

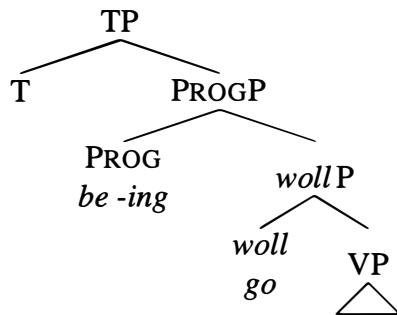
Be Going to as a Case of High Aspect

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1. Introduction

In this paper I propose and defend the claim that English *be going to* (henceforth *bgt*) is composed of a progressive operator and a future modal *woll* (Abusch, 1985), as follows, with *woll* spelled out morphologically as *go*:

(1) *Be going to*



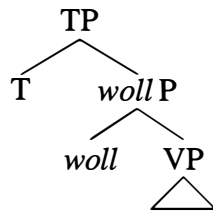
The new idea here is that PROG does not take the bare VP as its argument, as we are used to seeing, but rather the larger *wollP*. I will call aspect in this kind of position “high aspect” – since it is higher than aspect is normally, when it combines semantically with the VP. This requires nothing new in the way of denotations as long as *wollP* has the same type as VP.

We will have lots more to say about the meaning of the structure in (1), by way of arguing that *bgt* in fact has that meaning. But intuitively for now, the partially-decomposed meaning of the part of the structure, with a present tense in T and using a very basic meaning for the progressive operator, would be something like that given in (2c) below. “NOW” is the time of utterance.

- (2) a. $[[\text{PRES}]](i) = 1$ iff $i = \text{NOW}$
b. $[[\text{PROG}]](p)(i) = 1$ iff $\exists j: j$ includes i and $p(j)$
c. $[[\text{PRES PROG woll VP}]](i) = 1$ iff $\exists j: j$ includes i & $[[\text{woll VP}]](j)$ & $j = \text{NOW}$

I will not try to deconstruct *woll* just yet; once we have defended the hypothesis that this is the right meaning, we will be counting on properties of *bgt* to tell us a little more about the meaning of *woll*.

One thing that will allow us to test this hypothesis is that the proposed structure for *bgt* is very similar to the structure proposed for *will* and *would* by Abusch (1985) (where *will* is the present tense version, and *would* the past tense version):

(3) *Will/would*

Thus the only difference between *will/would* and *bgt*, under the hypothesis I would like to pursue, is that *bgt* has a PROG operator that *will* and *would* lack.¹ Therefore, we should be able to find parallels between ordinary progressive sentences and *bgt* sentences that are not shared by simple form sentences (those in which the verb carries nothing but agreement) and *will* sentences; and vice versa.

First, I will argue that the differences between the *bgt* and *will/would* are those that would be expected to arise from the presence/absence of progressive aspect. Second, I argue that *bgt* and *will/would* share two properties that they would be expected to share if they share the same future modal. Thirdly, we will work through some of the formal details and implications of the proposal, and see that it points us toward a particular kind of denotation for *woll*. Next, I discuss how the analysis of *bgt* as a case of high aspect fares with some additional data, having to do with contexts in which the speaker is volunteering to do something. Finally we take a brief look at the syntactic evidence that *bgt* is monoclausal, with a view towards understanding whether high aspect can really be high in the clause, or if it is simply ordinary low aspect in a higher clause.

2. The case for PROG in *bgt*

In this section, we will discuss a number of differences between *bgt* and *will*. I will argue that the differences reflect an aspectual difference: namely, that *bgt* has a progressive operator between T and *woll*, and *will* does not.² One assumption we must make to get the ball rolling is that PROG has the same meaning no matter what it takes as its argument. The methodology of this section is then as follows: we will compare *bgt* sentences with *will* sentences, and if the comparison is parallel to a comparison with progressives and simple forms (V-ing and V), then we will be licensed to conclude that the difference is due to presence/absence of progressivity. The evidence is of necessity somewhat circumstantial, but the hope, as always, is to get a cluster of facts, all of which point in the same direction. Here I will point out three such facts: *bgt* patterns with progressives — and against *will/would* and simple forms of the verb — in availability of generic readings, availability of futurate readings, and ability to be predicated of the present.

2.1. *Generics*

As has been noted (Diesing, 1992; Dowty, 1979), progressives do not easily allow generic readings. For instance, while the simple verb construction in (4a) has a

generic reading, being a claim about the typical kid, (4b) generally has only an existential reading, and claims that some kids are currently eating candy:

- (4) a. Kids eat candy.
b. Kids are eating candy.

This is not to say that generic readings are always impossible with progressives; on the contrary, they are possible in the presence of a “related constituent” in the Carlson (1989) sense:

- (5) a. Kids are always eating candy.
b. Kids are eating candy whenever I see them.
c. Kids are eating candy on my lawn every day at sunset lately.
d. Kids are eating candy more and more these days.

One sketch of an explanation of these facts is that these elements, but not progressives, are able to quantify over situations, in the sense of Kratzer (1989). Simple forms, on the other hand, are somehow able to have quantification over situations on their own. Whatever the analysis, however, the fact is that (4b) apparently does not get a generic reading on its own.

Like progressives, and unlike simple verb forms, *bgt* does not generally have generic readings in the absence of a “related constituent” in the sentence. On the other hand, *will*, which our hypothesis assumes to be the non-progressive counterpart of *bgt*, does license generic readings in those contexts. This is demonstrated in (6), which parallels (4) above: (6a) has a generic reading, about the tendency of kids to eat candy, but (6b) makes an existential claim.

- (6) Generic reading with *will* but not with *bgt*
a. Kids will eat candy.
b. Kids are going to eat candy.

As with progressives, generic readings of *bgt* improve when there is something else in the sentence. The sentence in (7a), for example, may be used to make a prediction that it will always be the case that kids will be candy-eaters.

- (7) a. Kids are always going to eat candy.
b. Kids are going to eat candy whenever I see them.
c. Kids are going to eat candy on my lawn every day at sunset for the next little while.
d. Kids are going to eat candy more and more in the coming weeks.

We have seen (without trying to explain why this should be so) that *bgt* and *will* pattern like progressives and simple forms with respect to the availability of generic readings.

2.2. *Futurate readings*

In this section we examine another difference between *bgt* and *will/would* which is reminiscent of a difference between progressives and simple forms: the availability of futurate readings. First we will look at some background on futurate readings. Then we will detect a futurate reading in *was/were going to (wgt)*, but not in *would*, in two ways (we will use the past tense versions *wgt* and *would* exclusively, because these tests are unfortunately impossible to run in the present tense). This constitutes evidence that there is a progressive in *bgt*. Finally we will discuss what these tests mean for the proposed analysis of *bgt*.

2.2.1. *Background on futurates*

Futurate readings are those that involve a future-oriented event predicate which must be plannable, or otherwise pre-determined,³ as in the classic examples in (8). The hallmark of a futurate is exactly this pattern: grammatical with plannable events, ungrammatical with unplannable events. Of course, (8b) improves considerably if the victory can be viewed as plannable, for instance if the mafia has fixed the game.

- (8) a. The Red Sox are playing the Yankees tomorrow.
 b. # The Red Sox are defeating the Yankees tomorrow.

As has been observed by Lakoff (1971), Vetter (1973), Copley (2001), and many others, futurate readings are available in the *present tense* not only with progressives as above, but also with simple forms:

- (9) a. The Red Sox play the Yankees tomorrow.
 b. # The Red Sox defeat the Yankees tomorrow.

Past tense futurates, however, are by and large available only with progressives:

- (10) a. The Red Sox were playing the Yankees tomorrow.
 b. # The Red Sox were defeating the Yankees tomorrow.
- (11) a. * The Red Sox played the Yankees tomorrow.
 b. * The Red Sox defeated the Yankees tomorrow.

Briefly, then, both progressive and simple forms can have futurate readings in the present tense. However, under a past tense, only progressive constructions get futurate readings. We will shortly use this generalization in our test for whether the difference between *wgt* and *would* is one of progressivity.

2.2.2. *Could bgt have a futurate reading?*

Like *will, is going to* can occur with unplannable events, as in (12b). As we saw just now, this contrasts with futurate readings of progressives, shown again in (13b) for comparison.

(12) *Bgt/will*

- a. Pedro is going to/will pitch tomorrow.
- b. Pedro is going to/will pitch a perfect game tomorrow.

(13) Futurate

- a. Pedro is pitching tomorrow.
- b. * Pedro is pitching a perfect game tomorrow.

This tells us that *bgt*, unlike progressives, does not *always* show the characteristic judgments that diagnose futurate readings. However, from this we cannot conclude that it never does, and therefore has no PROG operator. The lack of a futurate pattern of judgments in present tense *bgt* is compatible with, and in fact expected on, the analysis we are pursuing, in which *bgt* is composed of PROG over the future modal *woll*.

To show this, let's consider $[[\text{PROG VP}]]$. The presence of PROG could either give us a futurate reading, or the ordinary ongoing reading:⁴

- (14) a. The Red Sox are playing the Yankees tomorrow.
- b. The Red Sox are playing the Yankees right now.

These two readings are given in (15a) and (15b). The analogous readings for $[[\text{PROG } \textit{woll} \text{ VP}]]$, our hypothesis for *bgt*, are given in (15c) and (15d) (the latter is essentially what we saw in (2)). I will not attempt to give an explanation of the futurate reading here or later, but see Landman (1992) or Dowty (1979) for treatments.

- (15) a. \exists a plan at time *i* to the effect that $\exists j$ later than *i*: $[[\text{VP}]](j)$
- b. $\exists j$: *j* includes *i* and $[[\text{VP}]](j)$
- c. \exists a plan at time *i* to the effect that $\exists j$ later than *i*: $[[\textit{woll} \text{ VP}]](j)$
- d. $\exists j$: *j* includes *i* and $[[\textit{woll} \text{ VP}]](j)$

Where both (15c) and (15d) are available, it is predicted that the futurate pattern of judgments should not be found. Here's why. The reading in (15c) would not be expected to be acceptable with an unplannable eventuality, and so the futurate pattern (acceptable with plannable eventualities, unacceptable with unplannable ones) would show up if it were the only reading. However, the reading in (15d) would be expected to be acceptable with either a plannable eventuality or an unplannable eventuality. Therefore, even if a *bgt* sentence was ruled out for the reading in (15c) by virtue of having an unplannable eventuality, it would be ruled in on the reading in (15d), and we would not see a futurate pattern of judgments.

This lack of the futurate pattern of judgments is what we see using the present tense version of *bgt* in (12). However, in the past tense we can apparently rule out the second reading, in two environments.

2.2.3. *Futurate readings with wgt: the first environment*

The first environment we will have to do a little setting up for. It is a fact about *would*, due originally to Stowell, that matrix *would* is ungrammatical when the event has not actually happened by the time of utterance. Indeed that is what (16a) entails, as we see from the fact that (16b) is something of a contradiction.

- (16) a. This little boy would grow up to be king.
 b. * This little boy would grow up to be king, but he didn't.

Other examples are in (17).

- (17) a. * Pedro would pitch the following day, but then he caught a cold and didn't.
 b. * Pedro would pitch a perfect game the following day, but then he caught a cold and didn't.

Let's call this the "matrix *would* observation":

- (18) Matrix *would* observation (MWO):
would P → PAST *P*

(Note that there is no corresponding matrix *will* observation such that *will P* → PRES *P*. So we will have to deal with past tense *wgt* if we are going to compare *bgt* with *will/would* here.)

Is there a corresponding observation for *wgt*? At first glance there appears not to be, because (19a), which is of the form *wgt P* & ¬PAST *P*, is good. But on the other hand, (19b) is not good.⁵

- (19) a. Pedro was going to pitch the following day, but then he caught a cold and didn't.
 b. * Pedro was going to pitch a perfect game the following day, but then he caught a cold and didn't.

The difference between the event in (19a) and the event in (19b) is that the former is plannable, while the latter is not, which ought to make us think of futurates.

The most plausible explanation for these facts, I believe, is that the MWO applies to *wgt* on the (15d) reading – i.e., on the (15d) reading, *wgt* is bad when the eventuality doesn't end up happening – but not on the (15c) reading. And in support of this hypothesis, it does appear that in (19a) the only reading is one where there was, at some previous time, a plan that Pedro would pitch the following day.

However, we need to say why the MWO does not rule out the (15c) reading. The answer may have to do with the "M" (which stands for "matrix") in the MWO. The MWO does not hold in embedded contexts, as in (20), where *woll* VP is evaluated on John's belief worlds.

- (20) a. John believed that Mary would go.
 b. Mary went.

If we were to go ahead and give a modal semantics for futurate readings (e.g., Landman (1992)), in the (15c) reading $[\textit{woll VP}]$ would be evaluated on, speaking casually, the planned worlds, not the actual world. In that case, the MWO would not be expected to hold for the (15c) reading. But in the (15d) reading, $[\textit{woll VP}]$ would be evaluated on the actual world, so it would still be expected to run afoul of the MWO. This would explain why the futurate pattern of judgments shows up in (19).⁶

To summarize: this first environment in which we get only a futurate reading of *wgt* phrases is one in which the event described by the predicate doesn't end up happening. This rules out the (15d) reading, by the MWO, and allows the futurate pattern of judgments in the (15c) reading to be detected.

2.2.4. Futurate readings with *wgt*: the second environment

A second environment that only allows futurate readings is one in which there is a clause-initial durative adverbial. Futurates can have a clause-initial durative adverbial that refers to the time of the plan, as in (21). Recall that the eventuality must be plannable in futurates:

- (21) a. For several days, Nomo was pitching against the Yankees (next Thursday).
 b. *For several days, Nomo was pitching a perfect game against the Yankees (next Thursday).

For some reason this is not possible with present tense futurates, as in (22), so again we will be limiting ourselves to *wgt* and *would*.

- (22) *For several days, Nomo is pitching against the Yankees (next Thursday).

It turns out that *wgt*, like past progressives, can appear with durative adverbials only when the eventuality is plannable:

- (23) a. For a long moment, Nomo was going to throw a fast ball.
 b. *For a long moment, Nomo was going to strike out the batter.

The same sentences with *would*, on the other hand, which we have seen do not have futurate readings, also do not support these clause-initial durative adverbials:

- (24) *For a long moment, Nomo would throw a fast ball.

Thus we see that in this environment too, we can rule out the non-futurate reading of *bgt* and demonstrate the futurate pattern of judgments, in which plannable eventualities are good and unplannable eventualities are bad.

I have argued for the analysis of *bgt* given in (1) by showing that *wgt*, but not *would*, has a futurate reading. This is predicted by the analysis because in past contexts, progressives, but not simple forms, have a futurate reading. Therefore the fact that *wgt* has a futurate reading but *would* does not is expected under an analysis where *wgt* has a progressive operator but *would* does not.

2.3. *The present perfective constraint*

So far we have seen that *bgt* and progressives pattern together in their ability to have generic readings and futurate readings. A third similarity, I will argue, is in their ability to take a present time as their temporal argument.

It is a well-known cross-linguistic fact that perfectives are not allowed to have present reference. The English version of this fact is in (25). The progressive can be used to report the current raining eventuality, but the simple form, also sometimes called the perfective, cannot:

- (25) a. Oh look, it's raining.
b. * Oh look, it rains.

One way to think about this is that the perfective says that a proposition holds at a time, and for some reason this time is never allowed to be NOW, the time of utterance.

- (26) a. $[[PF](p)(i) = 1 \text{ iff } p(i) \ \& \ \neg \exists k \neq i: k \text{ includes } i \text{ and } p(k)$

Progressives, on the other hand, are a kind of imperfective, and they say that a proposition holds of an interval which includes the time it takes as an argument, so even when the time is NOW, there is no problem.

Now consider *will* and *bgt*. Under the hypothesis we have been considering, *will* is the perfective member of the pair (assuming that perfectives are bare in English), and *bgt* is the imperfective member, by virtue of having a progressive operator. The question I would like to ask here is whether the present perfective constraint that is responsible for the ungrammaticality of (25b) is also responsible for the ungrammaticality of (27b) (of course 'll is just the cliticized form of *will*).

- (27) a. Oh look, it's going to rain.
b. * Oh look, it'll rain.

The explanation would run as follows. Suppose $[[woll \text{ VP}]$ takes a time and says of it that during that time the VP is predicted to happen at some later time. We will get to a more precise treatment of *woll* later, but this will do for now. Then $[[bgt \text{ VP}]$, being (by hypothesis) $[[PROG \text{ } woll \text{ VP}]$, would say of a time that it is ongoing at that time that the VP is predicted to happen at some later time (on the ongoing reading (15d); we need not consider the futurate reading (15c) here because raining is not plannable). When present tense is added to these, to create respectively *will* VP and *is going to* VP, then the time which is being talked about must be a present time. Whether this present time is the present instant or some longer time (as in generics, e.g.) is up in the air; the examples in (27) are intended to rule out a longer interval by including "oh look," so that the speaker is making the prediction suddenly. In that case, we would expect, given the perfective present constraint, to be able to use *PROG woll* VP as in (27a), but not bare *woll* VP as in (27b).

That said, the data below seem to be left unexplained by that explanation, to the extent that they are better than (27b):

- (28) a. It'll rain next week.
 b. It'll rain in two minutes.
 c. Don't worry, it'll rain.

One way to get around this is to say that in those examples, the speaker is not making a prediction based on the present instant, but rather on a longer interval including the present instant. This makes a certain amount of sense in that a number of observations would be needed to be able to say (28a) with any certainty, and perhaps even (28b). As for (28c), to my ear at least it carries a certain flavor of "speaking from experience," so perhaps that is telling us that again, there is a longer interval involved than the present instant. This might be similar to generic readings of present perfectives, which are presumably allowed because they make a claim about longer interval than the present. In that case the explanation I have given above might be able to rule out (27b) without ruling out any of the examples in (28). However, some work is undoubtedly still needed to flesh out this line of thinking and determine any further predictions.⁷

I have argued that there are a number of parallels between simple forms and progressives on the one hand, and *will/would* and *bgt* on the other. Progressives and *bgt* resist generic readings, have futurate readings, and can be predicated of the present instant. Simple forms and *will/would* have none of these properties. This supports the hypothesis that *bgt* differs from *will/would* in having a progressive operator.

3. The case for *woll* in *bgt*

Up to this point we have been looking at differences between *bgt* and *will/would*. The major *similarity* between *bgt* and *will/would*, of course, is that they both involve future reference. But since it is possible to have future reference in the absence of future tense, it will be important to compare *bgt* and *will* on the one hand with other means of future reference on the other. What I have in mind are modals and futurate readings of progressives, arguably neither of which involves a future tense, but which can involve future reference.

3.1. The Matrix Would Observation

As we saw above, there is reason to believe that both *would* and one of the readings of *wgt* obey the MWO, the observation that in the matrix, *would* P entails that P has happened by the time of utterance. This similarity can plausibly be assumed to be because they share a similar means of referring to the future. For the sake of comparison, note that past modals and futurates do not obey the MWO, because a continuation asserting that the eventuality didn't happen does not result in a contradiction.

- (29) a. Pedro was supposed to pitch against the Yankees, but in the end he didn't.
 b. (At that point) Pedro might have pitched against the Yankees, but in the end he didn't.
 c. (At that point) Pedro was pitching against the Yankees, but in the end he didn't.

So if both *would* and one of the readings of *bgt* obey the MWO, it is not just because they both involve future reference, but must be because they both refer to the future by the same, or at least similar, means.

3.2. *Felicity under predict*

Both *will* and *bgt* share the property of being felicitous under verbs such as *predict*, as Presque (2000) points out. Sentences without these — even those that can have a futurate reading — are not felicitous.

- (30) a. Mary predicts that John will push the button.
 b. Mary predicts that John is going to push the button.
 c. * Mary predicts that John pushes the button.
 d. * Mary predicts that John is pushing the button.
 e. * Mary predicts that John pushed the button.
 f. * Mary predicts that John was pushing the button.

To this list we add modals:

- (31) a. * Mary predicts that John may push/be pushing the button.
 b. * Mary predicts that John is supposed to push/be pushing the button.

This is again evidence that *will* and *bgt* share the same, or at least similar, means of referring to the future. Though it may be mysterious why *predict* is able to distinguish between the future reference of *will* and *bgt* on the one hand and that of futurates and modals, it seems to be able to. Along with the facts about the MWO, this should allow us to go ahead with the hypothesis that the same element, which we are calling *woll*, figures in both *will* and *bgt*.

4. Formal details

We will begin with a number of assumptions: Types are times (*i*) and truth values (*t*). The variables I will use for times are *i*, *j*, and *k*; and for predicates of times (type $\langle i, t \rangle$), I will use the variable *p*. Present and past tense, as well as what are normally called “propositions”, are predicates of times;⁸ aspects and *woll* are operators on times (type $\langle \langle i, t \rangle, \langle i, t \rangle \rangle$). Rules of composition are PM (predicate modification) and FA (functional application), as given in Heim and Kratzer (1998). We will pretend arguments are VP-internal. Times are intervals on a dense linear timeline

(we will not be getting into intensional semantics or branching time, though we will see where such a move is the next step). Notions like “=” and “before” have their intuitive values, and NOW is the time of utterance.

- (32) Tense
- a. Present tense
 $[[\text{PRES}]](i) = 1$ iff $i = \text{NOW}$
 - b. Past tense
 $[[\text{PAST}]](i) = 1$ iff i is before NOW
- (33) Progressive aspect
 $[[\text{PROG}]](p)(i) = 1$ iff $\exists j$: j includes i and $p(j)$

Let’s try the simplest denotation possible for *woll* first, where it is a predicate of times:

- (34) *woll* (version 1 of 3)
 $[[\text{woll}_1]](p)(j) = 1$ iff $\exists k$: j is before k and $p(k)$

In that case, *bgt* would turn out like this:

- (35) *is going to*₁
- a. $[[\text{PRES PROG } \textit{woll} \text{ VP}]](i)$
 $= 1$ iff $i = \text{NOW}$ and $[[\text{PROGwoll}_1 \text{ VP}]](i)$
 - b. $\dots = 1$ iff $i = \text{NOW}$ and $\exists j$: j includes i and $[[\text{woll}_1 \text{ VP}]](j)$
 - c. $\dots = 1$ iff $i = \text{NOW}$ and $\exists j$: j includes i and $\exists k$: j is before k and $[[\text{VP}]](k)$

But compare this denotation with the denotation of a version of *will* that uses *woll*₁ (call it *will*₁).

- (36) $[[\text{will}_1 \text{ VP}]](i) = 1$ iff $i = \text{NOW}$ and $\exists k$: i is before k and $[[\text{VP}]](k)$

Using these denotations, *is going to*₁ and *will*₁ are truth-conditionally equivalent, which is an unwanted result given all the differences we have just outlined. For if an interval i precedes an interval k , there will always be an interval j that includes i and precedes k . And as long as the timeline is dense, it will also always be true that for any interval j that precedes k , there will always be an interval i included in j that also precedes k .

The obvious answer to this problem is to introduce some sort of modality into the denotation of *woll*, such as the following (though for space reasons, we will not get into an explicit modal semantics here).

- (37) *woll*₂ (version 2 of 3)
 $[[\text{woll}_2]](p)(i) = 1$ iff $\exists k$: i is before k and it is predicted at i that $p(k)$

This avoids the truth-conditional equivalence problem, because in a case where $p(k)$ is predicted at an interval i , there will not always be an interval j including i such that $p(k)$ is predicted throughout j . And in fact, this is something like what I alluded to in the earlier discussion of the perfective present constraint.

Still, there is an undesirable consequence of adopting a denotation such as (37): it will not allow us to derive the MWO. Consider, for instance, a situation in which it was predicted at time t that a boy would become king upon reaching the age of 21. But suppose that at age 19 the boy decided to run away and join the circus instead. It would be false to say of time t that that boy would become king at the age of 21. Using *woll*₂ yields the following denotation of *would*:

- (38) $\llbracket \text{PAST } woll_2 \text{ VP} \rrbracket(i) = 1$ iff i is before NOW & $\exists k$: i is before k and it is predicted at i that $p(k)$

However, it is predicted to be a true utterance if we use this denotation, because it would be true that it had been predicted at t that the boy would ascend the throne at 21.

So instead let us use a version of *woll* as follows:

- (39) *woll* (version 3 of 3)
 $\llbracket woll \rrbracket(p)(i) = 1$ iff $\exists k$: i is before k and it is inevitable at j that $p(k)$

As far as it goes, this version will allow us to derive the MWO. It raises a number of other problems, though, such as whether it *was* inevitable at time t that the boy was going to run away and join the circus; was there no other choice available to him from birth? If not, then the truth-conditional equivalence problem arises again. Furthermore, this denotation makes *woll* a kind of stative predicate, and that is not what we want, for two reasons. First, if the idea in section 2.3 is correct, we do not want $\llbracket woll \text{ VP} \rrbracket$ to be stative (or else *will* it could take a present time as its argument without running afoul of the present perfective constraint). Secondly, if $\llbracket woll \text{ VP} \rrbracket$ is stative it is unclear why *woll* P would be the argument of a progressive operator, as proposed for *bgt*, since for the most part progressives do not take statives as arguments (Dowty, 1979; Smith, 1991). However, we will have to leave these questions for a more detailed treatment of the modal semantics of *woll*.

5. Volunteering contexts

I have argued above that *bgt* is composed of PROG and *woll*, as in the tree in (1). Now we will apply this idea to try to explain another fact about the distribution of *bgt*, in contexts of volunteering.

It appears that *bgt* is not used in contexts of volunteering, though *will* is. For example, the speaker of (40a) is offering to change your oil. But (40b) cannot be used for the same purpose.

- (40) A sign seen (and one not seen) on the highway
 a. We'll change your oil in Madera.
 b. * We're going to change your oil in Madera.

Why does (40b) sound so funny? In fact, it sounds a little bossy: "We're going to change your oil in Madera even if you weren't planning to get off the highway at Madera. You are now."

One possibility, of course, is that somehow *will* has “more modality” to it than does *bgt*, contrary to what we have been assuming. But it could also be that somehow the progressive operator in *bgt* gets in the way of having a volunteering reading that would otherwise be available with *woll*. I’d like to briefly consider both possibilities, and show that the progressive story does at least as well as the modal story in explaining this fact.

First, though, we should note that the volunteering context is one in which the eventuality being volunteered by the speaker (in this case, the oil change) is not necessarily going to happen anyway. Let’s call this “the volunteering condition.” For an utterance to count as an act of volunteering, the volunteered eventuality must be contingent on the interlocutor’s desires. Conditionals are useful for modeling contingencies, so let’s suppose that acts of volunteering such as the one in (40a) are really conditionals with a covert antecedent meaning something like *if you like*. The conditional in (40b) is still a little strange:

- (41) a. If you like, we’ll change your oil in Madera.
 b. # If you like, we’re going to change your oil in Madera.

The modal account would go something like this. Suppose *bgt* is just the linear future operator *woll*₁, whereas *will* is modal and says that for all of the closest accessible worlds *w*, there exists a future time *k* such that *p(k)(w)*. Then *bgt* can’t be used in volunteering contexts because it can’t be used to talk about contingencies, but only things which are inevitable. This is fine, but we can also explain the unacceptability of *bgt* in volunteering contexts with the analysis we have been pursuing.

Pragmatic conditionals, as in (42a), famously resist perfection of the conditional, which is the tendency to infer from a conditional $P \rightarrow Q$, $\neg P \rightarrow \neg Q$. In (42a), for instance, perfection is not licensed by the conditional. However, the hearer of (42b) does tend to perfect it. The *bgt* case, in (42c), behaves like the non-perfecting (42a), not like the perfecting (42b).

- (42) a. If you’re thirsty, there’s beer in the fridge. \nrightarrow
 If you’re not thirsty, there is no beer in the fridge.
 b. If you’re thirsty, we’ll go get some beer. \rightarrow
 If you’re not thirsty, we won’t go get some beer.
 c. If you’re thirsty, we’re going to go get some beer. \nrightarrow
 If you’re not thirsty, we are not going to go get some beer.

Perfection of the conditional in the case of (42b) satisfies the volunteering condition that the eventuality not be going to happen anyway. Non-perfection of the conditional in the case of (42b) runs afoul of the volunteering condition.

So why doesn’t (42b) have perfection of the conditional? The conditional in (42a) doesn’t, presumably, because it really means something like (43a) (and in that form, it does perfect, as in (43b)):

- (43) a. If you're thirsty, then it's relevant to you that there's beer in the fridge.
 b. If you're not thirsty, then it's not relevant to you that there's beer in the fridge.

What I would like to argue is that the *bgt* conditional in (42b) can only be interpreted as a pragmatic conditional like (42a). Because of the presence of the progressive, the *bgt* consequent will get either a futurate future reading as in (15c), or an ongoing future reading as in (15d). In either case these are facts about present existing conditions, because either the plan is said to hold at the present time, or $[[woll\ VP]]$ holds at the present time. Something that holds in the present can be a relevant fact. However, I have argued (in section 2.3) that *woll* has trouble referring to the present time. While I don't have a story about how *woll* in conditionals works, it seems not to refer to existing conditions the way that *bgt* does, and therefore would not normally be able to appear in a relevance conditional.

We have seen that the PROG + *woll* analysis can do as well as the modal alternative analysis in explaining the lack of *bgt* in volunteering contexts. The modal analysis, however, has no obvious explanations for the facts in the previous sections, so the progressive analysis is to be preferred overall.

6. Is *bgt* monoclausal?

If we are correct in saying that *bgt* is made up of PROG and *Fut*, then it would be nice to know the position of this PROG operator in the clause, because usually PROG occurs just dominating the VP, and here it seems to be higher. Another, lower progressive can appear on the main verb:

- (44) Casimer is going to be singing at five.

It would be interesting to know whether the higher PROG is in the same clause as the lower PROG, or in a different clause. If it is in the same clause, then "high aspect" is truly high in the clause, which is interesting; if it is in a different clause, it could be ordinary low aspect in a higher clause, which is less interesting. In this section we will investigate some evidence bearing on this question. One hypothesis is that *bgt* is monoclausal; the competing hypothesis is that it is biclausal, perhaps with the following structure:

- (45) Casimer [_{PROGP}is [_{VP(?)} going [_{TP} - to [_{PROGP}be singing]]]]

The evidence against this structure is inconclusive, but suggestive. First we will look at some syntactic properties of *bgt*, and then at how these competing hypotheses fare in light of Cinque (1999).

6.1. *Bgt* is not control

If *bgt* is biclausal, then *a priori*, the subject either raises out of the lower Spec, TP position, or controls a PRO in that position. But here we will see that control could

not be the right analysis, because *bgt* behaves like a raising verb instead of a control verb on a number of classic tests.

For example, both *bgt* and raising predicates such as *be likely to* support idiomatic readings, while control predicates such as *be willing to* do not:

- (46) a. The cat is going to be out of the bag.
 b. The cat is likely to be out of the bag.
 c. *The cat is willing to be out of the bag.

Also, neither *bgt* nor raising predicates allow infinitival topicalization, unlike control predicates:

- (47) a. *To be the best candidate, Mary is going.
 b. *To be the best candidate, Mary is likely.
 c. To be the best candidate, Mary is willing.

Finally, while control predicates permit a cleft of the infinitive, *bgt* and raising predicates do not.

- (48) a. *It is to be the best candidate that Mary is going.
 b. *It is to be the best candidate that Mary is likely.
 c. It is to be the best candidate that Mary is willing.

So if we were to pursue a biclausal analysis of *bgt*, it would have to involve raising rather than control. Of course, these facts are also consistent with a monoclausal analysis.

6.2. Going *and to cannot be separated*

Bgt differs from other raising predicates in that *to* cannot be separated from the predicate (in the case of *bgt*, *going*). Neither parentheticals nor negation, for example, can intervene, in contrast to other raising predicates:

- (49) a. *Mary is going, I believe, to be there.
 b. Mary is likely, I believe, to be there.
- (50) a. *Mary is going not to be there.
 b. Mary is likely not to be there.

Right node raising is also out:⁹

- (51) a. *Mary is going and (is) supposed to be there.
 b. Mary seems (to me) and appears (to John) to be there.

It's not clear what we ought to conclude from these facts, but at the very least, we seem not to be dealing with an ordinary infinitive. While at first blush it seems possible that the *to* cliticizes to *going* purely as a phonological process, and that the existence of the contracted form *gonna* is a reflection of the same process, the latter cannot be true. *Want to* also has a contracted form, as in (52b), but the examples in (53) show that the *to* is in fact separable from *want*.

- (52) a. I'm gonna go to Calabria.
 b. I wanna go to Calabria.
- (53) a. I want, strangely enough, to go to Calabria.
 b. I want not to go to Calabria.
 c. I want and expect to go to Calabria.

So we will have to proceed without an explanation of the inseparability of *going* and *to*. I find it plausible that the inseparability is telling us that what was once a biclausal structure has become a monoclausal one, but this is not the only possibility. However, we might note that there is reason to believe that the *to* in *bgt* is not behaving like an ordinary non-finite tense head. It is also important to recognize that *going* and *to* cannot be separated, so that we do not try to put adverbs between them and draw conclusions from the fact that they cannot appear there.

6.3. Cinque

The project in Cinque (1999) is to determine a universal hierarchy of functional projections. Each functional projection can be detected two ways: by the semantically appropriate adverbial in the specifier, or by the head. Below is a portion of his hierarchy. Right away we can see that there is a conflict between his hierarchy and the story we have been pursuing for *bgt*: there is no progressive higher than T_{future} . Therefore a monoclausal analysis of *bgt* in the spirit of the preceding discussion will not be possible using Cinque's assumptions. We will need to insert a high progressive head.

- (54) ... Mood_{evidential} >> Mod_{epistemic} >> T_{past} >> T_{future} >> Mood_{irrealis} >>
 Mod_{root} >> Asp_{habitual} >> T_{anterior} >> Asp_{perfect} >> Asp_{retrospective} >>
 Asp_{durative} >> Asp_{progressive} >> Asp_{prospective} >> Voice ...

But is it possible to construct a reasonable biclausal analysis, retaining Cinque's assumptions?

Suppose, as I have argued, that *go* is *woll*, i.e., Cinque's T_{future} , and there is no high progressive aspect. Then *bgt* actually has to be *tri* clausal, if we additionally make the entirely normal assumption that *to* in the lowest clause is in the ordinary T slot, i.e. Cinque's T_{past} . The highest clause would have T_{past} and Asp_{progressive}. Then the middle clause would have T_{future} ; it couldn't be in the highest clause because for Cinque, Asp_{progressive} is lower, not higher, than T_{future} . In the lowest clause would be *to* in T_{past} . It could not be in the middle clause, because T_{future} is

supposed to be lower, not higher, than T_{past} . So if it is true, as I have argued, that *go* is *woll*, Cinque's assumptions lead us to a very implausible tricausal analysis. The higher progressive operator that I am arguing for, along with not analyzing *to* as the tense head, would allow us to have a monoclausal analysis instead.

7. Conclusion

In this paper I have pursued the analysis of *bgt* given in (1). To support the idea that there is a real progressive operator in *bgt*, the methodology was to show similarities between *bgt* and progressives on the one hand, and the non-progressive versions, simple forms and *will/would* on the other. I presented similarities between *bgt* and *will/would* to support the idea that they share the same future modal *woll*. A formal treatment showed that *woll* must be at least an operator, and have some modality, though the exact nature of that modality was not forthcoming. Furthermore, it was argued, *woll* must be an eventive predicate. More data, on volunteering contexts, was presented, and the analysis was shown to handle it.

In the last section I presented some evidence that *bgt* is really monoclausal, and therefore that the proposed progressive operator is really higher in the clause than usual. I would like to point out some of the implications of such a fact.

Firstly, the existence of high aspect means that we need to extend Cinque's project to determine which aspects can be high, and how high they can be.

Secondly, it has some implications for the question of whether Reichenbachian temporal points E ("event time"), R ("reference time") and S ("speech time") should be primitives in a theory of aspect. The Reichenbachian view (see Hornstein (1990)) that E-R and R-S relations characterize all tense constructions was extended by Klein (1997) to include perfective and imperfective aspect as reflexes of the E-R relation. Each tense-aspect operator mediates between two of the Reichenbachian points, and the order of the points is determined structurally.

One of the advantages of such a system is that it restricts the number of possible tense-aspect constructions. However, the existence of high aspect in combination with low aspect (e.g., (6)) means that this view, which would exclude such a case, is too restrictive. Either we must invent more Reichenbachian primitives to account for all the temporal variables in such a sentence, or give up on the idea that they are primitives, as has been independently suggested by Stowell (1996). The evidence that there can be more than two tense-aspect elements in a sentence is complemented by evidence that there can be fewer than two, for which see, e.g., Kratzer (1998), Dechaine (1991), and Enç (1996).

Thirdly, do low aspect and high aspect combine with phrases of the same type? I have been assuming that they do, but if, suppose, the (low) progressive is really an operator over events, does that commit us to the belief that *woll* P is a predicate of events? Even more problematically, ability modals in various languages show perfectivity contrasts (Bhatt, 2000); could an ability modal really take events as its arguments? Or times for that matter? One alternative would be to say that there are different imperfectives that have the same core semantics but operate

on different entities (see Iatridou (2000) for a similar proposal for tense). Another solution might be to treat (im)perfectivity as operating over situations, as proposed in e.g. Cipria and Roberts (2001).

The analysis of *bgt* given here thus answers several questions, and raises a number of other interesting ones. While the latter are beyond the scope of this paper, I am going to return to them in future work.

Endnotes

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1. This kind of compositional analysis of *bgt* is not a foregone conclusion; Comrie (1976) and Cinque (1999) treat *bgt* as a “prospective aspect”, and for Fleischman (1983) it is a future tense with “speaker involvement.”

2. The mere fact that there is *be -ing* morphology in *bgt* does not automatically mean that there is a PROG operator; English *-ing* is not always associated with progressive meaning, but also shows up in gerunds and absolutes.

3. I will gloss over the fact that planning is not quite the right notion for futurate, as can be seen from (i):

(i) The sun is rising tomorrow at 5am.

4. It is not necessary that there be actual ambiguity here for the argument to go through, but I will assume that there is.

5. Speakers may find (19b) acceptable on the assumption that Pedro has some control over whether he pitches a perfect game or not. Those speakers may find it easier to exclude the possibility that rain can be controlled or planned; (i) makes the same point as (19b). Note also that (ii) is far more natural than (i).

(i) # It was going to rain yesterday, but then it didn't.

(ii) It looked like it was going to rain yesterday, but then it didn't.

6. One slightly different analysis of these facts (Noam Chomsky, p.c.) would be that *bgt*, instead of being ambiguous between a “furate future” reading as in (15c) and an “ongoing future” reading as in (15d), is ambiguous between a straight futurate reading, as in (15a), and the (15d) ongoing future reading. However, the futurate reading of *bgt* does not always pattern with the futurate reading of regular progressives:

(i) Pedro was always going to leave someday, but he never did.

7. One interesting difference between *will* and simple forms in this regard is *will* sentences can be improved by embedding in some cases where simple forms cannot, as in the following examples:

(i) I think it'll rain.

(ii) *I think it rains.

I have no explanation for this fact.

8. If tenses are anaphora, this means that my “tense” is really a kind of aspect,

but that has been shown to be true in at least some cases in English (Kratzer, 1998).

9. *Be supposed to* shares with *bgt* the syntactic properties under discussion.

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