

And the Context Shall Make You Free:
A Discrimination Learning Model of Grammaticalization in the Critical Context

1. Introduction.

Parallel themes emerging in psycholinguistics and the study of grammaticalization have much light to shed on one another. Specifically, recent psycholinguistic work about the effects of context on language processing and language learning can greatly elucidate process called grammaticalization. In this paper, I utilize a learning model that has succeeded in capturing numerous context and frequency effects in processing and learning, attempting to model how various configurations of form, context, and meaning result in different kinds of changes, including grammaticalization.

I propose to view the 'link' between form and meaning as a predictive association. In that framework, the phenomenon of *blocking* provides an explanation for semantic bleaching and subsequent host-class expansion. Blocking is when one cue A prevents another cue B from associating with an outcome; this happens when the cue A predicts the outcome, and is always present when B occurs.

1.1 Linking Form and Meaning

Tacitly or explicitly, most work in linguistics assumes a bidirectional link between form and meaning. Specifically, it is assumed that individual words have individual meanings, and that the meaning of a sentences involves a combination of the meanings of its parts. This assumption results in empirical and epistemological problems that are most easily resolved, without any loss in empirical or theoretical clarity, by dropping it.

The traditional view is exemplified in an analysis of sentence (1). Say we hear the sentence (1) and we figure out that the speaker wanted to communicate that the boy kicked a ball. In analyzing how this happened, roughly, we find *the boy* to contribute the meaning BOY, *kicked* to contribute the meaning KICK, and *the ball* to contribute the meaning BALL. Various morphemes such as *the* and *-ed* make abstract contributions.

(1) *The boy kicked the ball.*

 | | |
 BOY KICK BALL

Construction grammar assumes this kind of analysis for units of analysis larger than the word. It is enshrined in Goldberg's (1995) definition of a construction:

C is a construction iff_{def} C is a form-meaning pair $\langle F_i, S_i \rangle$ such that some aspect of F_i or some aspect of S_i is not strictly predictable from C's component parts or from other previously established constructions.

In this case, the fact that the words appear in the order that they do instantiates the transitive verb construction, which has a meaning (unpredictable from other pairings) that assigns the boy and the ball to various roles in the event. The assumption remains of a simple *pairing* of form and meaning. This pairing exists in discussion of sentence meaning, utterance meaning, or utterance-token or utterance-type meaning (i.e. as in Levinson, 2000).

This traditional analysis does not assume that each word or construction has *one* meaning; indeed, one must admit that each word has a set of meanings that must be chosen from in comprehension. However, it *is* assumed that in the successful interpretation of a particular sentence in a particular discourse, each word contributes one meaning or at least one discrete package of meanings. That meaning is contributed by the word and not by other words, and combines with the meanings contributed by other words or constructions.

The idea of bidirectional form-meaning linkage breaks down if we examine the actual communicative event more closely. Consider all the possible situations that can be described by the sentence fragment *The boy kicked...*, i.e. the sentence as the hearer experiences it before hearing the object. Already, the hearer knows that the boy did not kick justice, time, or the United States—these abstract nouns have never occurred after *kick* in this kind of context. A hearer can also rule out or at least spend very little energy expecting numerous objects that are possible but highly improbable as the object of *kick*, such as Mars, an atom, or a blade of grass; the hearer will also come to disproportionately expect things that she has usually heard described as kicked. Furthermore, the hearer will expect things that she expects a *boy* would kick, and rule out things she hasn't heard about boys kicking. By the time the speaker pronounces *the ball*, the hearer has already predicted it to a large extent, and actually hearing *the ball* just leads her to predict that the intended message was 'ball' with slightly more certainty. This picture of communication is explored in detail in connectionist models of language understanding (McClelland, St. John & Taraban, 1989).

What happened in the above account was that *the boy* and *kicked* all actually *meant*, to some extent, BALL. The words all worked as cues that incrementally lowered the hearer's uncertainty about the speaker's intentions. The actual noun phrase *the ball* did exactly the same thing, only in a more reliable way than the other words. There is no qualitative difference between the way *kick* meant BALL and the way *the ball* meant BALL. In the same way, we can say that *the ball*, to some extent, means BOY

and KICK, though of course it means BALL more reliably. In this way, the meanings are scattered throughout the constructions of the sentence. For a given meaning, language users use probabilistic fluctuations in the use of words other than the word that is supposed to 'mean' that meaning to convey that meaning. Constructions can still be combined to form novel messages, but it is not clear that individual constructions contribute individual meanings, except in a few idealized cases.

Studies of usage and comprehension reveal that hearers do, in fact, use information from all words to discover a speaker's intentions, and that speakers do in fact deploy variations in all words in a sentence to communicate. After hearing the verbs *eat* or *drink*, infants will look preferentially towards drinks or food even before the object is revealed; gender (Lew-Williams & Fernald, 2007) and number agreement markers (Grüter & Fernald, 2011) outside an NP will similarly cause babies to look towards objects that co-occur with the appropriate gender marker or number marker. In an environment where only a few objects are worth talking about, this means that a baby will often home in on a speaker's intended referent long before the speaker says the word that allegedly 'points to' that referent.

On the production side, speakers use prenominal adjectives as probabilistic cues to upcoming nouns and meanings, even when these adjectives do not contribute anything according to the traditional view of linguistic encoding. When a speaker mentions a *cute little puppy*, the adjectives cannot be contributing anything semantically, since nearly all puppies are cute and little. However, *cute* and *little* are the most frequent adjectives before *puppy*. What the adjectives do is incrementally lower the hearer's uncertainty about the message, since, by dint of their co-occurrence with *puppy* and the meaning PUPPY, they can also be said to 'mean' PUPPY. This makes perfect sense of the fact that speakers use more prenominal adjectives before more informative (more specific) nouns (Ramscar & Futrell, 2011).

All these results pose empirical and theoretical problems for the traditional view of meaning as existing in a one-to-one correspondence with linguistic forms. If we adopt an empirical view of meaning involving the successful communication of intentions, as above, then it must be the case that meaning is distributed among constructions. We can reconcile the results, of course, with one-to-one symbolic accounts, by allotting certain meanings to certain words and also allowing words to predict other words, allowing the hearer to use a word to infer a meaning without the word actually meaning it. If we take this route, however, the question becomes: *how do we know* what the 'meaning' of a word is? *The ball* may mean BALL more reliably than it means KICK, but it is not clear that things will be so clear for abstract nouns or for nouns that only occur in highly restricted contexts. We may have an intuitive sense of what each word means, but empirically, this might be better chalked up to our grade school training in the analysis of language than to putative facts about 'meaning'.

It is not a large theoretical leap to abandon the clear-cut mapping between form and meaning. Constructions can contribute meanings probabilistically in accordance with their actual co-occurrence with certain other constructions and with certain meanings. Connectionist models of sentence processing and sentence comprehension already incorporate this assumption, see for instance McClelland, St. John & Taraban (1989), Elman (1991), Elman (2009).

While very little is to be lost in jettisoning the traditional assumption, much is to be gained. This paper will endeavor to show how some phenomena associated with grammaticalization emerge as simple consequences of the empirical, messy mapping of form to meaning, within the context of a very general associative learning algorithm that models such mappings. I will use this model to derive a specific path for grammaticalization of *be going to V* in Diewald's (2002) critical context, and investigate whether the contextual conditions around 1600 match the assumptions of the model.

1.2 Using Associative Learning to Map Form to Meaning

I will model the synchronic predictive associations between form and meaning using simple associative learning. For this paper, the key phenomenon that emerges from the learning models is *blocking*. While I use a specific learning model to illustrate the effect, it is in fact very general and can be understood without any recourse to learning algorithms.

Blocking is a thoroughly attested phenomenon that emerges in many associative models. Suppose an animal has learned that some event A predicts another event C. Then if both A and a new event B occur before C, the animal will not learn that B predicts C, because C was already predicted by A. B becomes redundant as a predictor of C, even if it is always paired with C. This effect has been demonstrated countless times in the animal learning literature since Kamin (1969).

The relevance of this phenomenon for meaning in language is evident in Shannon's information theory (Shannon, 1948). Shannon explicitly views communication as incremental reduction of uncertainty about a message, as described above. In Shannon's information theory, information is reduction in uncertainty, which can be quantified using probability distributions. If a phrase such as *the ball* is itself well-predicted, and its meaning is well-predicted by surrounding context, then the word itself will not have much uncertainty left to reduce. Thus the word *ball* carries less information than it would in other contexts. The information was instead carried by other words. *Ball* doesn't end up meaning BALL in these contexts as strongly as it could because that meaning has been blocked by the context.

I will show how blocking can result in semantic bleaching, which combined with reanalysis results in the creation of a new construction with a new, ubiquitously available meaning.

1.3 Naive Discriminative Learning

My model of choice for mapping form to meaning is Naive Discriminative Learning. In this role, the model has met with great success recently in modeling diverse processing effects in reading. However, I use it not because of its power but because of its conceptual simplicity, generality, and reliability. The model is a basic implementation error-driven associative learning; as such, its basic results generalize to more sophisticated models, while the simplicity of the model means that great insight is possible about *how* the model is working when exposed to data. While more powerful models such as connectionist neural networks with multiple layers and subtle update rules will have more success in learning structured relations, their workings are more difficult to analyze. Moreover, since this learning algorithm has been tested extensively, it is fairly reliable that its output will correspond to actual human behavior.

The model is also known as the Rescorla-Wagner model and was developed as an empirical description of Pavlovian conditioning. It has met with great success in modeling human category learning and language learning (Ramscar et al., 2010); many of its counterintuitive predictions have turned out to be correct. However, for the sake of this paper, I take it only as a representative model for associative (discriminative) learning, and use it only to determine the empirical mapping from form to meaning synchronically. I do not want to make the claim that language change results from 'incorrect' learning by a younger generation.

The model implements error-driven learning, which means that it continually compares its predictions to reality and, when it finds a discrepancy, changes those predictions incrementally until error is minimized. Critically, the model does not know *why* its predictions have been correct or incorrect. Thus, if the model predicts an event for all the wrong reasons, but the event reliably occurs when the model thinks it will, then that event generates no error and no learning results. Blocking is the lack of learning when outcomes are already predicted. For details on the model and how blocking emerges from it, see Appendix A.

1.4 Blocking in Language

As hearers listen to language, they try to discriminate the speaker's meaning given his words. Speakers then deploy words that will lead the hearer to deduce the correct message. We can model the discrimination of meanings given words as the prediction of meanings given words (Baayen et al., 2011; Baayen 2010, 2011); this is not only a model of comprehension, but a model of the mapping that a speaker uses to cause a hearer to discriminate a message. I do not assume that words correspond to

meanings; rather, they are empirically associated with meanings.

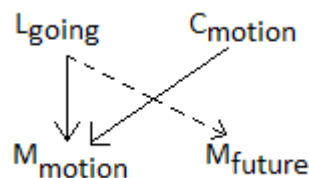
If a word always appears in a certain context, that context can change the way the word maps to meaning by means of blocking. Suppose, for example, that the form *going* comes to appear only after the adverb *speedily*. Only motion events can be described using *speedily*, so the form *speedily* will associate to the meaning MOTION. The form *going* will be unable to associate to the meaning MOTION because the meaning was already predicted by the adverb. We can say the meaning of motion was 'overpredicted' by the context, rendering the verb itself redundant and without its original 'lexical' meaning.

More generally, if a linguistic form L appears reliably in a context that predicts some meaning M , then L will fail to associate with M as strongly as it would otherwise. The context blocks L from meaning M . The strength of the blocking depends on the co-occurrence patterns of L and its context. For this paper I will refer to this kind of context as 'overpredictive' since it causes the meaning M to be so well-predicted in context that the conventional form-meaning mapping becomes impossible.

1.5 Grammaticalization in the Discriminative Learning Framework

By examining grammaticalization phenomena in this kind of framework, we can derive novel predictions about the contexts that enable grammaticalization. My example of choice is the emergence of the English construction *be going to V* with future meaning, which emerged in the early 1600s. The conceptual framework for understanding that example is represented in (2).

(2)



The figure represents hypothetical co-occurrence relations in a time slice in English. The linguistic form *going-to* in *going to V* always appears with the overpredictive context C_{motion} ; both of these forms always co-occur with the meaning M_{motion} . That is, when speakers use these forms, they always mean to express motion. In addition, the form *going-to* sometimes co-occurs with the meaning of future tense, presumably as an 'invited inference' that often occurs here, in the sense of Traugott & Dasher (2002). That meaning, M_{future} , may highly ubiquitous, appearing in many different utterances and discourses, and its co-occurrence with *going-to* is partly just a function of its ubiquity. The figure in (2) does not represent conventionalized associative links, only co-occurrence patterns.

Associative links formed using the co-occurrence patterns in (2) will demonstrate the effects of

blocking. *Lgoing* and *Cmotion* will compete to predict *Mmotion*, with the result that *Lgoing*'s link to that meaning will be weaker than otherwise. *Lgoing*'s association to *Mfuture* is not directly affected by blocking. Rather, as the link *Lgoing* → *Mmotion* becomes weaker, the link *Lgoing* → *Mfuture* becomes stronger *in comparison*. In the final equilibrium *Lgoing* may 'mean' *Mfuture* more than it means *Mmotion*.

Grammaticalization happens when the form 'means' *Mfuture* more than it means *Mmotion*. With the structure of cues in (2), but without blocking, it is entirely possible for *going-to* to end up meaning *Mfuture* weakly as a connotation. But in that case, speakers would only use *going-to* when they wanted to express *Mmotion* with a connotation of *Mfuture*, and the distribution of *going-to* would not change. Now *Mfuture* is a highly ubiquitous cue, so if *going-to* is freed of its association with *Mmotion* (via blocking), speakers may use *going-to* whenever they want to express future tense, resulting in host class expansion. This is how the overpredictive 'context shall set you free'. Blocking causes a linguistic form to have no meaning left except an abstract, ubiquitous one, leading to abstract and ubiquitous usage.

As an aside I would like to note that some unidirectionality phenomena emerge as a direct consequence of the assumptions of this model. When *going-to* is deprived of its original meaning, it becomes free to express whatever new meaning it associates to. It is more likely to associate to a ubiquitously available, abstract meaning than to a contentful, lexical meaning for two reasons: First, any contentful meanings are likely to be themselves already predicted by lexical items, and second, ubiquitously meanings are just more likely to be available, by chance. Once attached to a ubiquitous meaning alone, the form attains a more ubiquitous distribution. It is thus far more likely that a form will 'grammaticalize' than go in the reverse direction, acquiring concrete meaning with a highly restricted distribution.

1.6 Context and Grammaticalization

The formations of context described in the section above correspond roughly to contexts described by Diewald (2002) in her study of context and grammaticalization. Critically, Diewald holds that a form must appear in an *untypical* context before undergoing grammaticalization. The untypical context is a highly marked, marginal usage of a given linguistic form. This untypical usage then appears in a *critical context*, in which the meaning of a form is characterized by “multiple semantic and pragmatic opacity”.

Before grammaticalization, the English form *going to V* is untypical in that it appears in the progressive tense. Presumably, a speaker may utter a sentence with the form *going to V*

compositionally, as a result of the unification of the verb *to go* with the progressive *+ing*. The resulting form, *going to V*, is marginal and infrequent enough that its original lexical meaning may later be blocked away by context, while the other forms of the verb *to go* retain their motion meaning. More accurately, the string *going to V* as a whole may be reanalyzed as expressing future meaning while *not* expressing motion. The actual change in meaning would occur in Diewald's critical context, though in this model, the ambiguity of the context is not a necessary condition for meaning change.

2. Models of Blocking

2.1 Model 1: Bleaching as Blocking in Meaning Change

2.1.1 Aims of the Model

The first model I present is a demonstration of how certain distributions of context can cause blocking. I model a small, highly simplified linguistic ecosystem in which the verb *to go* may appear in the form *go-to* or *going-to*. In the model, the linguistic cue *going-to* is always paired with the meaning M_{motion} and only appears with the pragmatic meaning in half of its appearances. Nevertheless, when a motion context is present for all trials with *going*, the model should not associate *going* to the meaning of motion as strongly as it associates *go* to the meaning of motion. This should allow *going* to predict the meaning of the pragmatic 'invited inference' most strongly. The motion context blocks *going* from meaning motion, resulting in a new, semantically bleached use for the form *going*.

2.1.2 Cue structure in the model

The model finds the equilibrium associative weights for a dataset defined by 12 distinct trials. Cues consist of the following. There are four linguistic forms that appear as cues: *go*, *going*, *otherV1*, or *otherV2*. In addition there are three context forms: C_{motion} , C_{other1} , or C_{other2} . These linguistic forms are then associated to two different possible meanings: M_{motion} and $M_{pragmatic}$. *Going-to* and *go-to* are without exception paired with M_{motion} . In half of their trials, they are paired with $M_{pragmatic}$, the 'invited inference' of future tense.

The context cues were structured so that one of them strongly cued for motion. The context cue C_{motion} co-occurred with *go-to* in half of its trials. The other half of *go-to* trials co-occurred with another context, C_{other1} or C_{other2} . Furthermore, the context C_{motion} co-occurred with linguistic

cues *otherV1* and *otherV2* once each with the meaning M_{motion} , establishing that the context 'means' motion even without the verb *to go*. The non-motion contexts each appeared once with linguistic cues *otherV1* and *otherV2* and without any relevant meaning cues, thus establishing that these contexts do *not* reliably mean motion.

The distribution of the context cues was varied in order to draw out the effects of blocking. In the blocking condition, the context C_{motion} always co-occurred with *going-to*. In the non-blocking condition, the other contexts co-occured with *going-to*. We expect that when *going-to* always occurs in motion contexts, it will not itself come to cue for the meaning of motion as strongly as *go-to* does, due to blocking.

2.1.3 Results of the simulation

As predicted, the model learned to associate *going* with the meaning of motion only weakly when *going-to* appeared in contexts that also predicted motion. In that case, the form *going-to* predicts the pragmatic meaning slightly more strongly than it predicts the original lexical meaning. When *going-to* does not appear with motion contexts, the model maps both it and *go* to the meaning of motion. The associative strengths in the model are displayed in Figure 1.

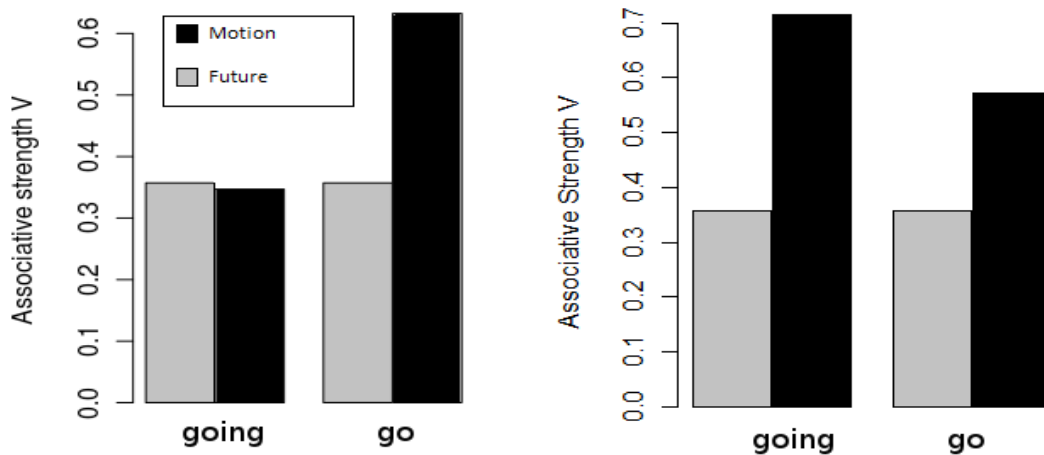


Figure 1. Associative weights from forms to meanings. Left, when *going-to* appears in an overpredictive context. Right, when *going-to* does not appear in an overpredictive context.

In the condition with overpredictive context, *going-to* ends up meaning M_{future} slightly more than it means M_{motion} . But note that in all conditions, the associative strength of a linguistic form $\rightarrow M_{future}$ is equal. Blocking does not affect the strength of this association. Rather, the association becomes *relatively* stronger as a form loses its original lexical meaning. The loss of lexical meaning is

what allows the form to express *only* the future tense meaning.

This model of meaning change is a proof of concept for the idea that semantic bleaching can be modeled as blocking. Although *going* was always paired with the meaning of motion, that was not what it ended up meaning most strongly, since the motion meaning was already predicted by surrounding context. Since grammaticalization happens to forms in idiosyncratic, marginal contexts, it is highly probable that bleaching happens because those idiosyncratic contexts 'mean' what those forms originally meant, leaving the forms without their original lexical meaning.

2.2 Model 2: Constructionalization

2.2.1 Model aims

Constructionalization is not a change in meaning for a given form, nor a change in form for a given meaning, but the creation of a new form-meaning pairing. As such, it must involve reanalysis. In the case of English *be going to V*, the forms *going to* are reanalyzed as a single unit, as evidenced by phonetic reduction to *gonna* and the loss of internal compositionality. This new unit should be mapped to the pragmatically 'invited' meaning FUTURE. We can model this reanalysis in the discrimination learning framework by allowing combinations of cues to compete in predicting meaning. For instance, if the cues *going*, *from*, and *N* are present in a trial, the combination cue *going+from+N* will also be present. If any combination of cues comes to strongly predict a meaning different from the meanings predicted by its components, we can say reanalysis has occurred, as this combination of cues is now functioning as a unit.

If the model successfully simulates constructionalization, then we should see one of the combination cues coming to predict a meaning that none of the constituent parts predict; furthermore, the new construction should exhibit semantic bleaching, i.e. the combination cue should *not* predict the lexical meanings of its constituent parts, or should predict those meanings only weakly.

This last goal bears some elaboration. Just as words provide cues to meaning, so should combinations of words, and the schemata they appear in. When one talks frequently about *going to London*, the combination schema *going+to+N* should somewhat predict the meanings of motion and direction. This only counts as a new construction if the combination predicts some meaning that its parts do not. Nevertheless, it is perfectly possible in the discrimination learning model for one cue to predict multiple outcomes, so such a construction can simultaneously predict a new meaning while also predicting the old meanings of its parts. For instance, the construction *going-to-V* may predict the meaning FUTURE as well as the meaning MOTION. However, it is only when the construction *going-to-V* actually *loses* the meaning MOTION that the construction will start to expand in its contexts of

use. If *going-to-V* means both MOTION and FUTURE, speakers will only use it in order to cue for both of those meanings; it is only after it loses the meaning MOTION that speakers will use it in non-motion contexts. Thus, in this kind of model, bleaching (which may result from blocking) is a precondition for host-class expansion.

2.2.2 Cue structure in the model

This model attempts to simulate a much more complex linguistic ecosystem than the first model. It includes uses of *to go* with nouns as well as verbs, and a variety of prepositions.

'Constructional' cues are combination cues representing the combination, in order, of linguistic cues present on each trial. In one condition, the motion cue was present for all trials with *going to V*; in another condition, the cue was absent on those trials.

The model includes two differences between the forms *going* and *go*. First, the structure *going to V* makes up a larger proportion of occurrences of *going* than it does of *go*. Second, *going to V* either always appears in a motion context, or never in a motion context; *go to V* appears half of the time in a motion context.

Constructional cues were present on every trial, providing every combination of linguistic cues the opportunity to be learned as a unit. If these combinations do not cue for any meaning in particular, then they should not predict any individual meaning strongly. If a combination predicts a new meaning, we can say reanalysis has occurred. Thus, when *going*, *to*, and a verb were present, a cue *going-to-V* was present; when the linguistic cues were *go*, *from*, and a noun, a cue *go-from-N* was present.

Since each trial contains a cue for the combination of all available cues, it is possible for the model to 'reanalyze' any combination as having a new meaning, different from that of its parts. However, we expect that only *going-to-V* will form a strong association with any meaning. Furthermore, we expect that when the overpredictive context is present for *going-to-V* trials in training, then *going-to-V* will *not* end up meaning motion; whereas when this context is absent, it will still end up meaning motion. This should happen even though *going-to-V* is always paired with the meaning of motion, and only paired with its pragmatic meaning in half of trials.

For further details on the cue structure in this model, see Appendix B.

2.2.3 Results of the simulation

The equilibrium associative weights from forms to meanings are shown in Figures 2 below, which shows the condition in which *going-to-V* always appears in motion contexts.

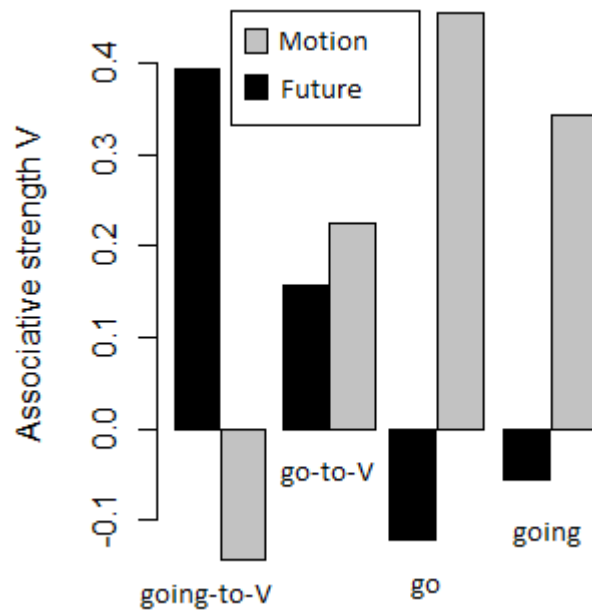


Figure 2. Associative weights from form to meaning when *going-to-V* appears in overpredictive contexts.

The model learns that the combination *going-to-V* means future tense, while the individual forms *go* and *going* still mean motion. Note that there is a *negative* association between *going-to-V* and the meaning of motion. This means that the construction *going-to-V* actually inhibits the motion meaning of its constituent part *going*.

Figure 3 shows the condition in which *going-to-V* never appears in an overpredictive context.

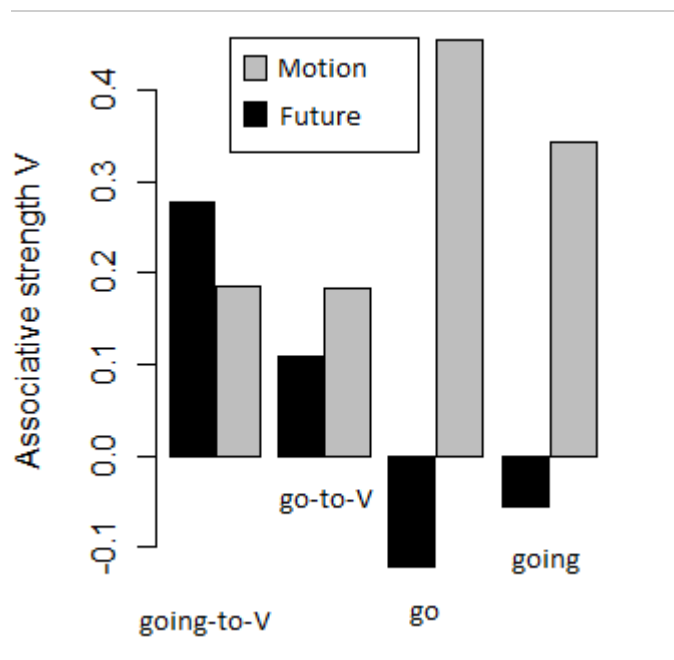


Figure 3. Associations from form to meaning when *going-to-V* does not appear in motion contexts.

As expected, in this case, *going-to-V* means motion just as much as *go-to-V* does. Unexpectedly, *going-to-V* means *Mfuture* more than it means *Mmotion* in this case as well as in the overpredictive case. Apparently, *going-to-V*'s frequent co-occurrence with the meaning of *Mmotion* was enough to trigger this change. This means *going-to-V* is likely to grammaticalize even without overpredictive context. However, since *going-to-V* still means *Mmotion*, it is less likely to grammaticalize than in the model with overpredictive context.

The more model with reanalysis reveals that constructionalization can happen without an overpredictive context, but the overpredictive context makes it much more likely. This is no surprise. It was never claimed that blocking was necessary for meaning change or grammaticalization. Rather, it can play a facilitating role along with other factors.

3. Go and going, historically

The model works, but is it proceeding from an accurate representation of the linguistic state of affairs for English? The models above suggest that if the string *be going to V* appears in contexts that imply motion, it will not come to mean motion in itself, due to blocking. The string may then come to have the abstract meaning of FUTURE as its only meaning, and is then free to appear whenever speakers mean FUTURE. The model works primarily from the assumption that *going to V* appears in

contexts that imply motion, whereas strings such as *go to V*, which are similar in lexical meaning, do not. We know that *going to V* grammaticalized and *go to V* did not; I hypothesize that these strings differed in their distribution with respect to motion contexts during the critical phase, around 1600.

There are strong reasons to believe that *going to V* appeared in more motion contexts than *go to V*. These center on two critical aspects of *going to V*: (1) that it is an untypical form, and (2) that it is a progressive form. Since the progressive verb aspect appeared relatively rarely in Early Modern English, the form *going to* was infrequent in comparison with *go to*. Infrequent forms are known to occur in more idiosyncratic, predictive contexts than frequent forms (McDonald & Shillcock, 2001). Since *going to* was more likely to occur in rich, predictive contexts than *go to*, it was also more likely to occur in contexts predictive of motion.

Furthermore, it has been found that progressive verbs are used more frequently than plain verbs in descriptive contexts in discourse (Ferretti et al., 2007). Since progressive verbs are more likely to appear in descriptive contexts, they are more likely to appear in descriptive contexts that imply motion. It has even been found that the use of progressive verbs primes English hearers to expect descriptive information such as location, which in many contexts implies motion.

In addition to these reasons, it is worth noting the concrete contexts in which these forms would be encountered in 1600s England. The vast majority of English speakers had only ever experienced language as spoken by speakers who were physically present. As such, when they heard the string *I am going*, it was likely to be spoken by a person actually in physical motion, or obviously about to be in physical motion. This immediacy might not have been shared by the plain verb form *I go*.

In summary, there are ample theoretical reasons to think that *going to V* appeared more often in motion contexts than *go to V*. Below, I will investigate the actual distribution of these forms in printed materials.

3.1 The contexts of English *be going to*, 1580-1650

Here I will investigate the actual distribution of these strings in English from 1580 to 1650, to determine to what extent the actual distributions match the assumptions of the model. I hope to find that *going to V* appears in more motion contexts than *go to V*.

3.1.1 Source of Data

My data source is Google Books for the period 1500-1650. I searched English books of that period for the following strings: “am going to”, “is going to”, “are going to”, “be going to”, “goeth to”, “goes to”, “went to”, and “go to”. Matching strings appearing before a verb were collected by hand.

While this database is exceedingly easy to search, it presents a number of problems in terms of reliability. The dates given for books are not always correct, or are not always the date of publication; for instance, several translations of Indian poems written in the 1600s and translated into English in the nineteenth century are labeled with a date in the 1600s. To correct for this, when possible, I checked the date on the cover of the book as scanned. Some books remain under copyright and as such only very limited parts of them can be viewed; this limited the amount of context I could take into account. For all books, there is no reliable and stable way to access a given line of a certain page of text, so in the database I gather, I can only provide hyperlinks to whole books and not to specific pages. Many potential examples were doubtless missed due to improper character recognition.

Despite these disadvantages, Google Books proved a fruitful source of data. The searches for 'be going to' returned 39 good examples of the pattern *be going to V*; 'go to' returned 21 examples. I also collected 19 examples of *going to V* as a gerund or participle.

3.1.2 Coding of Examples

Within this sample I tested two hypotheses. First, I hypothesized that *be going to V* appears in motion contexts more frequently than *go to V*. Second, in order to test the assumption that the progressive form *going* is used in descriptions more frequently than the simple form *go*, I checked whether a given example of the verb *to go* was describing an ongoing process providing background to a main event, hypothesizing that the form *going* is more likely to occur in that role.

A context was coded as a motion context if it contained one of the following within a paragraph: (1) a resultative location, (2) a reference to the agent being in motion, (3) an adverbial stating the agent is in transit, i.e. *upon the way*, (4) an adverbial that could only refer to motion, i.e. *with all speed*, or (5) stage directions indicating that a character is in transit (entering, speaking, then exiting).

A form of *to go to* was coded as meaning motion by examination of the context. If it was plausible that the agent was actually going, it was coded as motion. Examples (3-5) demonstrate the coding.

(3) Motion context, motion meaning:

- a. These newes met the Syracusian Army vpon the way, as it was going to ioyne with Marcellus, who had ended his businesse before. (Ex. 21)
- b. close by the Temple of Vesta their paths diverge, for his interlocutor was bound for the Forum to appear in a case, and Horace, who had announced that he was going to pay a visit on the other side of the Tiber, (Ex. 20)

(4) No motion context, motion meaning.

a. And the other Corne-seller, as he was going to drowne himself, was taken and carried to prison, where he hanged himselfe the night following. (Ex. 34)

b. The Sauioir of the world hath celebrated the Legall Pasque, and goeth to prepare the great and admirable Feast of the Sacrament and Sacrifice of his body, ordaining the same in stead of the Hebrewes Paschall Lambe. (Ex. 42)

(5) No motion meaning: And Esau said, Loe I am going to dye: and wherefore serveth this first-birthright unto me? (Ex. 6)

Examples were also coded as to whether the form *to go to V* was expressing an ongoing action providing a background description for another event. An examples was coded this way only if the *to go to V* form appeared within a temporal adverbial, as in (6).

(6) And when she was going to fetch it he called to her, saying: Bring me also, I beseech thee, a morsel of bread in thy hand. (Ex. 19)

Appendix C contains all examples and their codings.

3.1.3 Results

The results show tentative evidence that *going-to-V* appeared in motion contexts more than *go-to-V* did. Furthermore, they show evidence that *going-to-V* appeared more often in background descriptions than *go-to-V*

In 38 examples of *going-to-V*, 14 did not express motion and were thus already instances of the grammaticalized form. Of the remaining 34 instances expressing motion, 18 (75%) appeared in a motion context. In 22 examples of *go-to-V*, all expressed motion. 9 of these (41%) appeared in a motion context. The difference between these samples is statistically significant, $t = -2.4$, $p = 0.02$. However, many of the codings were ambiguous, so more data and cross-validation is necessary before a strong claim can be made that *going-to-V* appeared in more motion contexts than *go-to-V*.

In the 38 examples of *going-to-V*, 13 (34%) were in temporal adverbials. Just 2/22 (9%) of examples of *go-to-V* appeared in temporal adverbs ($t = 2.5$, $p = 0.01$). Thus, the progressive form appeared more frequently in background descriptions.

3.1.4 Discussion

Because of the subjective nature of coding (performed by the author), the results reported here must be checked with codings from other raters, and preferably augmented with new data. As such, though the results as currently coded have a less than 2% chance of being due to chance, I hesitate to

make a strong claim. However the results are certainly promising.

One result is that a full 37% of *going-to-V* examples in Google Books 1580-1650 were already grammaticalized future markers. The period under examination may be slightly beyond the critical period in which we might expect to find strongly overpredictive contexts.

Overall the results support the hypothesis that overprediction and the resultant blocking contributed to the grammaticalization of English *be going to V*, by bleaching the motion meaning of that construction, leaving it free to appear in contexts where no motion is implied.

4. Conclusions

4.1 What happened to *be going to V*?

Here I will recapitulate the story that this paper posits for the development of English *be going to V* as a future tense marker. As an assumption, I posit that the form-meaning link in construction grammar is better described as a form-meaning association, with linguistic forms associating to speaker meanings according to empirical co-occurrence patterns, and that speakers use linguistic forms to cue for all the meanings associated with those forms.

Initially, the English verb *to go*, being often used with the meaning MOTION, is associated with the meaning MOTION. Speakers use any form of the verb to express this meaning, producing for instance *going* as a unification of the constructions *to go* and *+ing*, in which *+ing* is making a more or less separate semantic contribution. Since when one states that one is going to a place, one has not yet arrived, the uses of the verb *to go* with the preposition *to* are also sometimes paired with the meaning FUTURE. Speakers may reanalyze *(to go)+to* as meaning MOTION *and* FUTURE, but since this new unit is still used to express MOTION, its distribution does not change, and the reanalysis is covert.

Overt constructionalization occurs when the reanalyzed form *going+to+V* loses the meaning MOTION due to blocking. *Going+to+V* is an untypical form since it is a rare form of the verb *to go*, and it appears with unusual frequency in motion contexts, in descriptions. These motion contexts render the MOTION meaning of *going+to+V* redundant, so the reanalyzed form is no longer used to express that meaning. The more typical form *go+to+V* does not lose the meaning MOTION because it does not occur in motion contexts.

Some distinctions that have been drawn in the literature are obscured for the sake of building a model with sufficient simplicity to generate empirical predictions. For instance, the distinction between generalized implicatures, particular implicatures, and coded meaning (Hansen & Waltereit, 2006) does not enter into the model. The model treats meanings and implicatures in exactly the same manner. It is exposed to pairings of form and speaker meaning, and learns how the forms conventionally express

meaning. In a sense, the model changes a particular (but frequent) conversational implicature into either a generalized one or into coded meaning; but I do not know how to distinguish between these two.

4.2 Some other applications of blocking

Blocking in the sense of this model becomes applicable whenever a word or phrase's original meaning is general enough that surrounding context can block it.

The English construction *a-lot-of-N* arose from an actual description of a *lot* of some thing such as land or goods. The actual meaning of a *lot* is just of a delineated quantity or package of associated goods. If one speaks often of buying and selling such lots—that is, if the phrase *a lot of* appears in contexts of economic activity—the form *lot* will itself lose its economic meaning by blocking. What is left is just the meaning of quantity. Speakers then use the form *a lot of* whenever they want to express only quantity with no economic connotation. The blocking model thus makes the prediction that pre-grammaticalized *a lot of* appears in more overpredictive economic contexts than, say, *a pile of*.

4.3 Paths to grammaticalization

Blocking is not the only path to grammaticalization, but it is one that has not been explored yet to my knowledge. If *going to V* turns out to have appeared in more motion contexts than *go to V*, then this model will have succeeded in telling us something we did not know before.

As the model in section 2.2 demonstrates, blocking is not necessary for grammaticalization, but it does play a major facilitatory role. In that model, *be going to V* underwent constructionalization even without blocking, due to the fact that it appeared with the meaning FUTURE more frequently than *go to V* did. Any instance of grammaticalization is likely the result of many coinciding factors, and I hope I have demonstrated that blocking is one of these.

There are a number of shortcomings to the models presented here. A more realistic model would involve a more empirical notion of meaning, would involve associations between linguistic forms as well as from forms to meanings, and would possibly involve predictive associations from meaning to form. However, these relatively simple models provide a comprehensible demonstration of blocking in context.

Aside from the specific phenomenon of blocking, I hope that the discrimination learning framework adopted here proves useful in conceptualizing the changes involves in grammaticalization. As noted at the end of section 1.5, many of the phenomena of unidirectionality emerge naturally from the formulation of grammaticalization in terms of words being used as cues for meanings. The

apparently contradictory descriptions of grammaticalization as reduction (Lehmann, 1985) or as expansion (Himmelmann, 2004) emerge as two sides of the same coin: a linguistic form is used to cue for an ever more ubiquitous and abstract meaning; as such, both the meaning and the distribution becomes less constrained. Reduction in meaning entails expansion in distribution.

At the very least, this paper provides a new hypothesis to check against historical data: soon-to-be grammaticalized forms appear in contexts that overpredict their original meanings.

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Appendix A: Details about the Rescorla-Wagner Model.

The Rescorla-Wagner model posits of a set of associative weights $V_{i,j}$ between events i (cues) and events j (unconditioned stimuli); the weight represents the extent to which the model will expect event j if it encounters event i . When event i occurs, the weights change in response to error according to the equations in (3-4).

$$(3) V'_{i,j} = V_{i,j} + \Delta V_{i,j},$$

$$(4) \Delta V_{i,j} = \alpha_i \beta_j (\lambda_j - V_{totj}),$$

where α_i and β_j are parameters that affect only the rate of learning, λ_j is the salience of event j (i.e. 1 if it occurs and 0 if it does not), and V_{totj} is the sum of the weights of all currently present cues predicting j . Thus, starting with all weights 0, if the cue i occurs and then the stimulus j occurs, $\lambda_j = 1$ and $V_{totj} = 0$, so i comes to predict j . But then if cue i occurs and j does not occur, $\lambda_j = 0$ and V_{totj} is positive, so the cue i loses strength as a predictor of j .

Blocking emerges naturally from this formulation. Say an event i has been learned as a reliable predictor of j . Then a cue k occurs, which has never occurred before, and which is also a reliable predictor of j . If k always co-occurs with i , then k will never be learned as a predictor of j , because j is already well-predicted (i.e. the V_{totj} will always be positive). Even if k is in fact a better predictor of j , the model has difficulty recovering from previously learned associations. The effect also emerges if i and k , always co-occurring, are both reliable predictors of j . Both i and k will be relatively weak predictors of j individually. This process is critical in the discussion of grammaticalization because I will argue that it often underlies semantic bleaching.

The model as I apply it uses the equilibrium formulae of Danks (2002). This algorithm allows the fast calculation of the end weights for the model (i.e. the values of the weights when the weights in the model stop changing) without running an actual trial-by-trial simulation of learning. As such, I am using the model to show how form maps (or doesn't map) to meaning, rather than making an explicit claim about learning.

Appendix B: Cue structure in the model of constructionalization of *be going to V*.

Linguistic cues are the verb *to go* in the forms *go* or *going* in addition to four other verbs; the prepositions *to*, *from*, and four others; verbs *V1* and *V2* and nouns *N1* and *N2*; and contexts described below. Forms of *to go* always predicted the meaning *Mmotion*. The form *going* appeared twice before a

verb; in one those trials it predicted the meaning *Mpragmatic*. The form *go* also appeared twice before a verb, in one of those trials meaning *Mpragmatic*. Otherwise, *going* appeared before nouns and all the prepositions; *go* also appeared before various prepositions and nouns. Only when the verb *to go* was followed by a verb did it mean *Mpragmatic*.

* *going* and *go* appear with prepositions *to* and *from* with a noun,

* *go* and *going* always appear with the meaning *Mmotion*,

* *go* and *going* appear with *Mfuture* half the time that they appear with *V*, and never when they appear with *N*.

* 1/4 of trials with *going to* are followed by a verb; 1/10 of trials with *go to* are followed by *V*.

* Motion context *Ctx* appears in 1/4 of trials with *go*, and in 8 trials without *go* or *going* with the meaning *Mmotion*.

* Motion context *Ctx* appears in 1/3 of trials with *go*. It never appears with *go-to-V*.

* *going-to-V* appears either always with *Ctx* or never with *Ctx*.

Appendix C. Google Books examples and their coding.

Year

Author or Publisher

Title

Book URL

Quote

Coding: Motion context? Motion meaning? Temporal adverbial?

1. 1609

Kenedy

Bible; Genesis 49:29

<http://books.google.com/books?id=oHt7AAAAMAAJ>

29. And he charged them, saying: I am now going to be gathered to my people: bury me with my fathers in the double cave, which is in the field of Ephron the Hethite,

N N N

2. 1629

Longman Green

Calendar of state papers and manuscripts relating, to English affairs, existing in the archives and collections of Venice: and in other libraries of northern Italy, Volume 22

<http://books.google.com/books?id=KzjvAAAAMAAJ>

With the information which we have sent you about these affairs you will try and learn the opinions of the ministers: what they are going to say on the subject.

N N N

3. 1601

Hans Claude Hamilton, Ernest George Atkinson

Calendar of the State Papers Relating to Ireland, of the Reigns of ... Great Britain. Public Record Office,

<http://books.google.com/books?id=KWFnAAAAMAAJ>

As the victuallers have not yet delivered in their books of receipts and issues to the commissioners and auditors, they cannot even tell that they are going to be treated in the way they suggest.

N N N

4. 1628

John Earle, Edward Blount

Micro-cosmographie, or, A peece of the world discovered: in essayes and characters

<http://books.google.com/books?id=acGeJJ6nLYsC>

He is fumbling with his purse-strings, as a Schoole-boy with his poynts, when he is going to bee whipt, till the Maister weary with hia long stay, forgiues him.

N N? Y

5. 1619

Louis Richeome

Holy pictures of the mysticall figures of the most holy sacrifice and sacrament of the eucharist, tr. by C.A

<http://books.google.com/books?id=1fUCAAAAQAAJ>

All these words tended to the same end, to declare that our Sauour was going to do some admirable worke vpon the bread, and the wine, in the end of his dayes, before hee died.

N N N

6. 1639

Henry Ainsworth

Annotations upon the five books of Moses, the book of the Psalmes and the song of songs

<http://books.google.com/books?id=ki1BAAAACAAJ>

And Jakob said, Sell to me this day thy first birthright. And Esau said, Loe I am going to dye: and wherefore serveth this first-birthright unto me?

N N N

7. 1638

Matthew Wilson, Edwart Knott

Christianity maintained, or A discouery of sundry doctrines tending to the ouerthrowve of Christian Religion: contayned in the answere to a booke entituled Mercy and Truth, or Charity maintayned by Catholiques

<http://books.google.com/books?id=IPh3k1fN9CgC>

We are certaine, that Christian Fayth is euen so much as probable; which now I am going to shew.

N N N

8. 1644

The Archbishop of Canterbury's Speech: or his funerall sermon preacht by himself on the scaffold on Tower-Hill, on Friday the 10. of January. 1644. upon Hebrews 12. 1, 2: Also, the prayers which he used at the same time and place before his execution

<http://books.google.com/books?id=5y03AAAAMAAJ>

He hath been much traduced by some for labouring to bring in Popery, but upon my Conscience (of which I am now going to give God a present account) I know him to be as free from this Charge I thinke as any man living ...

N N N

9. 1609

Kenedy

Bible

<http://books.google.com/books?id=oHt7AAAAMAAJ>

19. What is this thing that you do? Are you going to rebel against the king?

N N N

10. 1633

printed by Eliz. Alde, and are to be sold by Stephen Pemel at the signe of the Black Bull on London Bridge,

The lamentable and true tragedy of Master Arden of Feversham in Kent: VVho was most wickedly murdered by the meanes of his disloyall and wanton wife, who, for the love she bare to one Mosby, hired two desperate ruffins, Blacke-Will, and Shakebag, to kill him : Wherein is shewed the great malice and dissimulation of a wicked woman, the unsatiabie desire of filthy lust, and the shamefull end of all murderers

<http://books.google.com/books?id=1iHPAAAAMAAJ>

But now I am going to see what flood it is, / For with the tyde my master will away, / Where you may front him well on Rainam downe,

N? Y? N

12. 1638

Thomas Hooker

The soules preparation for Christ: a treatise of contrition

<http://books.google.com/books?id=6QQDAAAQAAJ>

Consider that passage of the good Thiefe upon the Crosse, Luk. 23. 40. vwhen the reprobate vvas going to be executed for his sin, he railed upon Christ.

N N Y

13. 1598

Shakespeare

Richard III

<http://books.google.com/books?id=1AwWAAAAYAAJ>

But soft, here comes my executioners. / How now, my hardie stout resolved mates, / Are you now going to dispatch this deed?

N Y N

14. 1617

J. Roberts

A letter to Dr. [Andrew] Snape, occasion'd by his Letter to the Bishop of Bangor [i.e. Benjamin Hoadly]: Wherein the doctor is answer'd and expos'd, paragraph by paragraph (Google eBook)

<http://books.google.com/books?id=1UIaAAAAMAAJ>

...his Lordship need not be asham'd, to have the World think that he is more indolent and unmov'd in his ordinary Devotions than Jesus the Saviour of the World was, when he was in an Agony, and going to bear the Punishment due to the Guilt of all Mankind.

N N Y

15. 1647

John Scott

The Christian life: from its beginning to its consummation in glory, Volume 3

<http://books.google.com/books?id=fEwuAAAAYAAJ>

but his Meaning is this, by presenting that Sacrifice to my Father in Heaven, which I am going to offer on the Cross, and by which, among other Blessings, I shall purchase of my Father his Holy Spirit for you...

N N N

16. 1647

John Scott

The Christian life: from its beginning to its consummation in glory, Volume 3

<http://books.google.com/books?id=fEwuAAAAYAAJ>

All which considered, I can by no means think, that that which occasioned this bitter Agony, was merely the Prospect of what he was going to suffer from the Hands of Men, since not only some Martyrs but some Malefactors, have suffered much more with less Dejection;

N N N

17. 1647

John Scott

The Christian life: from its beginning to its consummation in glory, Volume 3

<http://books.google.com/books?id=fEwuAAAAYAAJ>

And when he was going to offer himself up on the Cross, he tells his Disciples, ...

N N Y

18. 1628

Richard Cleaver, John Dod

Ten sermons, tending chiefly to the fitting of men for the worthy receiving of the Lords Supper

<http://books.google.com/books?id=a249AAAACAAJ>

and therefore let us remember for our comfort when we are in this strait and difficult and vnpleasant way, that we are going to be installed into a kingdome.

Y Y N

19. 1609

Kenedy

The Holy Bible: I Kings

<http://books.google.com/books?id=oHt7AAAAMAAJ>

...to her: Give me a little water in a vessel, that I may drink. And when she was going to fetch it he called to her, saying: Bring me also, I beseech thee, a morsel of bread in thy hand.

N Y Y

20. 1616

Ben Jonson

Poetaster

<http://books.google.com/books?id=JV4LAAAIAAJ>

When they reach the entrance to it, close by the Temple of Vesta their paths diverge, for his interlocutor was bound for the Forum to appear in a case, and Horace, who had announced that he was going to pay a visit on the other side of the Tiber, would leave the Sacra Via at that point, and turn round the side of the Palatine towards the river.

Y Y N

21. 1614

Sir Walter Raleigh

The history of the world

<http://books.google.com/books?id=MxQWkgAACAAJ>

These newes met the Syracusian Army vpon the way, as it was going to ioyne with Marcellus, who had ended his businesse before.

Y Y Y

22. 1611

John Speed

The historie of Great Britain under the conquests of the Romans, Saxons, Danes and Normans

<http://books.google.com/books?id=kg1OcgAACAAJ>

These English repentances seeme somewhat too late; but that prouidence which the King of Scotland soone after used, was, as more temestiuē, so more commendable, when meeting the same Legate (for now into Scotland he is going to gather coyne) he denyed him entrance into his Kingdom, telling him, he was the first Legate which euer entered that Kingdome; yet by entreatie to saue the Legates credite, he was permitted ...

Y Y Y

24. 1637

Robert Monro

Monro, His expedition with the worthy Scots regiment (called Mac-Keyes-regiment) levied in August 1626

<http://books.google.com/books?id=KMpFAAAAcAAJ>

...if we had, the enemy getting intelligence, he could with ease overtake us, and cut us off, as he did, some yeeres before, cut off the same Country three Regiments of Dutch who were going to serve his Majesty against the Pole.

Y Y Y

25. 1616

I Jacques, Bishop of Winton

The workes of the most high and mightie Prince Iames, by the grace of God king of Great Britennie, France and Irelande, defender of the faith and c. an humble supplication for tolerance and libertie by James Great Britain, King I

<http://books.google.com/books?id=1pOChWOlvBgC>

About fiue of the clocke being Tuesday, came the yonger Wright to my Chamber, and tolde me that a Nobleman called the L. Mountegle, saying, Arise, and come along to Essex house, for I am going to call vp L. of Northumberland, saying withall, The matter is discovered.

N Y? N

26. 1633

printed by Eliz. Alde, and are to be sold by Stephen Pemel at the signe of the Black Bull on London Bridge,

The lamentable and true tragedy of Master Arden of Feversham in Kent: VVho was most wickedly murdered by the meanes of his disloyall and wanton wife, who, for the love she bare to one Mosby, hired two desperate ruffins, Blacke-Will, and Shakebag, to kill him : Wherein is shewed the great malice and dissimulation of a wicked woman, the unsatiabie desire of filthy lust, and the shamefull end of all murderers

<http://books.google.com/books?id=1iHPAAAAMAAJ>

Greene. ...How now Michael, whether are you going? / Mich. My master hath new supt, / And I am going to prepare his chamber.

Y Y N

27. 1582

Fernaõ Lopes de Castanheda

The first booke of the historie of the discoverie and conquest of the East Indias, enterprised by the Portingales, in their daungerous nauigations, in the time of King Don Iohn, the second of that name
<http://books.google.com/books?id=YkoC-kx4TAgC>

The general being disimbarked and come to land, and walking there he ouertooke a man, one of the inhabitants of the same, who was going to gather honny at the foote of a bush, where the Bees made the same without anie hiue, ...

Y? Y Y

28. 1609

Kenedy

Bible

<http://books.google.com/books?id=oHt7AAAAMAAJ>

And he answered: I am a Levite of Bethlehem Juda, and I am going to dwell where I can, and where I shall find a place to my advantages.

Y Y N

29. 1633

printed by Eliz. Alde, and are to be sold by Stephen Pemel at the signe of the Black Bull on London Bridge,

The lamentable and true tragedy of Master Arden of Feversham in Kent: VVho was most wickedly murdered by the meanes of his disloyall and wanton wife, who, for the love she bare to one Mosby, hired two desperate ruffins, Blacke-Will, and Shakebag, to kill him : Wherein is shewed the great malice and dissimulation of a wicked woman, the unsatiabable desire of filthy lust, and the shamefull end of all murderers

<http://books.google.com/books?id=1iHPAAAAMAAJ>

[Here enters Micheall] How now *Michael*, whither are you going? / *Michael*. To fetch my Masters Nagge, / I hope youle think on me.

Y Y N

30. 1633

printed by Eliz. Alde, and are to be sold by Stephen Pemel at the signe of the Black Bull on London Bridge,

The lamentable and true tragedy of Master Arden of Feversham in Kent: VVho was most wickedly murdered by the meanes of his disloyall and wanton wife, who, for the love she bare to one Mosby, hired two desperate ruffins, Blacke-Will, and Shakebag, to kill him : Wherein is shewed the great malice and dissimulation of a wicked woman, the unsatiabable desire of filthy lust, and the shamefull end of all murderers

<http://books.google.com/books?id=1iHPAAAAMAAJ>

I came thither, thinking to have had / Harbour as I was wont, / And she was ready to thrust me out at dores, / But whether she would or no, I goe me up, / And as she followed me I spur'd her downe the staires, / And broke her necke, and cut her Tapsters throate, / And now I am going to fling them in the Thames, / I have the gold, what care I though it be known? / I'll crosse the water, and take sanctuary. / [Exit Shakebag]

Y Y N

31. 1598

Jorge de Montemayor, Gaspar Gil Polo, Alonso Pérez de Montalbán

Diana of George of Montemayor

<http://books.google.com/books?id=hgY8s75LbpwC>

This sight kindled an extreme kinde of loue in him, as it appeered afterwarde by the strange effects he shewed: for he endeoured to make me know it sometimes in the fielde, as I was going to carrie the Shepherds their dinner; sometimes againe, as I was going to the riuer to rince my clothes

Y Y Y

32. 1611

The Grolier Society

Bible

<http://books.google.com/books?id=oqvNAAAAMAAJ>

and he called to her, and said, Fetch me, I pray thee, a little water in a vessel, that I may drink. And as she was going to fetch it, he called to her, and said, Bring me, I pray thee, a morsel of bread in thine hand.

Y Y Y

33. 1588

Robert Greene

Pandosto: or, The Historie of Dorastus and Fawnia

<http://books.google.com/books?id=5FIPAAAQAAJ>

Dorastus and Fawnia, were halfe astonished to see the olde shephert, marvailing greatly what wind had brought him thither, til Capnio told them al the whole discourse; how Porrus was going to make his complaint to the King, if by pollicie he had not prevented him

N Y Y

34. 1602

Jean de Hainaut, tr. Simon Patricke

The Estate of the Church: with the Discourse of Times, from the Apostles untill this Present

http://books.google.com/books?id=_L48AAAACAAJ

The one fell dead suddenly as he opened his barne-doore, the corne whereof also was eaten and carried away with vermine: And the other Corne-seller, as he was going to drowne himself, was taken and carried to prison, where he hanged himselfe the night following.

N Y Y

35. 1600

Leo Africanus

A geographical historie of Africa

<http://books.google.com/books?id=OG8KAQAAIAAJ>

bidding us farewell; he told vs that the same day he was going to make an assault upon his enimies. And so departing from him, I returned to mine vnele.

N Y? N

36. 1588

Longman Green

Calendar of state papers, foreign series, of the reign of Elizabeth: preserved in the State Paper Department of Her Majesty's Public Record Office, Volume 21, Part 1

<http://books.google.com/books?id=clzWAAAAMAAJ>

The few Spaniards who are going to Flanders have already crossed the Alps. His Majesty has provided three millions here and five millions in Germany. In a short time it will be known whom they are going to serve.

Y Y N

37. 1637

Robert Monro

Monro, His expedition with the worthy Scots regiment (called Mac-Keyes-regiment) levied in August 1626

<http://books.google.com/books?id=KMpFAAAAcAAJ>

The next morning by day light his Majesty did send for Colonel Hepburne and me, and tells he was going to visit the walles without, and commanded to send two hundred musketeers of our Regiment towards the Port before him,

Y Y N

38. 1629

Longman Green

Calendar of state papers and manuscripts relating, to English affairs, existing in the archives and collections of Venice: and in other libraries of northern Italy, Volume 22

<http://books.google.com/books?id=KzjvAAAAMAAJ>

The imperialists have assembled the mass of their troops five German miles from Strasburg, giving out that they are going to besiege that town and other imperialist cities, in order to compel them to surrender ecclesiastical goods, in accordance with the emperor's order of the last day of April.

Y Y N

39. 1601

Longman, Green

Calendar of the State Papers Relating to Ireland, of the Reigns of Henry VIII., Edward VI., Mary, and Elizabeth. ...: 1601-1603 (with Addenda, 1565-1654)

<http://books.google.com/books?id=KWFnAAAAMAAJ>

...to be scattered because we did not know where the Spaniards were going to land

Y Y N

40. 1615

Henri de Feynes

An exact and curious suruey of all the East Indies, euen to Canton, the chiefe cittie of China: all duly performed by land, by Monsieur de Monfart, the like whereof was neuer hetherto, brought to an end : Wherein also are described the huge dominions of the great Mogor, to whom that honorable knight, Sir Thomas Roe, was lately sent ambassador from the King : newly translated out of the traualers manuscript

<http://books.google.com/books?id=ugNd06S9K4UC>

you need but tell them the price, and make choyce of one of their Brokers, who goeth to exhibite them to their Merchants, and so make more of your wares by th'one halfe

N Y N

41. 1597

John Payne Collier

Miscellaneous tracts: temp. Eliz. & Jac. 1, Volumes 12-15

<http://books.google.com/books?id=iZw4AAAAIAAJ>

for if thou wouldest draw fourth good and cleane wordes out of my mouth, thou wouldest washe thy teeth, as everie tapster that goeth to drawe good beare will washe the potte before hee goeth.

N Y N

42. 1619

Louis Richeome

Holy pictures of the mysticall figures of the most holy sacrifice and sacrament of the eucharist, tr. by C.A

<http://books.google.com/books?id=1fUCAAAAQAAJ>

The Sauior of the world hath celebrated the Legall Pasque, and goeth to prepare the great and admirable Feast of the Sacrament and Sacrifice of his body, ordaining the same in stead of the Hebrewes Paschall Lambe.

N Y N

43. 1597

Gerard Legh

The accedence of armorie

<http://books.google.com/books?id=ppM8AAAAcAAJ>

He infecteth the water that he commeth neere. His enemy is the weasel, who when he goeth to fight with the cockatrice eateth the herbe, commonly called rew, and so in flight biting him he dieth, and the weasel therewith dieth also.

N Y Y

44. 1589

Longman, Green

Calendar of state papers, foreign series, of the reign of Elizabeth: preserved in the State Paper Department of Her Majesty's Public Record Office, Volume 23

<http://books.google.com/books?id=cEjWAAAAMAAJ>

It is to be doubted that he goeth to take possession of some frontier town in France in this time of broil.

N Y N

45. 1606

Jean Bodin

The six books of a commonweale A facsimile reprint of the English translation of 1606, corrected and supplemented in the light of a new comparison with the French and Latin texts

<http://books.google.com/books?id=2X4cAAAAIAAJ>

To be a good and a iust man: and in that habit goeth to heare masse; which in solemne manner done, he putting off his shepheards apparrell, and attired like a prince, goeth vp to the stone again ...

N Y N

46. 1597

Claude de Sainliens

The Italian Schoole-maister

<http://books.google.com/books?id=c-A7AAAAcAAJ>

Because of the night that approched, the iustling was ended: wherefore the men of armes went to vnarme thēselues: and the King together with the gentlemen retired themselues to the palaiice.

N Y? N

47. 1612

Tacitus

The annales of C. Tac

<http://books.google.com/books?id=1TICAAAACAAJ>

Neither couldest thou haue discerned the lamentation of kinsfolks from the stranger; nor the women from the men: sauing, that the fresh grieffe of such as went to meete her, exceeded the lamentation of her traine, already wearied with lone continuance of sorrow.

N Y N

48. 1600

Martin Fumée

The historie of the troubles of Hungarie: containing the pitifull losse and ruine of that kingdome, and the warres happened there, in that time, betweene the Christians and Turkes

<http://books.google.com/books?id=apw8AAAACAAJ>

Castalde being there arriued, hee was lodges with the Spanyards within the towne, and disposed the Caualarie and the rest of the souldiours in places conuenient thereabout, whereby they might keepe euery man in the greater securitie, attending there a certain time, to finde the meanes to ioyne with the Frier, who after the taking of Albe-iula, went to see the Queene, and gaue her notice of the coming of Castalde, further perswading her to commaund those of Dalmas, that they should yeeld to him ...

N Y N

49. 1611

John Speed

The historie of Great Britain under the conquests of the Romans, Saxons, Danes and Normans

<http://books.google.com/books?id=kg1OcgAACAAJ>

when the King hauing lately left Hugh Bishop of Lincolne (called the Saint, for the opinion of vnfained integrity, though blemished with some obstinacies, and surcharged with Legends of fained Miracles) at London very sicke, (where himselfe with gracious care went to visite him, and both confirmed his Testament, and promised the like for other Bishops after,) now hearing he was dead ...

N Y N

50. 1616

Christopher Sutton

Godly meditations upon the most holy sacrament of the Lord's supper

<http://books.google.com/books?id=4-4CAAAAQAAJ>

He goeth to meet the king with all speed, receiveth him with great joy

Y Y N

51. 1582

William Allen

Holy Bible faithfvly translated into English: ovt of the authentical Latin; Matthew 18:12

<http://books.google.com/books?id=kofWAAAAMAAJ>

If a man haue an hundred sheepe, and one of them shal goe astray: doth he not leaue ninetie nine in the mountaines, and goeth to seeke that which is straid?

Y Y N

52. 1604

Robert Parsons

Relation of the triall made before King of France

<http://books.google.com/books?id=elBFAAAACAAJ>

I haue intreated my L. Mareshall of Bouillon, who goeth to take his leaue of the K. at his pallace of Boys de Vincens, to present vnto his Maiestie my most humble request ...

Y Y N

53. 1628

Pierre Matthieu, Lucius Aelius Seianus

The powerful favourite, or, The life of Ælius Seianus

<http://books.google.com/books?id=HOpbAAAAQAAJ>

There were not any but listened hereunto and promised to bee ready in all things, hee chose a competent number of them to keepe the aduenues and the Temple of Apollo; this done, hee presents his Letteers to the Senate and told them his charge, and with-drawing himselfe leaues Laco there, and goes to giue order for the other parts of the Towne.

Y Y N

54. 1588

Robert Greene, La Serre (Jean-Puget, M. de)

Greene's Pandosto or Dorastus and Fawnia:

<http://books.google.com/books?id=jea2AAAAIAAJ>

so that she thought every hour a year, till by their departure they might prevent danger, not ceasing still to go every day to her sheep, not so much for the care of her flock, as for the desire she had to see her love and lord, Dorastus, who oftentimes, when opportunity would serve, repaired thither to feed his fancy with the sweet content of Fawnia's presence. And although he never went to visit her but in his shepherd's rags, yet oft his repair made him not only suspected, but known to diuers of their neighbors;

...

Y Y N

55. 1602

Lodowick Lloyd

The strategemens of Jerusalem: With the martiall lawes and militarie discipline, as well, of the Jewes, as the Gentiles

<http://books.google.com/books?id=RYxDAAAACAAJ>

For after Esau & Iacob had diuided their fathers possession, Esau went to dwell in Edumea, and Iacob tooke for his part Canaan, where he dwelt and his childrẽ ...

Y Y N

56. 1589

John Rider

Bibliotheca scholastica: a double dictionarie, penned for all those that would haue within short space the use of the Latin tongue, either to speake, or write

<http://books.google.com/books?id=luIX3kxlbkC>

A servant that goeth to meet his master, and fetcheth him where hee is abroad

Y Y N

57. 1596

Edmund Spenser

The poetical works of Edmund Spenser, Volume 2. Book IV Canto IV.

<http://books.google.com/books?id=SegPAAAAYAAJ>

She left him to his fortunes government, / And backe returned with right heauiue mind / To Scudamour, who she had left behind; / With whom she went to seeke faire Amoret, / Her second care, though in

another kind ...

N? Y N

58. 1597

Claude de Sainliens

The Italian Schoole-maister

<http://books.google.com/books?id=c-A7AAAAcAAJ>

Then the houre of their masking being come, the maskers entred the hall. Certaine of them went to dauncing, & th'others went to talke with such as they desired.

Y Y N

59. 1622

Stephen Denison

An exposition upon the first chapter of the second epistle of Peter

<http://books.google.com/books?id=75oCAAAAQAAJ>

And so here when Christ went to be transfigured, he tooke with him Peter, and Iames, and Iohn.

N Y Y

60. 1629

Longman Green

Calendar of state papers and manuscripts relating, to English affairs, existing in the archives and collections of Venice: and in other libraries of northern Italy, Volume 22

<http://books.google.com/books?id=KzjvAAAAMAAJ>

On the return of the Princes Palatine from Rhenez, I went to pay my respects. I spoke of the necessity of preventing the truce.

N Y N

61. 1649

Antony Ascham

Of the confusions and revolutions of governments: Wherein is examined how farre a man may lawfully conforme to the powers and commands of those who with various successes hold kingdomes divided by civill or forraigne warrs ... : Likewise whether the nature of warre be inconsistant with the precepts of the Christian religion? : Three parts, with several additions

<http://books.google.com/books?id=4VdKAAAAYAAJ>

Likewise of Jothams Trees going to chuse a King, Iudg. 9.8.

? ? N

62. 1604

Robert Parsons; John Foxe

An examen of the calendar or catalogue of protestan saincts, martyrs, and consellers, deuised by Ion Fox, and prefixed before his great volume, of Acts and monuments ... The first six monethes. This tome appertayneth to the third part of a late treatise of three conuersions of England

<http://books.google.com/books?id=DZfNeQSVEhYC>

For that Zwinglianisme was scarce yet beganne. But afterwards going to vew Fox his Acts & Monuments, which seldome do agree in accompt of yeares with his Calendar, I found that this Iohn Castellane was no Englishman, but an Apostata friar ...

63. 1641

?

Speeches and passages of this great and happy Parliament

http://books.google.com/books?id=QNc_AAAAcAAJ

After that, going to take off his doublet, and to make himself ready, he said, I thank God I am no more afraid of death,

64. 1632

J. Morgan

A compleat history of the present state of war in Africa, between the Spaniards and Algerines: giving a full and exact account of Oran and Al-Mursa ; compiled from the best approved Spanish writers ; the author's twenty years knowledge of the country ; and from diverse late conferences with Haj Mahammed, the Algerine envoy and Haj Ali, His Excellency's secretary, now here resident ; with a new map of the Kingdom of Algiers ; and several useful annotations

<http://books.google.com/books?id=6M8TAAAAYAAJ>

and the Count perceiving how little of the Day remained, was in Doubt whether he ought not to delay the Engagement till next Morning. Going to consult the Cardinal, his Eminence was of Opinion, that it was not at all advisable to suffer the Soldiers Ardour to grow cool.

65. 1598

Jan Huygen van Linschoten

Iohn Huighen van Linschoten, His discours of voyages into ye Easte [and] West Indies: deuided into foure bookes

<http://books.google.com/books?id=nRN-HgO3tREC>

yet their strange manner to such as know it not, is verie fearefull, as Larius telleth it happened unto him at his first going to visit them, saying that when he came first into one of their villages, all the Barbarians ranne about him, and saith unto him, Marape derere, Marape derere, that is, what is your name ...

66. 1650

Henry Parker

The true portraiture of the kings of England, by an impartial friend to iustice and truth

<http://books.google.com/books?id=n-dbAAAAQAAJ>

he was handsomely whipt by the Monks, in going to visit Becket's shrine, which was part of his penance

67. 1616

I Jacques, Bishop of Winton

The workes of the most high and mightie Prince Iames, by the grace of God king of Great Britennie, France and Irelande, defender of the faith and c. an humble supplication for tolerance and libertie by James Great Britain, King I

<http://books.google.com/books?id=1pOChW0lvBgC>

But our Cardinall proues Peters superioritie, by Pauls going to visite him. Ineed Paul saith, hee went to Ierusalem to visite Peter, and confere with him; but he should haue added, to kisse his feet.

68. 1625

Tratado

The Spanish pilgrime: or, An admirable discovery of a Romish catholicke

<http://books.google.com/books?id=mS8BAAAAQAAJ>

Moreouer he would haue giuen him 500 thousand Crownes to pay his debts, and to defray the charge of going to take that Gouvernement vpon him

69. 1649

Antony Ascham

Of the confusions and revolutions of governments: Wherein is examined how farre a man may lawfully conforme to the powers and commands of those who with various successes hold kingdomes divided by civill or forraigne warrs ... : Likewise whether the nature of warre be inconsistent with the precepts of the Christian religion? : Three parts, with several additions

<http://books.google.com/books?id=4VdKAAAAYAAJ>

Next to those Divine Sermons which our Saviour made on the mount, that which Saint Luke hath recorded of Saint Paul at Miletum, is one of the solemnest where (like a willing victime going to be sacrificed) he first assembled all the Officers of the Church of Ephesus, assuring them, that they should never more see his face; but that after his departure, wolves should enter their flock, ...

70. 1602

Lodowick Lloyd

A briefe conference of divers lawes: diuided into certaine regiments

<http://books.google.com/books?id=SYxDAAAACAAJ>

Nicanor going to strike a fielde with Iud. Machabæus vppon the Sabboth daye, was willed to hallowe the Sabboth, who said, is there a God mightie in heauen that commands to keepe the Sabboth day, and ...

71. 1582

Fernaõ Lopes de Castanheda

The first booké of the historie of the discouerie and conquest of the East Indias, enterprised by the Portingales, in their daungerous nauigations, in the time of King Don Iohn, the second of that name

<http://books.google.com/books?id=YkoC-kx4TAgC>

And so going to enter he went and touched the point of the Island, and therewith brake his helme,

72. 1641

Giovanni Francesco Biondi, Henry Carey of Monmouth

An History Of The Civill VVarres Of England, Betweene the two Houses of Lancaster and Yorke: The originall whereof is set downe on the life of Richard the second;

<http://books.google.com/books?id=JvtCAAAACAAJ>

Richard was sensible of her death, (as being affectionate enough) but did not for all that alter his resolution of going personally into Ireland: as neither did it divert Lancaster from going to take possession of his Dutchy of Guascony.

73. 1641

William Prynne

The antipathie of the English lordly Prelacie, both to regall monarchy and civill unity: or, an historicall collection of the severall execrable treasons, conspiracies, rebellions, seditions ... of our english, brittish, french, scottish and irish Lordly Prelates against our Kings, Kingdomes, laws, liberties

http://books.google.com/books?id=p9c_AAAAACAAJ

he hath caused divers to be excommunicated and vexed in his Consistory, for going to heare Sermons abroad when they had none at home.

74. 1632

Jean d'Avila

The cure of discomfort, conteyned in the spirituall epistles of Doctour I. de Auila, most renowned preacher of Spaine. Most profitable for all, and particularly for persons in distresse

<http://books.google.com/books?id=FJZGhsQYg3gC>

Epist. 49. A letter of the Author, to one, who formerly had beene a disciple of his, and then being of Society of Iesus, was growen to be, as the point of death. He congratulates his departure hence, and his going to enjoy the fruites of his labour in his Order; and he giues him great hope of the eternall kingdome, by meanes of the bloud of Christ our Lord.

75. 1630

John Taylor

All the works of John Taylor, the water poet

<http://books.google.com/books?id=B7QKAQAAMAAJ>

whilst many a poore Clyent, an vnprouided tenant, or vnfurnished debter, or a fellow going to bee hang'd, they thinke time is all vpon the spurre, and that he runnes at full speed a wild gallop.

76. 1636

?

A Voyage into the Levant

<http://books.google.com/books?id=f1ZzqBTjDVcC>

I first noted this by an Eunuch of the Garrison of Belgrade, I had with money made him to friend, against any necessity of flight, I going to visit him in his house, nigh the River Danubius, found him alone very drunke

77. 1637

Robert Monro

Monro, His expedition with the worthy Scots regiment (called Mac-Keyes-regiment) levied in August 1626

<http://books.google.com/books?id=KMpFAAAAcAAJ>

And therefore it was the saying of Demetrius to Xerxes King of Persia, going to make warre in Greece did ever [illegible]

78. 1639

Henry Ainsworth

Annotations upon the five books of Moses, the book of the Psalmes and the song of songs

<http://books.google.com/books?id=ki1BAAAACAAJ>

going to die] that is, ready or in danger to die: which may be meant, both in respect of his present hunger, which could not (as he profanely thought) be satisfied with the title of his birthright: and of his daily danger to be killed by the wild beasts, in the field where he hunted.

79. 1641

Giovanni Francesco Biondi, Henry Carey of Monmouth

An History Of The Civill VVarres Of England, Betweene the two Houses of Lancaster and Yorke: The originall whereof is set downe on the life of Richard the second;

<http://books.google.com/books?id=JvtCAAAAcAAJ>

And the next morning going to give the good morrow to the Duke of Glocester, who was standing with his backe to the doore ...