Incremental Phrase Structure Generation and a Universal Theory of V2

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0.   Introduction

In order to account for the absence of the verb-second (V2) phenomenon in the presence of a complementizer, early work on Dutch and German proposed that the finite verb in V2 clauses moves to the position of the complementizer.[1] More recent work, however, has exposed considerable crosslinguistic variation in the availability of V2 in the presence of complementizers ('subordinate V2') and has given rise to additional analyses of V2. As Höhle 1991 points out, this robs the original V-to-C analysis of any predictive power since, being language-specific, it is stipulative. We conclude that a proper universal theory of V2 must provide adequate, i.e. learnable, parameters. We follow Chomsky 1994:3 in assuming that variation is "essentially morphological in character", or put differently, that parameters should only regulate the properties of heads, since these are directly observable by the learner. Parametrization of the computational system (e.g., the mechanism for Case assignment) is thus excluded.

In this paper, we present a theory in which crosslinguistic variation regarding V2 is stated in a precise manner in terms of properties of heads. We begin by reviewing some past approaches to V2 in Section 1, focusing on data from German and Yiddish. Section 2 introduces our own proposal for these languages, and Section 3 extends it to Kashmiri, Frisian and Mainland Scandinavian. Section 4 summarizes the key points of the paper.

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1.   Background

1.1   Asymmetric vs. symmetric V2

As is well known, German and Dutch clauses without complementizers exhibit the V2 phenomenon, according to which the finite verb must occupy the second position in the clause, whereas subordinate clauses (= clauses with complementizers) do not.

(1)   a.   Auf dem Weg *sieht* der Junge eine Ente. (German)
               on   the   way sees the boy   a   duck
               'On the way, the boy sees a duck.'

       b.   * Auf dem Weg der Junge eine Ente *sieht*.

(2)   a.   * daß der Junge *sieht* auf dem Weg eine Ente
               that the boy   sees on   the   way a   duck
               'that the boy sees a duck on the way'

       b.   daß der Junge auf dem Weg eine Ente *sieht*

According to den Besten 1983 and many others, this correlation between clause type and position of finite verb is due to the finite verb moving into C in V2 clauses; a complementizer blocks such movement. However, other V2 languages (including Icelandic and Yiddish) do not exhibit this asymmetry.

(3)   (az) oyfn   veg *zet*   dos yingl a katshke (Yiddish)
        that on the way sees the boy   a duck
        '(that) on the way, the boy sees a duck'

Since an analysis of V2 that relies on verb movement to C does not extend straightforwardly to this second group of languages, a number of researchers (Thráinsson 1986, Diesing 1990, Santorini 1992) distinguish two types of V2 languages: in asymmetric V2 languages (German and Dutch), the finite verb moves to C, whereas in symmetric ones (Icelandic and Yiddish), it moves to I, with the clause-initial phrase occupying Spec(CP) and Spec(IP), respectively.

1.2   Arguments Against the C/I Parameter

Vikner 1991 objects to this approach on the grounds that assuming a non-uniform landing site for the finite verb obscures important parallels between both types of V2 languages, such as the prohibition against adjunction to V2 clauses. This objection seems to us without force, however, since we see no reason to accept Vikner's implicit assumption that syntactic generalizations must make reference to categories, rather than features. We give more weight to two further arguments of Vikner's. First, in an IP analysis of subordinate V2, morphological subject-verb agreement is not uniformly represented in a Spec-head relation. Second, a C/I parameter still fails to capture the full crosslinguistic range of V2. For in addition to pure asymmetric and symmetric V2 languages, there are languages in which some, but not all subordinate clauses exhibit V2. In Frisian and the Mainland Scandinavian ('MS') languages, for instance, subordinate

clauses optionally exhibit V2 if they are asserted. In Kashmiri, the presence of V2 depends on the complementizer: clauses introduced by *ki* 'that' exhibit V2, whereas ones introduced by other complementizers do not. We return to these facts in Section 3.

1.3   Against CP Recursion

In order to capture the entire range of crosslinguistic variation with regard to V2, Vikner 1991 proposes that V2 languages vary parametrically according to the extent to which they allow CP recursion as in (4): German and Dutch allow none, Frisian and MS allow it in asserted complement clauses, and Icelandic and Yiddish have generalized CP recursion (Vikner does not discuss Kashmiri).[2]

(4) $[_{CP} [_C$ complementizer $] [_{CP}$ topic $[_C$ finite verb $] [_{IP}$ subject ... $]]]$

This analysis has the attractive property of expressing subject-verb agreement in a structurally uniform way, but its reliance on CP recursion is problematic. First, why should C be distinguished in being able to select its own maximal projection? Second and conversely, why is C restricted to selecting CP once; that is, why is CP recursion not truly recursive? In order to resolve these questions, Cardinaletti and Roberts 1991 propose that symmetric V2 requires a head distinct from C which they call Agr1.[3] We adopt Cardinaletti and Roberts's insight that subordinate V2 requires a projection of its own, but depart from their analysis by allowing structural head positions that instantiate more than one syntactic feature—multifunctional heads.

1.4   Evidence for Multifunctional Heads

A telling piece of evidence for multifunctional heads comes from subject gap coordination (SGC), a construction characterized by an apparent subject gap in the second conjunct, as illustrated for German in (5).

(5) Auf dem Weg sieht der Junge eine Ente und zeigt sie dem Vater.
     on the way sees the boy   a   duck and shows her the father
     'On the way, the boy sees a duck and shows it to his father.'

Heycock and Kroch 1993a,b argue that SGC reflects a general licensing principle according to which "the structure projected from syntactic heads is the minimum within which all the licensing relations in which they participate can be satisfied" (= their (12)). This Principle of Minimal Satisfaction rules out an analysis of subject-initial V2 clauses according to which they are structurally parallel to non-subject-initial ones, as in (6).

(6) a. $[_{CP}$ Auf dem Weg$_i$ $[_{C'}$ sieht$_j$ $[_{IP}$ der Junge$_k$ $[_{I'}$ $[_{VP}$ t$_k$ t$_i$ eine Ente t$_j$ $]$ t$'_j$ $]]]]$
     b. $[_{CP}$ Der Junge$_i$ $[_{C'}$ zeigt$_j$ $[_{IP}$ t$'_i$ $[_{I'}$ $[_{VP}$ t$_i$ sie dem Vater t$_j$ $]$ t$'_j$ $]]]]$

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[2]Following the literature, we will refer to clause-initial phrases in V2 clauses as 'topics', although such phrases actually satisfy a number of discourse functions.

[3]Cardinaletti and Roberts 1991 propose further that Agr1 is parametrized to be the landing site for finite verbs or unstressed pronouns. We reject this aspect of their analysis since unstressed pronouns can occur between the finite verb and the subject in V2 clauses in Yiddish.

Since the licensing relations between the intermediate traces in the specifier and the head of IP in (6b), which involve predication, agreement and possibly nominative case assignment, are all recapitulated in the C projection, the Principle of Minimal Satisfaction dictates that the intermediate traces in (6b) delete and the projections of C and I merge, yielding (7).

(7) $[_{C/IP}$ Der Junge$_i$ $[_{C/I'}$ zeigt$_j$ $[_{VP}$ t$_i$ sie dem Vater t$_j$]]]

Given (7), SGC as in (5) is possible because the feature content of the two conjuncts is non-distinct: the first conjunct is an I', and the second, a C/I'. Heycock and Kroch 1993a:7 rule out a further merger of C/I and V on the grounds that theta-role assignment cannot be satisfied in the verb's extended projection. The theta-licensing relation between the traces of the subject and the verb within VP is therefore not recapitulated in a higher projection.

1.5   A Separate Projection for Subordinate V2

Given Heycock and Kroch's approach, examples as in (8) from Icelandic and Yiddish provide additional support for a separate projection for subordinate V2.

(8)   a.   þa∂ á lei∂inni sér drengurinn önd   og sýnir hana födur sínum
            that on the way sees the boy   a duck and shows him father his
            'that on the way, the boy sees a duck and shows it to his father'

       b.   az   oyfn   veg zet   dos yingl a katshke un   veyzt zi   dem tatn
            that on the way sees the boy   a duck   and shows her the   father
            'that on the way, the boy sees a duck and shows it to his father'

If the finite verb moved to I in subordinate V2 clauses, then instances of SGC as in (8) would require collapsing I and V in precisely the way that Heycock and Kroch rule out in principle. Maintaining their approach therefore calls for an additional projection between C and V. However, simply splitting I into AgrS and T will not do. For if AgrS is higher than T (Belletti 1990), we lose the structurally uniform expression of subject-verb agreement in a Spec-head relation with AgrS. On the other hand, following Pollock 1989 in putting T above AgrS, as do Heycock and Kroch 1993b:97 (see also Thráinsson 1994), leaves it unclear why Spec(TP) is reserved for subjects in the asymmetric but not the symmetric V2 languages. These difficulties are solved if the finite verb moves to a separate Top head. Then the projections of Top and I (= AgrS/T) can merge in (8) in the same way as those of C and I in (5).

2.   Multifunctional Heads and V2

Given the independent motivation for multifunctional heads based on SGC, we propose in this section that they also provide an intuitively attractive way of describing symmetric and asymmetric V2. Our analysis, which is based on Rambow 1994 (see especially Chapter 5), shares with the Minimalist framework of Chomsky 1993 the intuition that phrase structure is generated incrementally, not given *a priori*. The section is organized as follows. We begin by laying out our assumptions concerning phrase structure generation. We then present the categorial features that play a role in our analysis of V2

and the parameters and general principles that govern their distribution in the clause. Finally, we show how matrix and subordinate clauses as well as SGC are derived in German and Yiddish.

2.1   Incremental Phrase Structure Generation

We make the following basic assumptions:

1. There is no D-structure. Phrase structure is projected from lexical forms, and derivations proceed incrementally (Chomsky 1993).

2. All verbal projections are labelled VP, and the various extended projections are differentiated by the *categorial features* of their heads (Grimshaw 1991).

3. A single structural head may introduce more than one categorial feature (Platzack 1983, Haider 1988, Rizzi 1990, Brandt et al. 1992, Bayer and Kornfilt 1994, Thiersch 1994).

4. Categorial features are (partially) ordered, in the sense that there are constraints on the order in which they are introduced in a lexical item's extended projection. This order corresponds to the notion of c-selection in Pesetsky 1982.

We would like to emphasize that none of the assumptions we make are new; however, they have never been combined in the manner we suggest here, and multifunctional heads have never been defined in a precise and general manner.

Derivations proceed in a manner very similar to that of the Minimalist framework. When a lexical item X is introduced into a syntactic derivation, it projects to an XP with argument positions (to which theta roles are assigned by some mechanism which need not interest us here). The resulting projection can then be extended incrementally in one of two ways: by head movement or by selection. In the case of head movement, the lexical head moves out of the XP, leaving a trace and creating a new head position. Alternatively, a new head position is created by choosing an independent functional morpheme (e.g., auxiliary, complementizer, determiner) from the lexicon. In either case, the new head is said to *introduce* certain categorial features, and it projects a new X′ projection, taking the old phrase marker as its complement. Depending on the new head's feature content, a new Spec position is projected or not (see below). This process can be iterated as often as needed; thus, a head (lexical or functional) can move several times, leaving several traces. Note that in this system, it is unnecessary (and even impossible) to state a Head Movement Constraint requiring a head to move to the next higher head position (Travis 1984), since such a requirement is built into the incremental process of derivation itself.

2.2   Categorial Features and Principles and Parameters Governing Them

Derivations are constrained by the set of categorial features that the heads in a clause can introduce, together with a partial ordering imposed upon them and a number of parameters and principles. A general **Grounding Principle** requires categorial features to be *grounded* (= independently motivated) by some module of grammar, such

as morphology, semantics or pragmatics. Following (the spirit of) Chomsky 1993, we assume that an independent morphological component generates lexical forms annotated with morphological features that must be checked against syntactic heads with the same features.

Depending on a feature's grounding, the head introducing it licenses a Spec position or not. For example, [+T] is grounded as a semantic tense operator:[4] it takes a proposition and returns an event. Given its unary character, [+T] does not license a Spec position. [+AgrS], on the other hand, which is grounded in agreement morphology, does license a Spec position for a phrase that agrees with the head introducing it. Since Spec positions are now specifically motivated by the grounding of their heads, we impose the principle in (9).

(9)   **Specifier Satisfaction Principle**
      If a feature on a head licenses a Spec position, then that Spec position must be filled.

In the spirit of Iatridou 1990, who argues that the categorial features that heads may introduce in a phrase marker are language-specific, we assume a **Categorial Feature Parameter**, which specifies the categorial features available in a language. The categorial features of interest to us, along with their grounding and Spec-licensing status, are shown in (10).

(10) **Categorial Feature Parameter**
      for Dutch, German, Frisian, Icelandic, Kashmiri, MS and Yiddish:

Feature	Grounding	Spec
T	Tense operator (semantics, morphology)	no
AgrS	Subject-verb agreement (morphology)	yes
M	Pragmatic operator (semantics/pragmatics)	no
Top	Lambda abstraction (semantics/pragmatics)	yes
C	Subordination (lexicon, morphology)	no

We have already discussed the features [+T] and [+AgrS]. In what follows, we combine them as [+I] since they are never introduced separately in the languages we are concerned with.[5] We now briefly discuss the remaining three features: [+C], [+M] and [+Top]. Bhatt and Yoon 1992, Brandt et al. 1992 and Bhatt 1994 note that lexical complementizers in certain languages merge two functions—subordination and expression of mood—that in others (for instance, Japanese and Korean) are realized by separate morphemes. We adopt the intuition of these authors that crosslinguistic variation in the distribution of V2 is associated with parametrization of the feature content introduced by complementizers. We further follow them in taking the feature [+C] to be grounded in clausal subordination and [+M] in illocutionary force. According to Brandt et al. 1992

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[4]We take [+T] to be associated with finiteness, leaving aside non-finite verbs in this paper.

[5]In the same way, it is possible that [+AgrS] in some of our languages is a composite feature combining subject-verb agreement and nominative Case assignment. We leave this issue open here.

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and the references cited therein, mood (= their *Satzmodus*) acts as an interface between the syntactic and the pragmatic modules. Although there is no trivial mapping between syntactic categories and illocutionary acts, we will here take [+M] to be associated with a function from events to illocutionary acts. As unary operators, neither [+C] nor [+M] licenses a Spec position. Our final feature, [+Top] (or a similar feature such as [+Pol(arity)] or [+Foc(us)]), has been proposed several times in recent work on clausal structure (see Culicover 1991 and Grimshaw 1993 for English, Müller and Sternefeld 1993 for German, and Uriagereka 1992 for Romance). We take [+Top] to be grounded in lambda abstraction over the topic and hence to license a Spec position.

The categorial features in (10) are ordered by the **C-Selection Parameter**. While certain orderings may be universal or derivable from the grounding of the categorial features, there remains some parametric variation—for instance, in the ordering of *wh*-words and complementizers. However, the categorial features in the languages of interest to us here all share the ordering in (11) (we take "c-selects for" to be the transitive closure of $>$):

(11)   **C-Selection Parameter**
for Dutch, German, Frisian, Icelandic, Kashmiri, MS and Yiddish:
$C > M > Top > I$

This parameter interacts with the **Category Cumulation Principle**[6] in (12) to exclude many otherwise possible derivations; note that this principle explicitly excludes "recursive" functional projections.

(12)   **Category Cumulation Principle**

a. Features introduced by a head must not be instantiated in its complement.

b. All features instantiated in the complement must be c-selected by the newly introduced features.

We further assume a **Sentential Head Feature Parameter**, which states the features that must be introduced in a derivation of a finite clause. It is possible that this parameter can be reduced to semantico-pragmatic considerations, since we simply require that finite clauses be marked for tense and mood.

(13)   **Sentential Head Feature Parameter**
for Dutch, German, Frisian, Icelandic, Kashmiri, MS and Yiddish:
+M, +T

Finally, the central parameter in our analysis is the **Head Inventory Parameter** (the "Head Feature Parameter" of Rambow 1994:141), which specifies the feature content of the heads in a language. It is this parameter that expresses the syntactic differences among the four types of V2 languages of concern here. We present the language-specific

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[6]A version of this principle was called the Head Feature Principle in Rambow 1994:141; we have renamed it to avoid confusion with the conceptually unrelated HPSG principle of the same name.

values of this parameter in the form of a table. The first column ("what") is presented purely for expository convenience and has no status in the theory. (The characterization of the first column in fact follows from the way in which morphological features are checked and the morphological properties of the language.) The value of the Head Inventory Parameter for German is given in (14).[7]

(14)   **Head Inventory Parameter** for German

	What	Features Introduced	Directionality
1	Verb (clause-final)	+I	head-final
2	Verb (V2, subject-initial)	+M, +Top, +I	head-initial
3	Verb (V2, non-subject-initial)	+M, +Top	head-initial
4	Complementizer	+C, +M	head-initial

2.3   Deriving Asymmetric vs. Symmetric V2

As is evident from (14), German has four heads in the extended verbal projection. Given the Grounding Principle, only lexical complementizers can bear the feature [+C]. As a result, a [+C,+M] head must be realized by a complementizer and conversely, a complementizer can only be realized by a [+C,+M] head.[8] The other three heads can, and in fact must, be occupied by finite verbs. A German subordinate clause is derived as follows: the finite verb (with morphological features [+T,+AgrS]) moves out of the VP (where it assigns theta-roles) and creates a head of type 1 which takes the VP as its complement. In that head position, the verb's morphological features are checked against the head's [+I] feature. The head's [+AgrS] feature requires a Spec position with which to agree, and hence a Spec position is generated for the subject to raise into. Then, a complementizer creates a head of type 4, which introduces [+C,+M] and checks the morphological [+C] feature on the complementizer. This new head takes the IP as its complement, but creates no Spec position. The resulting structure satisfies the C-Selection Parameter and the Sentential Head Feature Parameter. In the case of a topic-initial V2 clause, the derivation starts as with a subordinate clause: the verbal head moves out of the VP and creates a [+I] head (type 1), which requires a Spec position for the subject. It then moves on to create a [+M,+Top] head (type 3), which requires a Spec position for the topic. In the case of a subject-initial V2 clause, verb movement out of the VP creates a head-initial [+M,+Top,+I] head (type 2). Both [+Top] and [+AgrS] require a Spec position, which must be filled by the subject in order to satisfy the requirements of [+AgrS]. In either case, the resulting V2 clause again satisfies the C-Selection Parameter and the Sentential Head Feature Parameter. V2 under a complementizer is excluded in German by the Category Cumulation Principle, since either of the V2 heads on the one hand and the complementizer on the other hand introduce [+M]. Verb-final clauses without a complementizer are excluded by the Sentential Head Feature Parameter, since they would lack [+M].

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[7]It is possible that directionality is associated with categorial features rather than heads, and that the directionality of multifunctional heads is determined by the highest feature on the c-selection hierarchy.

[8]Thus, our constraint on feature checking can be seen as a generalization of Müller and Sternefeld's Uniqueness of Designated Head principle (1993:488, (58)).

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The structures for the German clause types just discussed are summarized in (15). Superscript feature structures show the features introduced by a head; for expository convenience, we show only the traces of head movement.

(15) a. Subordinate clause:
          [$_{C/MP}$ daß$^{[+C,+M]}$ [$_{IP}$ der Junge [$_{I'}$ [$_{VP}$ eine Ente t$_i$] sieht$^{[+I]}$$_i$]]]]

      b. Matrix clause, non-subject-initial:
          [$_{M/TopP}$ Auf dem Weg [$_{M/Top'}$ sieht$^{[+M,+Top]}$ [$_{IP}$ der Junge
          [$_{I'}$ [$_{VP}$ eine Ente t$_i$] t$^{[+I]}$$_i$]]]]

      c. Matrix clause, subject-initial:
          [$_{M/Top/IP}$ Der Junge [$_{M/Top/I'}$ sieht$^{[+M,+Top,+I]}$$_i$ [$_{VP}$ eine Ente t$_i$]]]

(16) shows the value of the Head Inventory Parameter for Yiddish.

(16) **Head Inventory Parameter** for Yiddish

	What	Features Introduced	Directionality
1	Verb	+I	head-initial
2	verb (V2, subject-initial)	+M, +Top, +I	head-initial
3	verb (V2, non-subject-initial)	+M, +Top	head-initial
4	Complementizer	+C	head-initial

Yiddish heads differ from their German counterparts in two respects: first, the non-V2 finite verbal head is head-initial and second, complementizers are pure subordinators rather than merged indicators of subordination and illocutionary force. Yiddish matrix V2 clauses are derived exactly as their German counterparts. However, in the case of Yiddish subordinate clauses, it is not possible for the verb to create a [+I] head without raising further, since there is no non-verbal head to introduce [+M], as required by the Sentential Head Feature Parameter. Subordinate clauses are therefore derived just like matrix clauses except for the addition of a complementizer. The resulting clause types are shown in (17).

(17) a. Matrix clause, non-subject-initial:
          [$_{M/TopP}$ Oyfn veg [$_{M/Top'}$ zet$^{[+M,+Top]}$$_i$ [$_{IP}$ dos yingl
          [$_{I'}$ t$^{[+I]}$$_i$ [$_{VP}$ t$_i$ a katshke]]]]]

      b. Matrix clause, subject-initial:
          [$_{M/Top/IP}$ Dos yingl [$_{M/Top/I'}$ zet$^{[+M,+Top,+I]}$$_i$ [$_{VP}$ t$_i$ oyfn veg a katshke]]]

      c. Subordinate clause, non-subject-initial:
          [$_{CP}$ az$^{[+C]}$ [$_{M/TopP}$ oyfn veg [$_{M/Top'}$ zet$^{[+M,+Top]}$$_i$ [$_{IP}$ dos yingl
          [$_{I'}$ t$^{[+I]}$$_i$ [$_{VP}$ t$_i$ a katshke]]]]]

      d. Subordinate clause, subject-initial:
          [$_{CP}$ az$^{[+C]}$[$_{M/Top/IP}$ dos yingl [$_{M/Top/I'}$ zet$^{[+M,+Top,+I]}$$_i$
          [$_{VP}$ t$_i$ oyfn veg a katshke]]]

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2.4   Further Consequences

To round off our presentation of the German and Yiddish facts, we briefly summarize two further consequences of our analysis. First, the availability of multifunctional heads allows us to analyze SGC in both languages in a parallel way: SGC involves coordinating an I′ projection with a Top/I′ projection, both of which may include other features as well.

(18)   a.   German:
            [$_{M/TopP}$ Auf dem Weg sieht [$_{IP}$ der Junge [$_{I'}$ eine Ente] und
                                              [$_{M/Top/I'}$ zeigt sie dem Vater]]]

       b.   Yiddish:
            [$_{M/TopP}$ Oyfn veg zet [$_{IP}$ dos yingl [$_{I'}$ a katshke] un
                                          [$_{M/Top/I'}$ veyzt zi dem tatn]]]

Second, the availability of multifunctional heads gives us a way of resolving a long-standing disagreement concerning the V2 phenomenon: namely, the disagreement between the view that subject-initial and non-subject-initial V2 clauses are structurally parallel and the alternative view (Travis 1984, Zwart 1993) that subject-initial V2 clauses have one level of structure less than their non-subject-initial counterparts. For us, the two clause types differ in that the head that introduces [+Top] selects a [+I] complement in non-subject-initial V2 clauses, but simultaneously introduces [+I] in subject-initial V2 clauses. Despite the topological distinction between the resulting phrase markers, however, their root nodes have the same feature content. The disagreement between the two opposing viewpoints can thus be seen to arise because they refer to distinct properties of the phrase marker (Thiersch 1994 makes the same point).

3.   V2 and the Lexicon

In this section, we extend the approach proposed above for pure asymmetric and symmetric V2 languages to the more complex cases of Kashmiri on the one hand and Frisian and MS on the other. As will become evident, it is the lexically idiosyncratic feature content of a clause's formatives, not their syntactic category as generally understood, that determines whether V2 is available in a particular clause.

3.1   Kashmiri

We begin by reviewing the relevant Kashmiri facts from Bhatt 1994, Chapter 4. Like all V2 languages, Kashmiri requires V2 in matrix clauses. In addition, V2 is obligatory in subordinate clauses introduced by the complementizer *ki* 'that', regardless of the matrix verb. This is shown in (19) (cf. Bhatt's (30)) for a matrix bridge verb and in (20) (cf. his (32b)) for an inherently negative matrix verb.

(19)   a.   me buuz ki   raath   *vuch* rameshan shiila
            I   heard that yesterday saw Ramesh   Shiela
            'I heard that yesterday, Ramesh saw Shiela.'

       b.   * me buuz ki rameshan raath shiila *vuch*

(20) a. temis chu shakh ki   pagah   *hyak-na* ba subhaayi vathith
          him   is   doubt that tomorrow able-neg I   early   rise
          'He doubts that tomorrow, I will be able to wake up early.'

  b. * temis chu shakh ki pagah ba subhaayi vathith *hyak-na*

However, in other types of subordinate clauses, such as adjunct or relative clauses, V2 is ruled out, as shown in (21) (cf. Bhatt's (63c)).

(21) a. yodivay su Daakas khat *traavyi*
          if   he mail   letter put-fut
          'if he sends the letter in the mail'

  b. * yodivay su *traavyi* Daakas khat

Thus, Kashmiri patterns with Yiddish in *ki*-clauses, but with German in subordinate clauses introduced by other complementizers.

The asymmetry in the availability of subordinate V2 in Kashmiri leads Bhatt to suggest that different complementizers in the same language can differ as to whether they are pure subordinators or also mark mood. However, working in the framework of Government-and-Binding (GB) theory rather than Minimalism, Bhatt has no derivational system to allow for the explicit representation of multifunctional heads and therefore cannot represent the fact that certain complementizers carry mood marking. Instead, he proposes that mood-marking complementizers (like the ones that introduce Kashmiri relative and adverbial clauses, or German complementizers) are of category C and head their own projection, whereas pure subordinating complementizers (like Kashmiri *ki* 'that' and Yiddish complementizers) have no lexical category (or projection) of their own, but instead adjoin to an MP headed by the fronted verb. This analysis has a number of drawbacks. First, complementizers are not captured as a uniform crosslinguistic category. Further, adjoining a complementizer to MP violates the Like-Attracts-Like Constraint of Baltin 1982 and in addition raises questions parallel to those raised by CP recursion: why should adjunction to MP be possible, but not to CP in German? And why can't this adjunction recurse indefinitely? Finally, it remains unclear why an overt element in Spec(CP) in (standard) German may precede a fronted verb, but not a complementizer.

These difficulties disappear when Bhatt's analysis is transposed to our framework. Reinterpreting his analysis, we assume that *ki* never, but other complementizers always, introduce the mood feature [+M]. Since the head hosting V2 also introduces [+M], the pattern of data he observes follows from the Category Cumulation Principle.

(22) **Head Inventory Parameter** for Kashmiri

	What	Features Introduced	Directionality
1	Verb (clause-final)	+I	head-final
2	Verb (V2, subject-initial)	+M, +Top, +I	head-initial
3	verb (V2, non-subject-initial)	+M, +Top	head-initial
4	*ki*	+C	head-initial
5	Other complementizers	+C, +M	head-initial

Ki shares its feature content with all Yiddish complementizers, whereas all other complementizers share their feature content with all German complementizers. The verbal heads of all three languages are identical (except for the [+I] head's directionality, which is head-final in Kashmiri and German, but not in Yiddish). Therefore, matrix V2 clauses are derived like their German and Yiddish counterparts, *ki* clauses like subordinate clauses in Yiddish, and other subordinate clauses like subordinate clauses in German.

3.2   Frisian and Mainland Scandinavian

Finally, we turn to Frisian and MS. As we noted in Section 1.2, these languages optionally exhibit V2 in subordinate clauses that are asserted, but V2 is ruled out in subject or adjunct clauses or the complements of verbs that are negated, inherently negative (like 'doubt') or governed by modals (de Haan and Weerman 1986, Holmberg 1986, Reinholtz 1993, Vikner 1991). This is illustrated in (23) (from Iatridou and Kroch 1992, (13) and (16)); *er* 'he' is the clitic form of *hy*.

> (23)   a.   Pyt sei   / betwivelet dat hy my sjoen *hie*. (Frisian)
>   said   doubts   that he me seen had
>   'Pyt said/doubts that he had seen me.'
>
>   b.   Pyt sei / *betwivelet dat hy *hie* my sjoen.
>
>   c.   Pyt sei / *betwivelet dat my *hie* er sjoen.

Subordinate V2 in these languages is standardly given a CP recursion structure as in (4), but such an analysis is ruled out for us, since the Category Cumulation Principle prohibits the same feature—in this case, [+C]—from being introduced twice in a single extended projection. Instead, we are led to conclude that the complementizer 'that' in Frisian and MS instantiates two different feature combinations: on the one hand, it can be a pure subordinator, introducing only [+C], on a par with Kashmiri *ki*, but it can also introduce [+C,+M], like German complementizers. Independent evidence for two homophonous, but featurally distinct complementizers in a single language comes from English 'that', which generally does not license negative polarity items, but is capable of doing so when selected by inherently negative lexical items such as 'doubt' (Laka 1990). What remains to be explained is the restriction of V2 to the complements of bridge matrix verbs. Iatridou and Kroch 1992 (see also Authier 1992) assume that the complementizer that is compatible with matrix bridge verbs is semantically empty and deletes at LF, thus allowing the matrix verb to license V2 in the lower CP by selection. Adopting the insight underlying their approach, we can identify their semantically empty complementizers with our [+C] complementizers (= Bhatt's pure subordinators): in contrast to [+C,+M] complementizers, they contribute only morphological features, but neither semantic nor pragmatic ones. We assume that a semantically deficient complementizer can only unify with assertive mood marking on an MP complement, or put differently, can only take asserted complements. Since a derivation involving a pure [+C] complementizer can only make assertive mood visible to the matrix verb, it can only be used as a complement of a bridge verb. We now give the Head Inventory Parameter for Frisian and MS in (24).

(24)   **Head Inventory Parameter** for Frisian and MS

	What	Features Introduced	Directionality
1	Verb (non-V2)	+I	head-final (Frisian)
		+I	head-initial (MS)
2	Verb (V2, subject-initial)	+M, +Top, +I	head-initial
3	Verb (V2, non-subject-initial)	+M, +Top	head-initial
4	'that'	+C	head-initial
5	'that'	+C, +M	head-initial
6	Other complementizers	+C, +M	head-initial

Since matrix V2 clauses are derived as in the languages already discussed (except for directionality), we give only the derivations for subordinate clauses, illustrating them for Frisian.

(25)   a. Non-V2 subordinate clause:

Pyt sei / betwivelet $[_{\text{C/MP}}$ dat$^{[+C,+M]}$ $[_{\text{IP}}$ hy $[_{\text{I}'}$ $[_{\text{VP}}$ my sjoen t_i] hie$^{[+I]}_i$]]]

b. V2 subordinate clause, non-subject-initial:

Pyt sei / *betwivelet $[_{\text{CP}}$ dat$^{[+C]}$ $[_{\text{M/TopP}}$ my $[_{\text{M/Top}'}$ hie$^{[+M,+Top]}_i$

$[_{\text{IP}}$ er $[_{\text{VP}}$ sjoen t_i] $t^{[+I]}_i$]]]]

In (25), we assume that the auxiliary is generated as a [+I] head, licensing the subject in Spec(IP). In (25a), the auxiliary moves no further; we then add a [+C,+M] complementizer, which contributes the required mood marking, but excludes V2. In (25b), on the other hand, the verb moves on to create a [+M,+Top] head, licensing a topic. We are then restricted to adding a [+C] complementizer. Since the resulting CP is compatible only with bridge verbs, it is ruled out as a complement of *betwivelet*.

4.   Conclusion

In this paper, we have presented a universal theory of V2 based on a Minimalist conception of derivation and on the notion of multifunctional heads. All crosslinguistic variation is expressed as a parametrization of the feature content (and directionality) of heads. All other forms of crosslinguistic parametrization are excluded: for example, nominative Case assignment occurs uniformly under Spec-head agreement.

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