame diagrams: the diagrams show conceptual structure (above) and syntactic structure (below), separated by a thick grey line. Thick grew arrows between the two show how conceptual structure maps onto syntactic structure. Dashed thick grey arrows signify that the relevant event participant may be left syntactically unexpressed. Components of conceptual structure are expressed through geometrical shapes: rectangles signify event participants, ovals signify actions, events and states. Dashed outlines signify the backgrounding of an event participant (i.e. weaker activation). Arrows between the shapes express relations between participants and events/states/actions. Syntactic elements are written out in plain text and include next to *be going to* also the complementing verb (V), its subject and the speaker. Note that BE and *-ing* express temporal and aspectual information that have been left out here to reduce complexity.

6 The paper takes the position that reference to the future is always modally mediated (e.g. Copley 2009; Giannakidou and Mari 2018; Langacker 1987; Tyler and Jan 2016), broadly either via directive frame (i.e. that contains a director that wants something to happen in the future, which broadly corresponds to deontic modality and volition) or via an evaluative frame (which involves a speaker evaluation, usually in terms of likelihood, which includes epistemic modality, but also boulomaic modality).

(1) [Motion-with-a-purpose]
*And sometime he calls to speake vnto the King, And I am **going to** certifie vnto his grace, That euen now he cald alowd for him.*
Queene: *Go then good Vawse, and certifie the King.*
(1592, William Shakespeare [*1564], *Henry VI*)

Motion-with-a-purpose is the enabling use for the seamless emergence of the motion-backgrounded innovation (see Figure 3).

Motion-with-a-purpose and motion-backgrounded share all of their frame elements. The only difference is that the motion structure in motion-backgrounded is backgrounded. This happens in contexts where other parts of the frame get more focus. We can thus assume that motion-with-a-purpose can, depending on the context, be underspecified regarding the degree to which the motion structure is foregrounded and thus yields instances, where it is backgrounded, as can be seen in (2):

(2) [Motion backgrounded]
a. Enter Clem. *What newes with you?*
Cle. *I am now **going to** carry the Captaines a reckning.*
Besse. *And what's the umme?*
(1601, Thomas Heywood [*1573], *The fair maid of the west*)
b. Bel. *Where's all his money?*
Orl. *Tis put ouer by exchange: his doublet **was going to** be translated, but for me.*
(1630, Thomas Dekker [*1572], *The Honest Whore*, Part II)

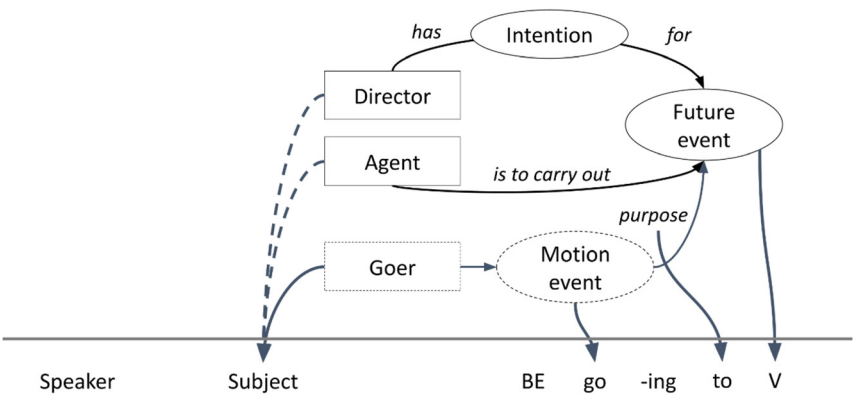

Figure 3: Motion backgrounded frame.

In (2a), we find that there is no clear reference to motion outside of *going:* Clem is being asked what is new with him rather than where he is going, and the following conversation focusses more on the purpose than on the motion event. The motion structure is thus backgrounded here owing to the underspecification of how much motion needs to be included. Example (2b) has elsewhere been classified as an early intention instance, completely lacking motion mainly because it has an inanimate subject and occurs with the passive (Garrett 2012; Traugott and Trousdale 2013). While it is clearly possible, it seems unlikely for multiple reasons. First, Dekker uses *be going to* only a total of six times in his dramatic work and never in his non-dramatic works. All other instances clearly imply motion. Thus, it seems unlikely that he would use a purely intentional use, especially in such an intention-untypical context (passive, inanimate subject). Second, the actual meaning of the instance is not at all obvious, taken out of context and for a present-day reader. In the scene, Bellafront and Orlando, a servant, talk about Bellafront's husband, Matteo, who, as it transpires in the scene, is a gamester and lost his money and some of his possessions (his cloak and sword) in a game of dice. In (2b), Bellafront asks what happened to his money. We first learn that he lost his money in the game and also that Matteo might have even put up his doublet if Orlando had not stopped him. *Translated* is here best understood as something being used as a wager, in the sense of 'being transformed into something'. *Go* is here not used in its active sense of controlled motion, but likely in its more passive sense of transfer. Particularly the sense "of a resource: to be used for or put towards a particular purpose. Esp. of money: to be used to pay for or finance something; to be expended or spent on something" (*OED*, "go", v., 42a.) is very fitting here since the doublet was to be used as a wager.

The motion-backgrounded innovation occurs only after motion-with-a-purpose has already occurred. In my corpus, the first occurrence of motion-with-a-purpose is in the first generation (*1550–1570), but motion-with-a-purpose instances in other corpora date back to the 15th century (Núñez Pertejo 1999: 135–137). Motion-backgrounded first occurs with the second generation (*1570–1589). There is however no significant increase of motion-with-a-purpose instances by the time motion-backgrounded instances occur. This is probably due to the time span covered by the corpus. Motion-with-a-purpose *be going to* has been in use in the periods before the corpus starts, where there might have been some increase of instances.

3.3.2 Intention innovation

Motion-backgrounded in turn enables the seamless emergence of the intention innovation (Figure 4). Intention and motion-backgrounded exhibit great conceptual

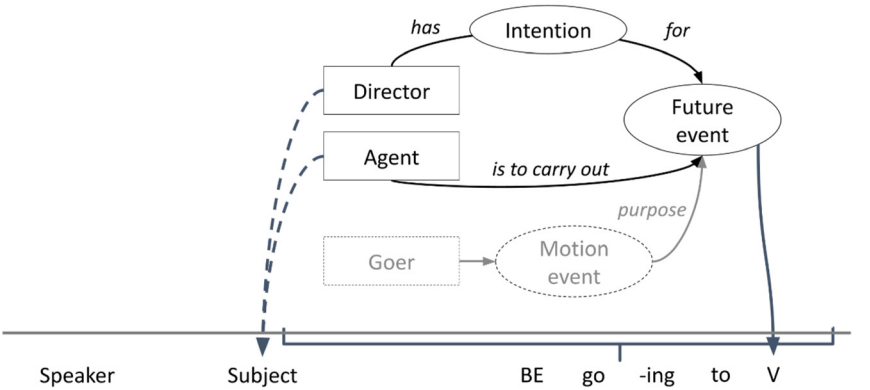

Figure 4: Intention frame.

overlap: they share all event participants and relations except for the motion structure and the purpose link, which are missing from intention. They also differ with regards to the mapping of conceptual structure unto syntactic structure. With motion-backgrounded, the motion structure maps onto *go* and *to* evokes a purposive meaning. With intention, *go, -ing* and *to* form a unit *going to* which maps onto the directive structure. Crucially, the intention frame is already completely included in the motion-backgrounded frame.

Motion-backgrounded instances can be seen as an underspecified enabling use. The backgrounding of the motion structure gives the directive structure more discourse prominence. This invites the inference that various degrees of low motion are acceptable with the construction. Speakers might have thus exploited this underspecification to the extent that the motion substructure is completely bleached. Intention instances can thus be interpreted as motion-backgrounded with minimal motion i.e. no motion whatsoever.[7] This can be easily seen with the instances in (2): although it is very likely that they still imply a motion structure, the interpretation of the scenes does not depend on it. Regardless of the degree of motion, the overall dynamics of the scene will be understood in the same way.

The first intention instances occur in the fourth generation (*1610–1629), two generations after the first occurrence of the motion-backgrounded enabling use. The first instances in my corpus are the following:

7 This is represented in Figure 4 by the greyed-out motion structure.

(3) [Intention]
   a. Crat.: *YEE Villaines hold. What is the matter? why this violence?*
   Leoc.: *A little love sport only, we were arguing Pro, and Con out of Plato, and are now* ***Going to*** *practise his Philosophy*.
   (1636, William Cartwright [*1611], *The Royal Slave*)
   b. Mald. *Prethee no more, though, to be plain, I was even* ***going to*** *confess that I was even weary of being just or good much longer.*
   (1678, Edward Howard, [*1624], *The Man of Newmarket*)

In (3a), Cratender finds Leocrates and his consorts as they are about to rape two women. Leocrates' utterance is supposed to be a humorous way to sum up their previous conversation and his intentions. The *going to practise his philosophy* is framed as a consequence of *arguing pro and con out of Plato*, which makes an intention reading more likely. In (3b), *going to* is collocated with a communication verb and points to an earlier point in the discourse and there are no references to motion before or after the instance.

While my first intention instances only occur in the fourth generation (*1610–1629), other investigations suggest earlier intention instances, which fall into my second (*1570–1589) and third generations (*1590–1609) (Garrett 2012; Petré 2019; Traugott 2015):

(4) a. *And so caused he every morning, long before day, his coach to be rumbled at his gate, and about me, where I lay, a great noise of tongues, and opening of doors; and all this they did of purpose to affright and distract me, and to make me believe I was* ***going to*** *be racked again, to make me confess an untruth; and still thus they continued every day of five days to Christmas.*
   (1632, William Lithgow [*1582], *Travels and voyages*, quoted in Garrett 2012: 69–70)
   b. *He is fumbling with his purse-strings, as a school-boy with his points when he is* ***going to*** *be whipped, till the master weary with long stay forgives him.*
   (1628, John Earle [*1601], *Earle Microcosmography §19*, quoted in Garrett 2012: 69–70)
   c. *And with a hart thus deuout and recollected thou mayeth beginne to enter, vpon the exercise of the knowing of thy selfe; and then upon thy knees, thou shalt thinke to what an excellent, and soueraigne maiesty thou art* ***going to*** *speak. Which yet thou must not conceue to be farre form thee.*
   (1620, *The Audi filia*, Tobie Matthew [*1577], quoted in Petré 2019: 174)

Like (2b) at first glance these instances seem to be convincing examples of non-motion *be going to.* When having a look at the wider context though, we find that a motion structure is still likely to be implied and activated.

Example (4a) seems motionless because of the use of the passive and – as Garrett (2012) points out – the fact that the subject is a prisoner scared of being tortured again. Looking at the wider context however, we learn that the narrator was tortured before in a different place to where he is presently being held captive. Thus, it is very likely that when the narrator speaks of *going to be racked again* he literally means that he will have to go somewhere to be beaten again.

Example (4b) can easily be thought to imply motion, as Traugott (2015: 67) points out as well: "the schoolboy could conceivably go somewhere to be whipped"; she however qualifies this by saying that "this does not appear to be the point of the passage". This seems more in line with my description of motion backgrounded instances than that of clear intentional ones.

Example (4c) seems motionless, as Petré (2019) points out, because the person who is being instructed to speak to God is already on his knees, hence there is no room for going anywhere physically. Motion may still be implied if we take two things into account. For one, the passage is a translation from Spanish and the Spanish original also uses a *go*-future here (*vais a hablar* 'is going to speak'). While the Spanish *ir a* future at the time (mid-16th to early 17th century) is more frequent than English *be going to*, it is nonetheless still dwarfed by the overwhelming predominance of the Spanish synthetic future (Aaron 2006: 268). In the Spanish original of the *Audi filia*, *vais a hablar* is the only instance of the *ir a* future, as is *be going to* in the English translation. This might indicate that the use of *be going to* here is more of a literal translation and less of a conscious decision to use it with the meaning of intention. The translator seems to conceptualise the passage as being about spiritual motion, as he uses motion concepts when talking about *enter(ing)*[8] *upon the exercise of knowing thyself* and the *sovereign majesty not being* far *from you* (my emphasis). This is further supported by the fact that religion as a highly abstract domain is "largely if not completely dependent on metaphorical conceptualisation" (Jäkel 2002: 23). The journey metaphor is especially common in religious contexts, which implies motion (Ault 2001; Jäkel 2002; Lewis 2005; Slingerland 2004).

There is, of course, no way of knowing what speakers at the time did understand these forms to mean and many of our interpretations are tainted by our own experience with *be going to* as a full-fledged future-time expression in PDE. My preference for the motion analyses in these early generations is precisely to counteract these biases. The potential for a pure intention analysis, however, also shows that the motion meaning in all of these instances is already quite backgrounded, which is in line with my findings as well: all of these instances were found only from

8 The Spanish original has "entering" as a mistranslation of "entender". This lends further support to the idea of a motion conceptualisation.

the second generation onwards, which is also where I find my first motion backgrounded instances.

There is no increase of motion-backgrounded instances by the time intention emerges, so it does not seem that the innovation of intention was enabled by better entrenchment of motion-backgrounded instances. The lack of an increase of instances in the enabling use might be explained due to the fact that there are never any significant increases of motion-backgrounded instances (see Figure 5). This might be because the productivity of this meaning has already been fully exploited by that time and motion-backgrounded is as well-entrenched as it can possibly be.

3.3.3 The prediction-over-intention innovation

Intention instances that have a 3rd person subjects can be seen as an enabling use for the seamless emergence of the prediction-over-intention innovation. The occurrence of intention *be going to* with 3rd person subjects necessarily entails the addition of what I call a reporter structure. Third person subjects signal that the speaker reports on someone else's intentions or plans, in contrast to 1st person subjects, where speakers merely express their own intentions (Budts and Petré 2016: 12). The reporter structure consists of a reporter (expressed by the speaker) and a source of information that they recall to report on the intention (see Figure 6).

Prediction-over-intention is a particular type of prediction (see Figure 7). Predictions are classified as evaluative and necessarily imply an evaluator evaluating a proposition that is supposed to hold at some point in the future. The evaluator is expressed by the speaker and the proposition by other syntactic elements. The evaluator draws on some information source to evaluate the proposition, typically in

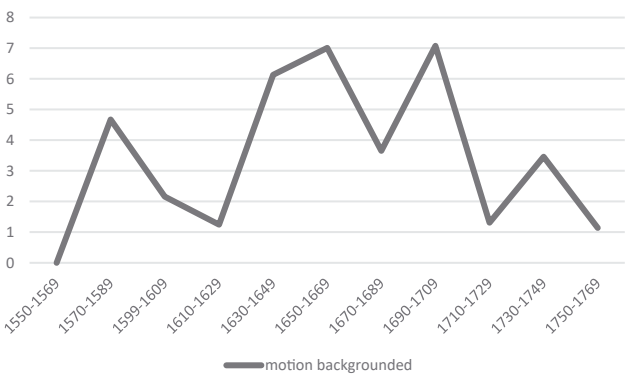

Figure 5: Motion-backgrounded instances by generation (normalized at 1 mil. words).

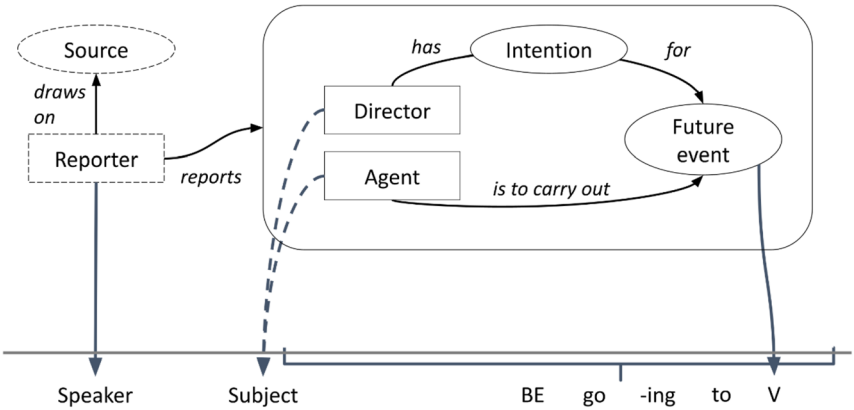

Figure 6: Reported intention frame.

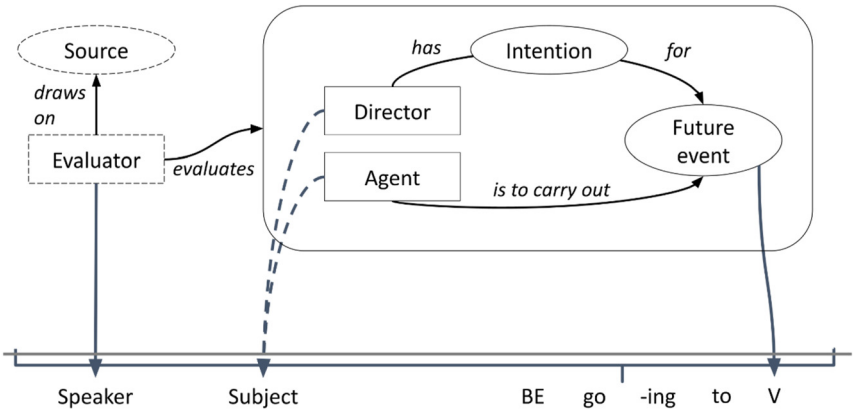

Figure 7: Prediction-over-intention frame.

terms of likelihood. A prediction-over-intention is a type of prediction where the proposition that is being evaluated has a directive conceptual structure (Nesselhauf 2012: 92 on "prediction + intention").

Reported intentions have considerable conceptual overlap with predictions-over-intention, and the latter can thus be said to arise seamlessly from the former. Both take a directive structure as their proposition (delineated by a rounded rectangle) and both have a conceptual structure associated with the speaker. They only differ with regards to the role of the speaker. Instead of a reporter, prediction-over-intention has an evaluator structure, but they are structurally similar. Both the reporter and the evaluator draw on a source of information and relate it to a

proposition. What differentiates them is the relation they have to their sources. The reporter has a direct relation to their source. They hear about intentions and plans and repeat them as such without any further evaluation. The evaluator has more of an inferential relation to their source. They do not repeat what they have heard, they form beliefs or attitudes based on inferences they make from what they know and relate this to the proposition.

The conceptual structure associated with the speaker may be underspecified. When saying something about other people's intentions, it may not always be clear whether someone is reporting or inferring. Speakers often do not state clearly whether they believe someone has some intentions or whether they know so and are just passing on the message. Also, in many situations, what we know and what we infer might be hard to disentangle. It might thus be that speakers and hearers alike do not fully activate the information source for an utterance. Thus, reported intention instances can be underspecified with regards to the relation the speaker has to their information source, thus enabling the prediction over intention innovation.

The innovation of prediction-over-intention occurs in the fifth generation (*1630–1649) of my corpus, one generation after the first reported intention instances have occurred:

(5) [Plan]
Scarramucha: *The poor Rogue apprehends the misery he is **going to** suffer, when he shall have the Mind and Heart of a crafty Whore possess him.*
(1630, Thomas Killigrew [*1612], *Thomaso or the Wanderer*)

(6) [Prediction over intention]
a. Dalin (aside.) *The Fool's too much a Fool, he's [Sancho] **going to** discover himself, if I prevent it not.* (To Lopez.) *Make haste, Father, and put him upon the Point, or he'll give me up to Sancho.*
(1694, John Dryden [*1631], *Love triumphant*)
b. Warn: *O Traytor to all sense and reason! He's going to discover that too.*
(1668, John Dryden [*1631], *Sir Martin Mar-all*)

Example (5) might seem like an instance of prediction at first, but the larger context reveals that it is in fact reportative: The speaker, Scarramucha, is talking about himself when he speaks of the *poor rogue apprehending the misery he is going to suffer*. His future suffering is a consequence of switching identities with another character.

In (6a), Dalinda makes a prediction over whether Sancho intends to reveal himself. Dalinda is not reporting on Sancho's intention, which gets clear from the larger context: Sancho and Dalinda have a conversation beforehand, where Sancho

tells her he will not reveal his true identity to her father Lopez. From the way Sancho is acting in the conversation though, it gets clear that his intention might be to reveal himself after all, which is what Dalinda infers. Similarly, in (6b), Warner has been betrayed by Sir John to Sir Martin in one respect and assumes, from the way Sir John acts in the conversation, that he will also discover another of his bad deeds to Sir Martin.

The prediction-over-intention innovation first occurs when there has been a significant increase of reported intention instances (p = 0.0522, tau-b = 0.83666) (see Figure 8). This supports the hypothesis that innovations become more likely when the enabling use becomes more frequent.

3.3.4 Prediction-over-other-propositions innovation

So far, we have seen how predictions made about someone's intentions might have occurred seamlessly. From PDE, however, we know that *be going to* can be used to make predictions about any type of proposition (*It's going to rain*). A possible enabling use for the seamless emergence of this innovation might have been the notion of plan.

The plan frame is a specific subtype of the reported intention frame. It also consists of a directive structure but signifies a special mapping of event participants onto syntactic structure (see Figure 9). With plan,[9] director and agent refer to

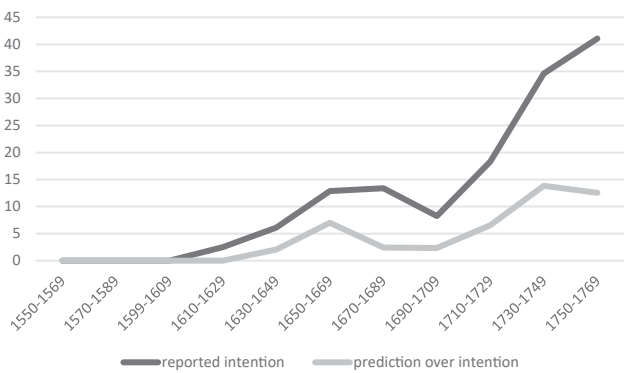

Figure 8: Reported intention and prediction-over-intention instances by generation (normalized at 1 mil. words).

9 Note that this understanding of plan is somewhat different from understandings of plan in terms of degree of predetermination (e.g. Leech 2004: 61).

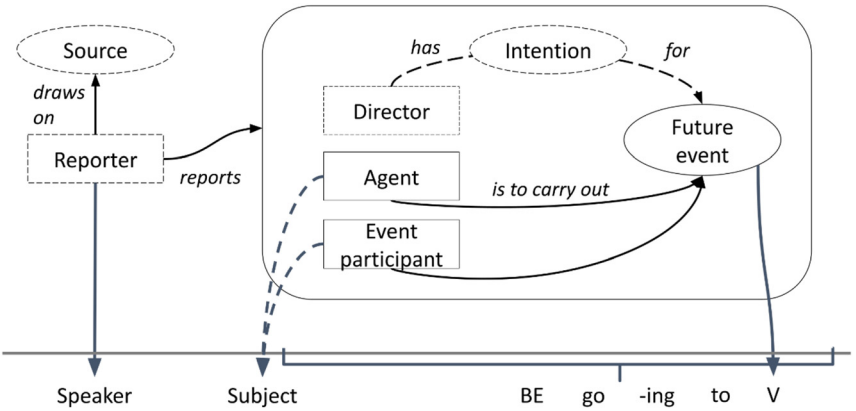

Figure 9: Plan frame.

different discourse entities. The director is always unexpressed and thus backgrounded in the conceptual structure, as is the rest of the conceptual structure that belongs to them (intention). The agent can be expressed by the subject or can also be unexpressed and thus backgrounded. In that case some other event participant would be expressed by the subject.

Plan and prediction-over-other-propositions also have a lot of conceptual overlap (see Figure 10): both imply some sort of speaker structure, either reporter or evaluator, and both can have any event participant as a subject and refer to a future event. For the prediction-over-other-propositions innovation to emerge, we need to

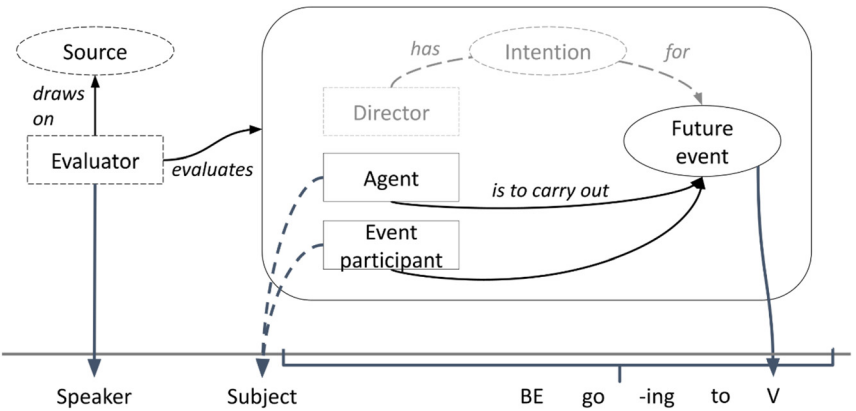

Figure 10: Prediction-over-other-propositions frame.

assume two types of underspecification in the plan frame. One is the underspecification with regards to the speaker structure (reporter vs. evaluator) already discussed in the previous section. The other is to do with the degree to which plan implies direction and intentionality. Because the director and their intending are backgrounded, it might not always be clear how much intentionality there actually is and how much the future event is in the control of a director. This might invite some speakers to produce instances where intentionality is completely down toned, which results in the innovation of prediction-over-other-propositions.

The first prediction-over-other-propositions instances occur in the seventh generation (*1670–1689), three generations after the first occurrence of the enabling use plan (*1610–1629):

(7) [Plan]
Scarramucha: *The poor Rogue apprehends the misery he is **going to** suffer, when he shall have the Mind and Heart of a crafty Whore possess him.*
(1630, Thomas Killigrew [*1612], *Thomaso or the Wanderer*)

(8) [Prediction over other propositions]
a. *Do you think I'll suffer her to marry a Beggar? a Half Pay Officer, it may be shortly a disbanded Officer; why we are **going to** have a Peace, and a lasting Peace is as bad as a lasting Famine to you.*
(1713 William Taverner [*1677], *The female advocates*)
b. *Heigh, ho! Well, I am **going to** be sad all of a sudden.*
(1737, James Miller [*1704], *The universal passion*)

Example (7) here is a reproduction of (5). It is an instance of plan as the director is not explicitly mentioned, but it is clear from the context that there is a plan in place. In the instances in (8), the propositions do not imply any direction: (8a) seems more a prediction based on facts than a prediction over or reporting of intentions; (8b) is clearly non-directive, as the speaker is surprised to find themselves feeling sad.

The innovation occurs when there has been a significant increase of plan instances in G7 (1670–1689) (p = 0.017, tau-b = 0.794) (see Figure 11). This supports the hypothesis that a better entrenched enabling use makes an innovation more likely.

3.3.5 Seamless semantic developments from ongoingness

Some more particular semantic flavours that *be going to* has with various meanings can be argued to have arisen from the notion of ongoingness that is encoded in the use of the progressive. By the Early Modern English period, the progressive already has most of its PDE meanings such as duration, incompleteness and actuality

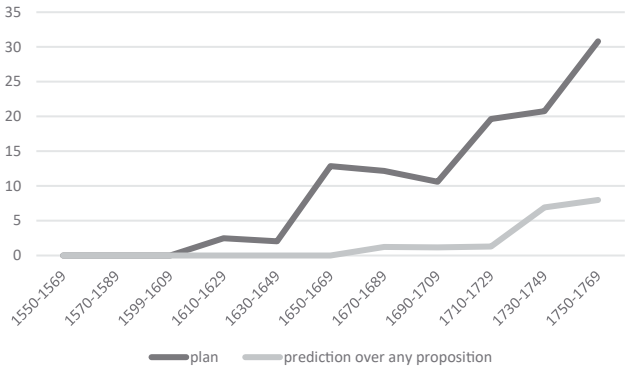

Figure 11: Plan and prediction-over-other-propositions instances by generation (normalised at 1 mil. words).

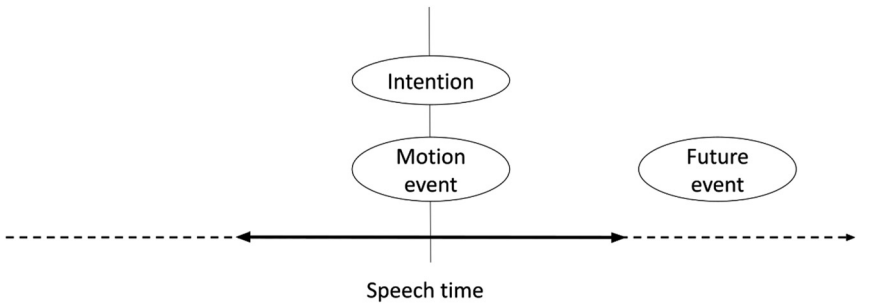

Figure 12: Aspectual conceptual structure in motion-with-a-purpose frame.

(Åkerlund 1911: 82; Núñez Pertejo 2004: 22–32; Visser 1972: §1859). The progressive makes an event seem to extend beyond the moment of speech, both into the past and into the future (Leech 2004: 19; Palmer 1965: 77–78; Quirk et al. 2005: 198).

For motion-with-a-purpose this means that the motion event is felt to be ongoing at speech time, as is the intention for the future event to happen (see Figure 12).[10]

While the underspecification of the degree of motion with *be going to* eventually leads to the entire bleaching of motion, the meaning of duration or ongoingness is retained in the intention frame (see Figure 13).

10 The frames in Figures 12–14 just show the aspectual conceptual structure, all other information was left out to reduce complexity. The aspectual structures here are supposed to complement the frames mentioned in the preceding sections.

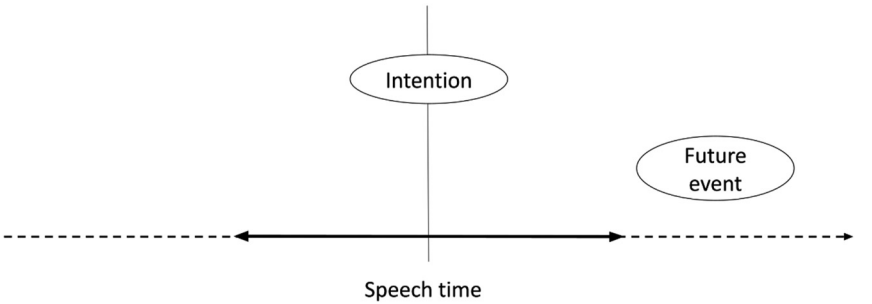

Figure 13: Aspectual conceptual structure in the intention frame.

Now, only the state of intending is conceptualised as ongoing, i.e. as extending into the past and into the future. The extension into the past gives rise to the notion of predetermination that is often cited with *be going to* (Brisard 2001: 256; Leech 2004: 61) (cf. [9]). The extension into future gives rise to the equally-oft cited notion of imminence (Budts and Petré 2016; Leech 2004: 62) (cf. [10]).

(9) [Predetermination]
Hell. *Whe, I cou'd be inclin'd that way but for a Foolish Vow I am going to make to dye a maid.*
(1677, Aphra Behn [*1640], *The rover*)

(10) [Imminence]
Will. *I cannot tell, I must bethink me first – hah – death I'm going to believe her.*
(1677, Aphra Behn [*1640], *The rover*)

The ongoingness meaning is further retained in prediction-over-intention meanings, namely in the source that the evaluator draws on to evaluate the proposition that is to hold in the future (see Figure 14).

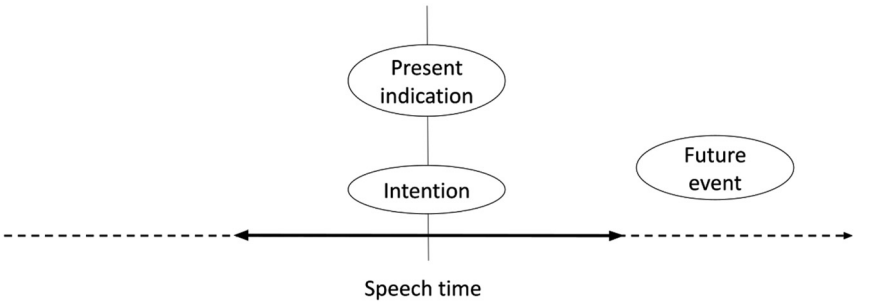

Figure 14: Aspectual conceptual structure of prediction-over-intention.

All early instances of prediction-over-intention instances draw on present indications as a source of information for their evaluations. Here, it is the evidence that is ongoing. The evidence is present at speech time and may even extend into the past and it extends into the future by telling us what is likely to happen. The association of ongoingness both with the evaluation source and with intention in predictions-over-intention adds to the seamlessness of the emergence of the innovation: making evaluations about someone's intentions based on present indications might seem less evaluative than speculating about someone's intentions based on other things we know about them. Predictions based on present indications might thus seem closer to reported intentions, precisely because there are strong indications that someone will do something in the future:

(11) [Prediction over intention based on present indication]
Dalin (aside.) *The Fool's too much a Fool, he's [Sancho]* ***going to*** *discover himself, if I prevent it not*. (To Lopez) *Make haste, Father, and put him upon the Point, or he'll give me up to Sancho.*
(1694, John Dryden [*1631], *Love triumphant*)

4 Discussion

The purpose of this paper was to bring clarity into the debate surrounding manner in which semantic innovations in grammaticalization emerge. I have argued that the debate is complicated by different diagnostics for manner and is best understood in terms of degree of similarity, but that degree of similarity gives rise to two different accounts of grammatical innovation: a gradual one that argues that innovative uses are similar but separate form-meaning pairings to existing uses, and a seamless one that holds that innovative uses are so similar to existing uses that they do not require a new analysis. The distinction between seamless innovation and gradual innovation clarifies the intellectual territory surrounding grammatical innovation and will hopefully be helpful for future accounts to align themselves with one approach or the other.

Using *be going to* as a case study I have demonstrated that semantic innovations with *be going to* can be shown to be seamless: each of the innovative meanings *be going to* acquires could be linked to an enabling use that it has considerable conceptual overlap with and that could be shown to be underspecified in relevant places. Frame semantics here was helpful in making apparent the larger conceptual structure associated with these meanings. We also found that enabling uses consistently occur prior to innovations. Two later innovations only occurred after there had been a significant increase in enabling use instances, which supports the

hypothesis that a better entrenched enabling use better enables the occurrence of innovations.

While *be going to* only constitutes a first case study, the fact that it comprises five innovations all of which could be demonstrated to arise seamlessly indicates that seamless innovation is at least a possible account for grammatical innovation. Given that it is compatible with pre-empirical facts about grammar and grammaticalization as well, seamlessness in fact seems an overall reasonable hypothesis for semantic innovation in grammaticalization to the extent of being preferable to gradual innovation. As such, the paper suggests that future research on semantic innovation in grammaticalization would benefit from adopting a seamlessness perspective and gives a template of how to do so. It suggests that such research should include:

(a) a detailed formalization of the semantic space under investigation using a fine-grained semantic framework such as frame semantics,
(b) corpus analysis with manual semantic annotation of frame semantic features,
(c) qualitative analysis of early innovative instances.

The analysis presented here could be enhanced by also looking at the distributional and collocational properties of innovative and enabling uses: using distinctive collexeme analysis on top of fine-grained semantic analysis for instance could be useful to see whether enabling and innovative uses have similar preferences in terms of the verbs they co-occur with (Hilpert 2008). Similarly, looking at other linguistic contexts that the two uses occur in could be informative, as it would show us whether certain types of contexts more readily allow innovative uses than others (Petré 2019).

While seamless innovation has been specifically defined as a property of semantic-grammatical innovation, similar concepts have been applied in syntactic innovation, especially in the context of category change, and lexical innovation. With syntactic innovation, seamlessness is attested not in terms of conceptual overlap, but instead in terms of distributional overlap between innovative and enabling use, as is the case in the development of adjectival uses of *key* (Denison 2017; De Smet 2016). In terms of lexical innovation, Geeraerts (1997: 58–59) highlights the prototypical nature of lexical meaning and demonstrates how innovative senses arise diachronically by modulation of core senses. As such seamlessness is a phenomenon that is attested in other types of innovations as well, but clearly does not underlie all types of innovations: syntactic innovations based on deletion (e.g., the innovation of *as far as X*) and grammatical innovations based on borrowing (e.g., the after-perfect in Irish English) are clearly not seamless. Seamlessness is also unlikely to be underlying innovations or acts of creativity that are motivated by an extravagance maxim ("speak in such a way that you will be noticed"), as for instance using *no sweat* instead of *no worries* (Haspelmath 2000).

Seamlessness also only concerns the semasiological side of innovation and disregards the onomasiological side, which other approaches have taken into consideration (Nesselhauf 2012). Why would a speaker choose to use *be going to* to express intention, when they can use better entrenched, conventional alternatives such as *will* and *shall*? The account of seamless innovation given here can contribute to answering this question but does not give a full answer. First, it explains why it was at all possible for speakers to use *be going to* instead of *will* and *shall*, namely because for speakers at the time intention was so similar to some uses of motion-with-a-purpose that they did not feel like they were innovating at all, when using *be going to* to express intention. Second, this strong association between innovative and enabling use might also explain why a speaker would select *be going to* in terms of entrenchment. It might be that the entrenchment of the enabling use gives a selective advantage to *be going to* over *will* and *shall* given the exact context and communicative intent the speaker has.

Acknowledgments: I would like to thank Nik Gisborne, Yueh Hsin Kuo, Graeme Trousdale, Peter Petré, Makan Nojoumian and Emily Gough, all of whom have read various versions of this paper and have been extremely generous and encouraging with their feedback. I am especially grateful to Hans Boas for suggesting using frame semantics to investigate seamlessness. Further thanks go to the audiences at various venues where I have presented this research, the Cognitive Linguistics Research Group and English Language Research Group in Edinburgh as well as the audiences at ISLE6 and ICHL25. I would also like to thank all the anonymous reviewers for their helpful comments.

References

Aaron, Jessi Elana. 2006. *Me voy a tener que ir yendo*: A corpus-based study of the grammaticization of the *ir a*+ INF construction in Spanish. In Nuria Sagarra & Almeida Jacqueline Toribio (eds.), *Selected proceedings of the 9th Hispanic linguistics symposium*, 263–272. Somerville, MA: Cascadilla Proceedings Project.

Åkerlund, Alfred. 1911. *On the history of the definite tenses in English*. Lund: Berlingska boktryckeriet.

Andersen, Henning. 2001. *Actualization*. Amsterdam & Philadelphia: John Benjamins.

Ault, Nancy. 2001. Spiritual life as a journey: A metaphor of exclusion for children? *Journal of Christian Education* 1. 29–37.

Brisard, Frank. 2001. *Be going to*: An exercise in grounding. *Journal of Linguistics* 37(2). 251–285.

Budts, Sara & Peter Petré. 2016. Reading the intentions of *be going to*. On the subjectification of future markers. *Folia Linguistica* 37(1). 1–32.

Bybee, Joan. 2006. From usage to grammar: The mind's response to repetition. *Language* 82(4). 711–733.

Bybee, Joan. 2010. *Language, usage and cognition*. Cambridge: Cambridge University Press.

Bybee, Joan L. & William Pagliuca. 1987. The evolution of future meaning. In Anna Giacalone Ramat, Onofrio Carruba & Guiliano Bernini (eds.), *Papers from the 7th international conference on historical linguistics*, 109–122. Amsterdam & Philadelphia: John Benjamins.

Bybee, Joan L. & Dan Isaac Slobin. 1982. Rules and schemas in the development and use of the English past tense. *Language* 58(2). 265–289.

Copley, Bridget. 2009. *The semantics of the future*. New York: Routledge.

Croft, William. 2000. *Explaining language change: An evolutionary approach*. Harlow: Pearson Education.

Croft, William. 2001. *Radical Construction Grammar: Syntactic theory in typological perspective*. Oxford: Oxford University Press.

Croft, William & David A. Cruse. 2004. *Cognitive linguistics*. Cambridge: Cambridge University Press.

Danchev, Andrei & Merja Kytö. 1994. The construction *be going to* + infinitive in Early Modern English. In Dieter Kastovsky (ed.), *Studies in Early Modern English*, 59–78. Berlin & Boston: Mouton de Gruyter.

De Smet, Hendrik. 2009. Analysing reanalysis. *Lingua* 119(11). 1728–1755.

De Smet, Hendrik. 2012. The course of actualization. *Language* 88(3). 601–633.

De Smet, Hendrik. 2014. Does innovation need reanalysis? In Evie Coussé & Ferdinand von Mengden (eds.), *Usage-based approaches to language change*, 23–48. Amsterdam & Philadelphia: John Benjamins.

De Smet, Hendrik. 2016. How gradual change progresses: The interaction between convention and innovation. *Language Variation and Change* 28(1). 83–102.

Denison, David. 2010. Category change in English with and without structural change. In Graeme Trousdale & Elizabeth C. Traugott (eds.), *Gradience, gradualness and grammaticalization*, 105–128. Amsterdam & Philadelphia: John Benjamins.

Denison, David. 2017. Ambiguity and vagueness in historical change. In Marianne Hundt, Sandra Mollin & Simone E. Phenninger (eds.), *The changing English language: Psycholinguistic perspectives*, 292–318. Cambridge: Cambrigde University Press.

Diewald, Gabriele. 2002. A model for relevant types of contexts in grammaticalization. In Ilse Wischer & Gabriele Diewald (eds.), *New reflections on grammaticalization*, 103–120. Amsterdam & Philadelphia: John Benjamins.

Diewald, Gabriele. 2020. Paradigms lost – paradigms regained. In Lotte Sommerer & Elena Smirnova (eds.), *Nodes and networks in diachronic Construction Grammar*, 277–317. Amsterdam & Philadelphia: John Benjamins.

Disney, Steve. 2009. A domain matrix view of the uses and development of BE *going to* + infinitive. In Grace Bota, Helen Hargreaves, Chia-chun Lai & Rong Rong (eds.), *Papers from the Lancaster University postgraduate conference in linguistics & language teaching*, 24–44. Lancaster: University of Lancaster.

Fillmore, Charles J. 1975. An alternative to checklist theories of meaning. *Annual Meeting of the Berkeley Linguistics Society* 1. 123–131.

Fillmore, Charles J. 1976. Frame semantics and the nature of language. *Annals of the New York Academy of Sciences: Conference on the origin and development of language and speech* 28. 20–32.

Fillmore, Charles J. 2008. Frame semantics. In Dirk Geeraerts (ed.), *Cognitive linguistics: Basic readings*, 373–400. Berlin & New York: Mouton de Gruyter.

Garrett, Andrew. 2012. The historical syntax problem: Reanalysis and directionality. In Dianne Jonas, John Whtiman & Andrew Garrett (eds.), *Grammatical change: Origins, nature, outcomes*, 52–72. Oxford: Oxford University Press.

Geeraerts, Dirk. 1997. *Diachronic prototype semantics: A contribution to historical lexicology*. Oxford: Oxford University Press.

Giannakidou, Anastasia & Alda Mari. 2018. A unified analysis of the future as epistemic modality. *Natural Language & Linguistic Theory* 36(1). 85–129.

Goldberg, Adele E. 1995. *Constructions: A Construction Grammar approach to argument structure*. Chicago: University of Chicago Press.
Goldberg, Adele E. 2006. *Constructions at work: The nature of generalization in language*. Oxford: Oxford University Press.
Gries, Stefan Th. 2013. Elementary statistical testing with R. In Julia Schlüter & Manfred Krug (eds.), *Research methods in language variation and change*, 361–381. Cambridge: Cambridge University Press.
Haspelmath, Martin. 1998. Does grammaticalization need reanalysis? *Studies in Language* 22(2). 315–351.
Haspelmath, Martin. 2000. The relevance of extravagance: A reply to Bart Geurts. *Linguistics* 38(4). 789–798.
Haspelmath, Martin. 2004. On directionality in language change with particular reference to grammaticalization. *Typological Studies in Language* 59. 17–44.
Hilpert, Martin. 2008. *Germanic future constructions: A usage-based approach to grammaticalization*. Amsterdam & Philadelphia: John Benjamins.
Himmelmann, Nikolaus P. 2005. Gram, construction, and class formation. In Clemens Knobloch & Burkhard Schaeder (eds.), *Wortarten und Grammatikalisierung. Perspektiven in System und Erwerb*, 79–93. Berlin & New York: Mouton de Gruyter.
Hopper, Paul J. & Elizabeth Closs Traugott. 2003. *Grammaticalization*. Cambridge: Cambridge University Press.
Jäkel, Olaf. 2002. Hypotheses revisited: The cognitive theory of metaphor applied to religious texts. *Metaphorik.de* 2(1). 20–42.
Labov, William. 1969. Contraction, deletion, and inherent variability of the English copula. *Language* 45(4). 715–762.
Labov, William. 2007. Transmission and diffusion. *Language* 83(2). 344–387.
Langacker, Ronald W. 1987. *Foundations of Cognitive Grammar: Descriptive application*, vol. 2. Stanford: Stanford University Press.
Langacker, Ronald W. 2013. *Essentials of Cognitive Grammar*. Oxford: Oxford University Press.
Leech, Geoffrey N. 2004. *Meaning and the English verb*. Harlow: Pearson Education.
Lehmann, Christian. 2015. *Thoughts on grammaticalization*, 3rd edn. Berlin: Language Science Press.
Lewis, Steven. 2005. *Landscape as sacred space: Metaphors for the spiritual journey*. Eugene: Wipf and Stock Publishers.
Lightfoot, David. 1997. Catastrophic change and learning theory. *Lingua* 100(1–4). 171–192.
Nesselhauf, Nadja. 2012. Mechanisms of language change in a functional system. *Journal of Historical Linguistics* 2(1). 83–132.
Núñez Pertejo, Paloma. 1999. *Be going to* + infinitive: Origin and development. Some relevant cases from the Helsinki Corpus. *Studia Neophilologica* 71(2). 135–142.
Núñez Pertejo, Paloma. 2004. Some developments in the semantics of the English progressive from Old English to Early Modern English. *Revista Alicantina de Estudios Ingleses* 17. 211–226.
OED = Simpson, John A. (ed.). 2000. *Oxford English dictionary online*, 3rd edn. Oxford: Oxford University Press. http://www.oed.com (accessed 08 January 2023).
Palmer, Frank R. 1965. *A linguistic study of the English verb*. London: Longmans.
Petré, Peter. 2016. Unidirectionality as a cycle of convention and innovation: Micro-changes in the grammaticalization of [be going to INF]. *Belgian Journal of Linguistics* 30(1). 115–146.
Petré, Peter. 2019. How constructions are born. The role of patterns in the constructionalization of *be going to* INF. In Ruth Möhlig-Falke & Beatrix Busse (eds.), *Patterns in language and linguistics*, 155–190. Berlin & New York: Mouton de Gruyter.

Petré, Peter & Freek Van de Velde. 2018. The real-time dynamics of the individual and the community in grammaticalization. *Language* 94(4). 867–901.
Quirk, Randolph, Sydney Greenbaum, Geoffrey Leech & Jan Svartvik. 2005. *A comprehensive grammar of the English language*. London: Longman.
Randall, Dale B. J. 2014. *Winter fruit: English drama*, 1642–1660. Lexington: University Press of Kentucky.
Roberts, Ian. 2007. *Diachronic syntax*. Oxford: Oxford University Press.
Roberts, Ian. 2010. Grammaticalization, the clausal hierarchy and semantic bleaching. In Elizabeth C. Traugott & Graeme Trousdale (eds.), *Gradience, gradualness and grammaticalization*, 45–73. Amsterdam & Philadelphia: John Benjamins.
Roberts, Ian & Anna Roussou. 1999. A formal approach to 'grammaticalization'. *Linguistics* 37(6). 1011–1041.
Roberts, Ian & Anna Roussou. 2003. *Syntactic change: A minimalist approach to grammaticalization*. Cambridge: Cambridge University Press.
Schmid, Hans-Jörg. 2020. *The dynamics of the linguistic system: Usage, conventionalization, and entrenchment*. Oxford: Oxford University Press.
Slingerland, Edward. 2004. Conceptual metaphor theory as methodology for comparative religion. *Journal of the American Academy of Religion* 72(1). 1–31.
Tomasello, Michael. 2010. Cognitive linguistics and first language acquisition. In Dirk Geeraerts & Hubert Cuyckens (eds.), *The Oxford handbook of cognitive linguistics*. Oxford: Oxford University Press.
Traugott, Elizabeth C. 2015. Toward a coherent account of grammatical constructionalization. In Jóhanna Barðdal, Elena Smirnova, Lotte Sommerer & Spike Gildea (eds.), *Diachronic Construction Grammar*, 51–79. Amsterdam & Philadelphia: John Benjamins.
Traugott, Elizabeth C. & Richard B. Dasher. 2001. *Regularity in semantic change*. Cambridge: Cambridge University Press.
Traugott, Elizabeth C. & Graeme Trousdale. 2013. *Constructionalization and constructional changes*. Oxford: Oxford University Press.
Tyler, Andrea & Hana Jan. 2016. *Be going to* and *will*: Talking about the future using embodied experience. *Language and Cognition* 9(3). 412–445.
Visser, Fredericus Th. 1972. *An historical syntax of the English language*, part 2: *Syntactical units with one verb* (reprinted with corrections). Leiden: Brill.
Weinreich, Uriel, William Labov & Marvin Herzog. 1968. *Empirical foundations for a theory of language change*. Austin: University of Texas Press.
Wiseman, Susan. 1998. *Drama and politics in the English Civil War*. Cambridge: Cambridge University Press.