

# The achievements of Generative Syntax: a time chart and some reflections\*

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Received: April 10, 2018

Accepted: September 23, 2019

## Abstract

In May 2015, a group of eminent linguists met in Athens to debate the road ahead for generative grammar. There was a lot of discussion, and the linguists expressed the intention to draw a list of achievements of generative grammar, for the benefit of other linguists and of the field in general. The list has been sketched, and it is rather interesting, as it presents a general picture of the results that is very 'past-heavy'. In this paper I reproduce the list and discuss the reasons why it looks the way it does.

**Keywords:** generative grammar; syntax; linguistics; results

**Resum.** *Els assoliments de la sintaxi generativa: una gràfica temporal*

El maig de 2015, un grup d'eminents lingüistes es van reunir a Atenes per debatre el camí que cal seguir per a la gramàtica generativa. Hi va haver molta discussió i els lingüistes van manifestar la intenció de confeccionar una llista d'èxits de la gramàtica generativa en benefici d'altres lingüistes i de l'àmbit en general. La llista ha estat esbossada i és força interessant, ja que presenta una imatge general dels resultats molt «passada». En aquest treball reproduïm la llista i comentem els motius pels quals es veu d'aquesta manera.

**Paraules clau:** gramàtica generativa; sintaxi; lingüística; resultats

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\* The author acknowledges funding support from the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation program (Grant Agreement No. 681959\_Microcontact).

## 1. Introduction

In May 2015, a group of eminent linguists met in Athens to debate the road ahead for generative grammar.<sup>1</sup> There was a lot of discussion, and the assembled expressed the intention to draw a list of achievements of generative grammar, for the benefit of other linguists and of the field in general. This list, to the best of my knowledge, has not been published yet. However, Peter Svenonius did publish a tentative list on his blog after the conference. The list was edited and compiled by Mark Baker, Rose-Marie Déchaine, Amy Rose Deal, Winfried Lechner, Julie Legate, Ian Roberts, Ivy Sichel, and Peter Svenonius himself. A group of people is now working on an encyclopedia based on the list.<sup>2</sup>

I decided to carry out an exercise: I put a (tentative) date next to every entry on the list, just to map these important results on a time chart. Many of these are shared results, so I tried to select the paper/dissertation in which these ideas were first formulated, not necessarily with the name we use for them today. I then put the list on Lingbuzz and Facebook, and had an overwhelming response from the community,<sup>3</sup> such that this time chart has now become a collective exercise. Since this draft has received much more attention than I had expected, let me add some disclaimers, which I had initially overlooked and were only added to the reviewed version.

First, as it will be obvious to whoever reads this, this paper is not scientific at all. It can be seen as an attempt to reconstruct some of the key stages of generative syntax, followed by some very personal reflections on the status of the discipline. Again, this paper should not be taken as the truth, nor as a piece of scientific research. Given the fact that the paper received a lot more attention than I had foreseen, some interesting points were raised by many scholars during these months. Because of the nature of what I wrote, the three reviews I received looked more like follow-up discussion than reviews. I will try and include the reviewers' viewpoint and rebuttals as much as possible, as I think this could really get the discussion going.

Then, as Svenonius points out,<sup>4</sup> the original list concerns mid-level-coverage results in generative grammar (or rather: syntax) for which there is a broad consensus. According to Gillian Ramchand's blog,<sup>5</sup> "'mid level generalizations' [...] refer to the concrete results of bread and butter generative syntax (whether GB, LFG

1. Unfortunately, the conference website no longer works. The conference was called *Generative Syntax in the Twenty-First Century: The Road Ahead*.

2. <<https://blog.uit.no/psv000/2016/08/30/significant-mid-level-results-of-generative-linguistics/>>.

3. I wish to thank Avery Andrews, Tista Bagchi, Theresa Biberauer, Jonathan Bobaljik, Hagit Borer, Stanley Dubinsky, Dan Everett, Berit Gehrke, Alessandra Giorgi, Vera Gribova, Heidi Harley, Martin Haspelmath, Monica Irimia, Pauline Jacobson, Dalina Kallulli, Alec Marantz, Jason Merchant, Gereon Müller, Francisco Ordoñez, Dennis Ott, Diego Pescarini, David Pesetsky, Omer Preminger, Craig Sailor, Peter Svenonius, Tonjes Veenstra, and Xavier Villalba Nicolas, and three anonymous reviewers (I hope I'm not forgetting anyone) for their feedback. I hope I'm reproducing their suggestions correctly. All mistakes you'll find remain entirely mine.

4. You can find part of the conversation here: <<https://www.facebook.com/robertadal/posts/10102223520838580>>.

5. <<http://generativelinguist.blogspot.nl/2015/05/athens-day-1.html>>.

or HPSG) which would not have been discovered without the explicit goals and methodologies of generative grammar (MLGs)". The list, as one reviewer points out, is subjective. Had other linguists been invited to the meeting, the list would probably look quite different. Furthermore, the methodology according to which these results were selected is not obvious.

The list will look very unbalanced towards the early days of generative grammar. In the rest of this paper, I will discuss the possible reasons why.

One thing that was very interesting for me is that I got many of these dates wrong when I drafted the chart for the first time. Now, of course, this might be entirely due to my own ignorance, and to some extent it certainly is. I grew up in the Minimalist era, and had very little exposure to GB and the early years of generative grammar. Because of this, when I started looking for dates I proceeded as I usually do when I start working on a new project: Google, handbooks, introductory chapters, introductory syntax books, and encyclopedia articles of all sorts. Then, I started reading (not in great detail, admittedly, as this was just for fun in the beginning, and I had limited time) some more specialized articles. I tried to track down the first time something was observed, an idea was proposed, and selected as the locus of "first formulation" those references on which everyone seemed to agree.<sup>6</sup>

Despite my efforts, I made a number of mistakes. I put the draft online as I was sure that many of these "standard references" were wrong, and there had been a lot of reappropriation:<sup>7</sup> very often the people/papers who are cited as "the standard reference" or "the first to observe" are not the ones who actually first discovered/observed/reported something. Some years ago, I taught a course on agreement which I called *Die Ewige Wiederkehr des Gleichen* ('The eternal recurrence of the same'), where I tried to show that most of what we think we are discovering or inventing today had already been discovered or observed, in different terms of course, in the '60s. I've had very much the same impression when putting together this timeline.

Many people also had interesting suggestions for additions to the list, so I will include those after the original list. Finally, as many observed, not all of these results can be attributed to generative grammar. We will assume for the time being that they can be, as this is not directly relevant for the exercise I wish to do, but we should be aware of this. I have not modified the list, but I have copied it entirely from Peter Svenonius's blog, including the explanations, as I think they make things a bit clearer. I also added the references.

The aim of this paper is to reflect on the actual status of generative grammar, on its achievements, and on the shortcomings that seem to emerge from this list. Again, this is more of an opinion paper than a scientific one, and it should be taken as such. Science is not really arguable, but opinions are. This paper was presented at a conference held in Barcelona entitled *Generative Syntax 2017. Questions,*

6. Admittedly, this does not make too much sense, because results are always due to more than one person, but I did it, so here it is.

7. A term due to Pauline Jacobson, who sent me lots of interesting feedback, and to whom I wish to give special thanks.

*crossroads, and challenges.* In the spirit of the conference, I tried to reflect on these issues, and this paper is just that: an attempt at reflection.

## 2. “Results” in generative grammar

It often happens, during general conferences or in linguistic venues, that generative grammarians are asked what results generative grammar has achieved, what discoveries it has brought to light, and what contribution it has given made to linguistic debate. The follow-up question is almost always: what have you discovered in the last 20 years? The choice of this time span is not random, but refers to the *Minimalist Program* period, which started more or less around 1993-1995, i.e. around 20 years ago.

The general feeling is that generative grammar, or syntax to be more precise, has not moved ahead too much during the minimalist period. While the charts that you will see seem to point in that direction, this is in fact not true. The field has evolved a great deal, it has expanded. Many new languages have been studied and analyzed with generative tools. New generalizations have been drawn up, and new theoretical questions have been asked. This, I feel, is the normal way for a field to go forward.

The way generalizations were expressed in the *Government and Binding* (GB henceforth) era, starting with Chomsky’s 1981 Pisa lectures, was radically different from the way they are expressed now. Learnability was already in the picture, and there was a consistent strand of generative L1 acquisition and modeling work, but it had rather limited success. The most successful part of research during GB was on grammatical (parameterized) principles, which were crucial for understanding, for instance, learnability. The research pitch on learnability is much more prominent in the Minimalist program. What has stayed the same is the understanding that languages do not vary indefinitely, and that constraints that are discovered about one language could be used to describe a different language.

This, I think, is the key difference between generative grammar and other linguistic enterprises, such as typology: while typologists assume that, say, the existence of *wh-* movement in English cannot tell us anything about Chinese, generativists assume that this isn’t the case. The common core has moved from principles to features, from structural constraints to the tools we use to build grammar. This evolution should not confuse us: we should not use old parameters to measure new discoveries.

With this disclaimer in mind, let us move on to examine the original list created by the linguists in Athens.

### 2.1. Mid-level coverage results in generative grammar

Mid-coverage results are generalizations, observations that would not have been made without the tools and approaches of generative grammar. These results are just an indication; they simply reflect a discussion, and have not been officially approved by anyone. I have tried to attribute a date to them, the date on which they

were first formulated. I will list the results as they are given in Peter Svenonius's blog entry, with the explanations that he provides. The dates, however, are the result of my own research, so any errors in this regard are down to me. According to the list, mid-coverage results of generative grammar include the following:

1. *Unaccusativity* [There are two classes of monovalent verbs such that the argument in the unaccusative class is predicate-internal, while the argument in the unergative class is predicate-external (in derivational terms, the unaccusative argument originates predicate-internally)]: Hall (1965).
2. *The Agent asymmetry*: [NPs bearing Agent roles are higher than NPs bearing other roles in the unmarked structure of the clause]: Keenan & Comrie (1972).
3. *Passive valence reduction*: [Agents are the easiest arguments to suppress in valency reduction]: Keenan (1975).

*X-bar theory, categories, and headedness*

1. *Extended projections* [Clauses and nominals consist of a (respectively) verbal/nominal head, dominated by zero or more members of an ordered sequence of functional elements]: Grimshaw (1991).
2. *Cinque hierarchy* [There are semantically defined classes of TAM functors that appear in the same hierarchical order in all languages in which they exist overtly]: Cinque (1999).
3. *Cinque hierarchy for adverbs* [There are semantically defined classes of adverbs that appear in the same hierarchical order in all languages in which they exist overtly (related to or identical to the TAM hierarchy)]: Cinque (1999).
4. *Morphology Mirrors Syntax* [The hierarchy of projections as reflected in free words is the same one that is reflected in morphological structure when morphemes express the same notions as the free words]: Chomsky (1957) / Muysken (1979, 1981).
5. *CP-DP parallelism* [There are substantive parallels in structure between noun phrases and clauses, most obviously in the case of nominalizations but also detectable in other kinds of nominals (e.g. similarities between subjects and possessors, subject to cross-linguistic variation)]: Jackendoff (1977).
6. *The Final-over-Final constraint*<sup>8</sup> [It is relatively difficult to embed head-final projections in head-initial ones, compared to the opposite (132 but not \*231, where 1 takes 2 as a complement and 2 takes 3)]: Biberauer, Holmberg & Roberts (2007).
7. *Cinque's version of Greenberg's U20* [Only one unmarked order is found pre-nominally for Dem, Num, and Adj, namely Dem > Num > Adj > N; ordering possibilities increase as N is further to the left in the sequence. The facts suggest (i) a universal hierarchy Dem > Num > Adj > N, where these categories exist, (ii) the possibility of leftward but not rightward movement of projections of N to derive some other orders, and (iii) the absence of such movement of adnom-

8. Now called Final-over-Final Condition. I reproduce the list as it is originally formulated by Svenonius.

inal modifiers alone (e.g. no information-neutral movement of Adj across Num and/or Dem unless it is in a projection containing N) (May generalize to other categories)]; Cinque (1996).

8. *Functional Material Doesn't Incorporate* [Higher functional structure such as determiners and complementizers doesn't incorporate into superordinate lexical heads]; Li (1990).
9. *SOV scrambling* [All SOV languages allow a degree of word order freedom (scrambling); VO languages may not]; Grewendorf & Sternefeld (1990)?

#### *Movement in general (not restricted to A-bar or A)*

1. *Coordinate Structure Constraint* [Extraction from a Coordinate Structure is not possible unless it is by Across-the-Board movement (the phenomenon of pseudocoordination has to be distinguished; e.g. "What did you go (to the store) and buy?"; pseudocoordination shows characteristic properties, for example a restricted class of possible left-hand categories (cf. \*"What did you walk and buy?"), extraction only from the open-class right-hand member (cf. \*"Which store did you go to and buy shrimp?")]; Ross (1967).
2. *Head Movement Constraint* [Head movement doesn't cross heads. This cannot be escaped by excorporation: If X moves to Y by head-movement, then X cannot move on, stranding Y. (Clitic movement crosses heads and must be distinguished from head movement proper, i.e. head movement of complements in extended projections to their selecting projections, and of incorporees to their selecting predicates)]; Travis (1984).
3. *Movement is upward* [Movement is upward, landing in higher syntactic positions]; Ross (1967).
4. *Right Roof constraint* [Rightward movement is clause bounded ("the right roof constraint")]; Ross (1967).
5. *Second position* [There are second position effects which are category-insensitive, i.e. not sensitive to the category of the element in first position, but no second to last effects which are similarly category-insensitive. (This allows for immediately pre-verbal positions in V-final structures)]; Kayne (1994).
6. *Syntactic clitic placement* [A major class of clitics (phonologically dependent items) have their location in the surface string determined by purely syntactic principles of the language (i.e. ignoring the phonological dependency)]; Steele (1977).

#### *Binding Theory*

1. *Principle B* [Pronouns, in the unmarked case, can't be locally bound (under the same A-position class of locality as for Principle A), but can be bound nonlocally]; Chomsky (1973) / Lasnik (1976) / Chomsky (1981).
2. *Principle C* [an R-expression can't be bound by (systematically corefer with) a c-commanding pronoun]; Chomsky (1973) / Lasnik (1976) / Chomsky (1981).
3. *Structure relevant to binding* [The conditions on pronominal reference cannot be stated purely with linear order. The subject-nonsubject distinction plays an

important role, especially for Principle A (and B to the extent that it is complementary)]: Langaker (1966).

4. *Strong crossover* [Coreference is impossible between a pronoun in an argument position and a c-commanding antecedent when the antecedent has moved across the pronoun; i.e. is the head of a filler-gap dependency where the gap is c-commanded by the pronoun. Example: “Who did he say was hungry?” Coreference impossible]: Postal (1971) / Wasow (1972).
5. *Weak crossover* [Coreference is degraded between a pronoun and a c-commanding antecedent when the antecedent has moved across the pronoun; i.e. is the head of a filler-gap dependency where the gap is lower than the pronoun. Example: “Who did his mother say was hungry?” Coreference degraded]: Postal (1971) / Wasow (1972).

### *Arguments*

1. *Improper movement* [A-positions (as diagnosed by case, agreement, and binding) feed unbounded dependencies (e.g. the tail of a wh-movement, relative clause formation, or topicalization chain is in an A-position). Unbounded dependencies preserve case, agreement, and binding configurations, and do not (normally) feed A-positions (i.e. they do not normally increase the possibilities for an element to enter case-agreement-relevant relations, unlike passive, raising, etc.)]: Chomsky (1977)?
2. *Control versus raising* [Obligatory control is a subject-to-subject relation (or, in some cases, object-to-subject relation) in which one referent gets thematic roles from two predicates, related to each other by nonfinite complementation; in Raising, the shared argument gets only one thematic role, from the embedded predicate]: Rosenbaum (1965).
3. *Structural agreement* [There is a structural bias affecting agreement such that nominals higher in the clause are agreed with in preference to lower nominals, except where marked case on a higher nominal may disqualify it (reflected in subject agreement over object agreement)]: Aissen (1989).
4. *Grammatical Subject* [There is a distinction between grammatical subject and thematically highest argument (though traditional subject diagnostics may decompose even further)]: Chomsky (1965).
5. *Diesing’s Generalization* [If uniquely referring DPs (definites and/or specifics; Milsark’s “strong” noun phrases) and weak indefinites with the same grammatical function occupy different positions, then the uniquely referring DPs are structurally higher]: Diesing (1992).
6. *Person-Case Constraint (PCC)* [Languages place strong restrictions on the use of local direct objects when a goal NP is present (NP, or DP, as opposed to PP), for example: A direct object may not be first or second person in the presence of an indirect object]: Perlmutter (1971).
7. *No NCC* [There is no number case constraint; languages do not restrict the grammatical number of the direct object when a goal NP is present]: Nevins (2011).
8. *Ergative subjects* [Asymmetries between arguments for purposes of unmarked word order, binding, and control work the same way in nominative and ergative



languages. Clause structure in ergative and accusative languages is homomorphic]: Mahajan (1997).

9. *Null subjects* [Many languages allow pronouns to be unpronounced in certain positions under certain conditions. Where possible, these pronouns act much like overt pronouns for e.g. Binding Conditions]: Perlmutter (1971).
10. *High causatives* [In a morphological causative, the new causee will be higher than any argument of the base verb]: Baker (1988).
11. *Marantz' Generalization* [In benefactive applicative constructions, the new argument will be structurally higher than the base internal argument]: Marantz (1984).
12. *Erg Agreement is dependent on Erg case* [No language has a nominative-accusative case system and an ergative-absolutive agreement system, although matched systems are possible, and the opposite mismatch is possible (Bobaljik 2008, and typological sources)]: Anderson (1977).
13. *No Active Case* [No language has an active system of case marking, whereas active systems of agreement marking are possible. (Baker & Bobaljik in press/ in progress, but well documented)]: Mithun (1991)?

### *Quantifier Raising*

1. *QR* [The logical scope of natural language quantifiers (over individuals, times or situations/worlds) does not have to match their surface position. Quantifier scope is co-determined by structural factors (islands, clausal boundaries), logical properties of the quantifier (universal vs. existential) and the form of the quantificational expression (simple vs. complex indefinites)]: Bach (1968), May (1977).
2. *QR is clause bound* [The scope of (expressions corresponding to) universal quantifiers is limited by conditions identical or very similar to the conditions on A-movement (clause bounded, except in restructuring contexts)]: May (1985).
3. *Widest scope indefinites* [In many languages, morphologically simple indefinites (*some books at least one book*) may take unbounded scope, even across islands]: Fodor & Sag (1982).
4. *Reconstruction* [Dislocated quantificational expressions can take scope below their surface position, but no lower than their base position]: Chomsky (1976).

### *A-bar. A-bar phenomena*

1. *A-bar Unity* [A class of A-bar (filler-gap) constructions (including interrogatives, relative clauses, focus movement constructions, and operator-variable chains) show unified behavior with respect to locality and configuration]: Chomsky (1977), Chomsky (1981).
2. *Successive Cyclicity* [Unbounded dependencies are successive-cyclic, as diagnosed by locality effects]: Fillmore (1963) / Chomsky (1973).
3. *Covert A-bar dependencies* [There are operator-variable relations where the operator is low on the surface that are restricted by the same laws as A-bar dependencies, where the A-bar element is high on the surface. For example, the



- interpretation of *wh-in-situ* for selection and scope parallels overt *wh*-movement in a significant and fairly well-defined class of cases]: Huang (1982).
4. *Subject-object asymmetry for A-bar* [High (preverbal) subjects are more difficult to extract than low (often postverbal) subjects in a class of cases]: Ross (1967).
  5. *Freezing* [It's harder to subextract from subjects and objects that have moved; no language will permit movement out of a moved subject or object but not out of a nonmoved one, under otherwise identical conditions]: Ross (1967).
  6. *Specifier bias in Pied-piping* [If you can pied-pipe from a complement then you can pied-pipe from a specifier]: Ross (1967)?
  7. *Adjunct extraction is hard* [If a phrase is an island for argument extraction, then it is also an island for adjunct extraction]: Huang (1982).
  8. *Parasitic gaps* [An A-bar chain can license an otherwise illicit gap in an adjunct]: Ross (1967).
  9. *Resumptive pronouns* [Resumption is by pronouns (not by dedicated resumptive particles)]: Ross (1967).
  10. *Resumptive pronoun island alleviation* [Resumptive pronouns tend to alleviate island effects]: Ross (1967).
  11. *Local subject condition on resumption* [There is a class of resumption which is incompatible with local subject position]: McCloskey (1990).
  12. *Left-dislocation* [Many languages allow one or more kinds of left dislocation, with systematic similarities and differences from A bar movement (e.g. lack of case connectivity)]: Lambrecht (1994).
  13. *Intervention Effects (Beck Effects)* [Covert A-bar chains (i.e. in-situ wide-scope-bearing elements) cannot cross (take scope over) scope-bearing interveners]: Beck (1996).

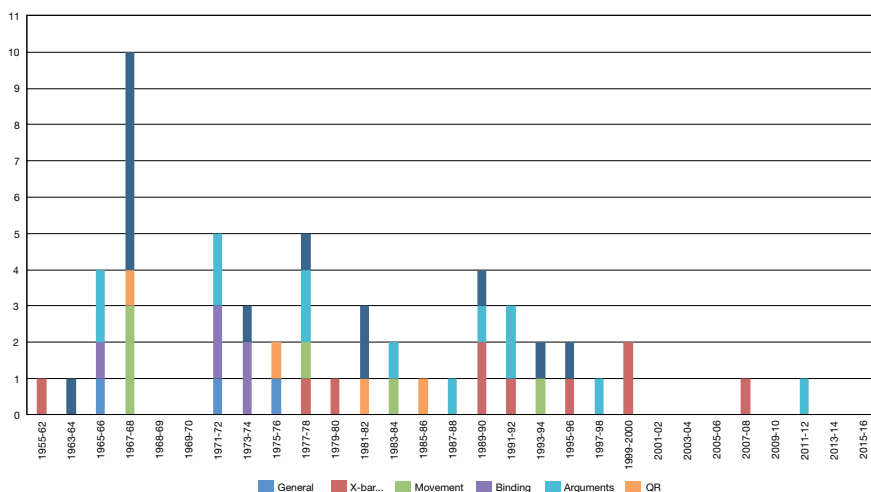


Figure 1. Discoveries by year.

### 3. Suggestions for additions

Many linguists sent me suggestions for items to be added to the list.<sup>9</sup> Most of these items were mentioned by more than one linguist. I will just list them here, in random order.

1. *Root vs non-root transformations* [Some transformations can only take place in root environments]: Emonds (1969).
2. *Accessibility hierarchy for relativization* [see also the Agent asymmetry above]: Keenan & Comrie (1972).
3. *Raising*: Postal (1974).

*X-bar theory, categories, and headedness*

1. *C-command*: Klima (1964) / Reinhart (1976).
2. *COMP/C*: Bresnan (1972).

*Movement in general (not restricted to A-bar or A)*

1. *Remnant movement*: Tiersch (1985).
2. *Principle of Minimal Compliance*: Richards (1989).
3. *Minimality/Relativized Minimality*: Chomsky (1986) / Rizzi (1990).
4. *Clitic doubling voids A-minimality effects*: Anagnostopoulou (2003).

*Arguments*

1. *VP-shells*: Chomsky (1955) / Larson (1988).
2. *VP-shells/double object constructions*: Barss & Lasnik (1986).
3. *Non-nominative subjects* [Non-nominative subjects behave like structural subjects]: Andrews (1976).
4. *Split subject position/two subject positions*: Schachter (1976) / Guilfoyle, Hung & Travis (1992).
5. *Exceptional Case Marking*: Chomsky (1981).

*QR*

1. *Quantifier lowering is subject to island constraints*: Lakoff (1965) / (1970).

*A-bar. A-bar phenomena.*

1. *Some kinds of sluicing ameliorates islands*: Ross (1969).

9. As one reviewers points out, results should include also those ideas that proved wrong but that opened the path for the discovery of many important generalizations. One such idea was Hale's Configurationality Parameter (Hale 1978), which was "a successful contribution in its failure", given that it opened the path to the conceptualization of binary branching, Merge, and the polysynthesis parameter (Baker 1996).

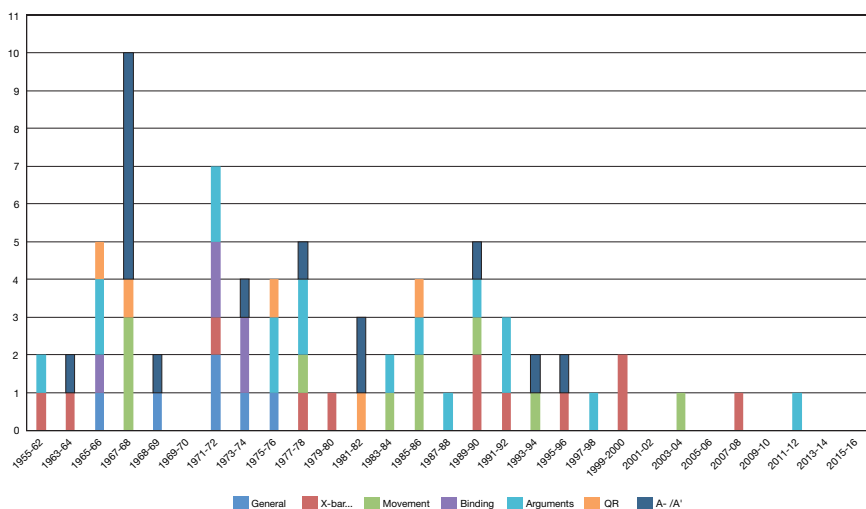


Figure 2. Suggested additions.

#### 4. Some comments on the time charts

Figure 1 (as well as Figure 2) shows that the most important and generally accepted discoveries or observations, according to “the list”, were made between 1955 and 1992.

After 1990, we see a steady discovery rate of 1 or 2 items every two years. From 2001 onwards, there is almost nothing. The obvious explanation for this decrease might be that discoveries or observations need to be tested, and it can take some time before they are accepted as true. Time is the main factor here: A generalization discovered in 2014 has not yet come to be accepted as a definite result, despite its publication. The impression that I have, however, is that this isn’t the whole story.

I would like to share some thoughts on these charts, and on the status of generative grammar, without trying to be too negative, and as a simple worker in the field. Before going into that, one disclaimer is essential. In what follows, I try to give a plausible explanation for the time curve we see in the figures above. In other words, I am trying to understand why some of the most prominent linguists in the generative field thought that the best results were obtained early on, and did not think of mentioning more recent ones.

While I do believe that a paradigm shift, as well as a focus shift, is at work, I do not mean to claim that all contemporary generativists are concerned with problems of Merge and cognition. Most of us, in fact, including myself, are concerned with the description and understanding of languages, grammars, linguistic phenomena. Many generalizations are coming out of this kind of work, though they do not spread as fast and large as they used to. Again, in what follows I am trying to discuss “the list”, not “my personal list”.

#### 4.1. Paradigm shift

The wealth of discoveries in the 60s and 70s, in the early days of generative grammar, is not repeated in any later periods. During the *Government and Binding* era, we still have a stable 'discovery-rate'. After the publication of the *Minimalist Program*, we seem to see much less happening.

We could ask ourselves why this is the case. One possible answer could be that the advent of the *Minimalist Program* has shifted the object of investigation from languages to language. This does not mean that GB was not interested in language: language was always the core of the investigation. During GB, the task was to identify the principles and parameters that constitute UG. This was carried out by looking at languages quite intensively. Unlike during the Phrase Structure Rule period, in which not many languages were taken into account and English was the primary language of investigation, during GB many studies of languages other than English were produced, and many cross-linguistic generalizations were drawn. The methodology consisted mostly in observing what happened in a language (or in two, comparatively) and trying to draw generalizations about how UG must look considering these observations. When something could not be explained on the basis of principles and parameters already formulated, a new parameter was formulated (and in the most extreme case, a new principle), resulting in an explosion of basic assumptions, and parameters, most of which were language-specific. In other words, there was a risk of simply repeating the Phrase Structure Rule enterprise, having filters or even parameters which would be able to account for one phenomenon in one language only, with little predictive power.

One of the key features of generative grammar, often contested by, for instance, typologists, is the assumption that one can use discoveries in one language to try and explain a different language. The existence of UG implies that there are shared features (not in the technical sense) in languages. This assumption informed much of GB work. While studying languages to try to understand the language faculty is still a worthwhile enterprise, the narration seems to me to have changed radically with the MP, at least for one group of syntacticians.

In GB, linguists (syntacticians) were busy trying to find similarities across languages, to identify parameterized principles that could account for the limits of syntactic variation. These parameterized principles were considered as part of UG; X-bar was considered as genetically provided, something underlying every grammar, the essence of our computational system. While X-bar has been largely abandoned, in practice most syntacticians still use it for their daily language description.

With the advent of MP, quite a large branch of MP, the so-called biolinguistics, has been concerned with understanding whether the computational basis of language is common to other cognitive faculties or not. Biolinguistics (Jenkins 2000), has focused on the Faculty of Language, which is defined in cognitive terms much more than Universal Grammar was. Of course, in both cases we are trying to understand how our grammatical/computational system looks, under the assumption that we have one. The image of this language acquisition device has, however, changed radically from the GB years to the biolinguistics years, and so has the

methodology used to investigate it. The discussion (at least as far as this subgroup is concerned) revolves around Merge, other components of human cognition, or animal language, but not so much around *wh*-movement or head directionality in different languages. Comparative syntax is still the main occupation of most generativists, but this is perhaps seen as a “reductionist problem”: reducing one issue to a wider one, rather than an explanation. Going *beyond explanatory adequacy* means that we not only wish to understand how languages are acquired, but why language looks the way it looks.

The understanding is that there might be something guiding humans to fix head directionality, but that is most likely an interface requirement (for instance, ease of computing a dependency between heads that are harmonically aligned vs heads that are not); there is certainly something allowing some languages to drop the subject, but that too is only partially relevant to understanding the nature of the faculty of language, and it might ultimately be an interface condition (or a set of conditions interacting, see recent work by Jimenez Fernández or Miyagawa).

As Chomsky remarked from the very early days (Chomsky 1965), generative grammar does not have much to say about language universals in the Greenbergian sense<sup>10</sup> (though Chomsky’s attitude with respect to typological generalization shifted around 1982).<sup>11</sup> Implicational universals of the sort “if in a language the determiner precedes the noun then the auxiliary will precede the verb”, which amounts to the head parameter, are not as central as they used to be for the generative enterprise. What we need to understand is what constitutes the Faculty of Language, and observing languages cannot provide much beyond a handful of clues. As an example, we can mention the recursion issue, debated by Daniel Everett and Nevins, Pesetsky & Rodriguez (2009) and many following works (most notably, the *Faculty of Language* blog, by Norbert Hornstein). The argument goes more or less like this: Pirahã does have recursion, despite what Everett maintains. But, and this is the important bit, even if it didn’t, this would not tell us anything about the Faculty of Language. Recursion is a characteristic of FL, which needs not be present in all languages. In other words, what we see in languages may or may not give us an indication of what constitutes FL. What does help is learnability, i.e. how a language can come about given the initial conditions. Of course, one should first know what ‘a language’ actually is in formal terms, before one can think about how it might come about. What I wish to say here is that the direction from which we tackle the whole Faculty of Language/UG issue has changed quite radically.

What concerns us is the mechanism whereby sentences are “assembled”; each language has a set of conditions, which are mainly linked to their features (Borer-Chomsky conjecture), but they are not as central to linguistic investigation as they

10. “Insofar as attention is restricted to surface structures, the most that can be expected is the discovery of statistical tendencies, such as those presented by Greenberg” (Chomsky 1965: 118).

11. “Greenbergian universals [...] are very suggestive” (Chomsky 1982: 111). They are “important, [...] yielding many generalizations that require explanation [...]” (Chomsky 1986: 21). These quotes are taken from Newmeyer (2017: 550).

could be. What is a well-formed feature? How exactly does one define features? These questions are rarely addressed nowadays. What is addressed to a larger extent is the relation between features, their geometry. The core mechanism for forming a syntactic object is Merge; syntax assembles all sorts of objects: those that are fit meet the interface conditions and “converge”, while the others crash. The size of the set of interface conditions is not so clear, and nor is the exact definition of a condition.

Be that as it may, this sort of methodological and paradigmatic shift has had consequences for the generalizations made about languages, which we have called “achievements” here. The “macroparametric”/classical approach has been replaced by the Borer-Chomsky conjecture (Baker 2008): we need to learn the lexicon, and we also learn the “parameters” attached to each functional head. Why these microparameters cluster in given ways is almost always still a mystery (but see, for instance, Biberauer & Roberts 2015), this isn’t particularly of interest as it isn’t relevant for our understanding of language.

There is, now more than ever, a divide between those syntacticians who occupy themselves with generalizations about languages, and biolinguists, who occupy themselves with generalizations about language. There’s nothing bad about this divide, other than that we are leaving generalizations about languages aside as if we already understand everything there is to know, and we don’t.

In general, “interface conditions” are a shorthand for “outsourcing”: by pushing things into other modules, most notably PF, we leave it to morphologists and phonologists to solve puzzles (like, for instance, linearization, heavy NP-shift, or even null subjects) that were once the syntacticians’ core object of inquiry. Phonologists and morphologists mostly do not recognize these as issues they need to deal with, so very few linguists work on these issues nowadays<sup>12</sup>. This, I think, is the main reason for the decrease in results that we see in our time charts.

#### *4.2. The specialization of the field*

Another issue that might have influenced this decrease is that linguistics is specializing more and more, as is natural for any discipline or science. This means that while 50 years ago syntacticians had to read, across-the-board, everything that was written about any topic in syntax, nowadays they tend to focus on their own narrower research topic.

Research topics have in turn changed, because of this evolution and because of the many discoveries that have been made in the meantime. For example, complementizers were treated as one thing in their first formulations, but since Rizzi (1997) there has been a fragmentation; there have been studies on each type of sentence introduced by each complementizer type; more details have been added, more language-specific aspects have been brought up. Nowadays, it is perfectly

12. One reviewer argues that I should provide empirical proof for my claim. One piece of evidence could be that there are very few articles recently on these issues. There is to date yet no replacement for Kayne’s LCA (Kayne 1994).

normal to spend all of one's career on the study of one complementizer. This in turn means that very specialized papers will be read by other specialists only, and the average syntactician will ignore most of what is said on topics that they are not working on. I don't think this is too substantial a problem, nor that it is a problem only of generative syntax (in fact, if anything, specialization shows that the field is growing) but it certainly has an impact on our time charts. Most discoveries are so specialized, so narrow and detailed, that other syntacticians don't even know about them.

#### *4.2.1. Neighbouring fields*

A connected issue is that we deem most of the empirical discoveries that come from other fields as not relevant. Psycholinguistics has evolved into a very strong field, but we rarely take the observations coming from that field seriously. Big data and statistical analysis can bring to light many interesting generalizations. The general attitude towards these neighboring fields is that of polite neglect. Many studies lack theoretical depth, and should therefore be ignored. The results are before our very eyes: generativists are often accused of being snobbish, and are becoming more and more isolated. While a healthy exchange would be fruitful for everyone, we see mutual disregard, or overt personal fights, more often than not.

Discarding everything as irrelevant is dangerous, and is drawing us towards isolation. Theoretical approaches to language are less and less prominent, and linguistics is moving towards a scarily vacuous empiricism. There is only one solution to this: we need to reach out, listen to what other fields and linguistic subfields have to say, and try to incorporate their insights (when possible), while at the same time proposing integrated methodologies that can help our enterprise.

### **5. Communicating results and learning about them**

Going back to the list, despite the many factors that we have discussed that have led to a decrease in results in recent years, we can still claim that the achievements of generative grammar are many. One of the biggest issues, however, is that these achievements are unknown to most people, even linguists from other subfields.

I have already mentioned the limited cooperation with neighboring fields. This is not the only problem we face: while achievements in many fields have at least been heard about by most people, achievements in generative grammar have not. Recently, Ángel Gallego of the Universitat Autònoma de Barcelona circulated a query, asking everyone whether they had heard at least the names of some of the main discoveries of the last centuries. There were terms like 'gravitational waves' or 'relativity theory'. And there were also words like 'Universal Grammar', or 'structure dependency'. Sadly, most people had never heard terms like UG or structure dependency. This is certainly due to the fact that we have spent way too little time sharing results, and communicating our views to the world.

Observe that this might not be true of generative grammar only: this might be a problem for linguistics in general, if one of the greatest young intellectuals I know, a neuroscientist, had never heard the word 'Indo-European'. This is somewhat



worrisome, especially given that if we do not communicate what we know to the general public someone else will: more and more anthropologists, psychologists, or historians claim discoveries that have been known to linguists for decades, and are even praised for them (see for instance ‘Brain scientists discover composition’, by Angelika Kratzer<sup>13</sup>).

Learning to communicate results and viewpoints is one of the challenges of generative grammar and linguistics in general. Learning to explain to people why this enterprise is worthwhile is also crucial for funding purposes. “The list” is therefore essential, even if we do not agree on what should be in it completely.

### 5.1. *Lack of funds*

One of the challenges that linguists, and in particular theoretical linguists, are facing these days is the chronic lack of funds for research. This has much to do with the new world order, which gives precedence to quantitative rather than qualitative research. The current situation of things can also be attributed to the perceived uselessness of generative grammar, which is sometimes considered vacuous even by linguists themselves.

This reflects quite badly in grants, which are almost never awarded for theoretical research. Given that most programs do not fund PhDs or post-docs directly but only through grants, it is becoming very difficult for the field to survive.

Here too, spreading the word, explaining the results, bringing this list to the layman could be extremely helpful, both for internal growth and for obtaining grants. With more research being done in generative grammar it is very likely that more results will be achieved.

### 5.2. *Reading about results*

Like other scientific fields, linguistics suffers from a publish-or-perish curse, which is strictly related to obtaining funds or promotions. Funds are scarce, as I have just said; to try to obtain at least some minimal funding for one’s research, a large number of publications are required. This, together with the fact that the average academic must comply with all sorts of requirements and attend to all sorts of tasks, means that linguists, and generative grammarians, struggle to find time for research. The little research time there is must be maximally productive: researchers write almost more than they read, these days.

There is a direct connection between the scarcity of time devoted to reading and the lack of acknowledgment of results: to be a “result”, something has to be recognized as such by the entire field. The problem is that the entire field will not know about the discovery, because the entire field no longer has the time to read what researchers working on different topics are producing, and has got out of the habit of doing so. Legitimation will be lost, and it will be much more difficult to talk about “results”.

13. <<https://blogs.umass.edu/kratzer/2015/10/08/brain-scientists-discover-compositional-semantics/>>.

## 6. Some final remarks

The generative enterprise has brought to light many interesting data generalizations, and has improved the understanding of how language works. While many of the achievements or discoveries date back to the early days of GG, many interesting generalizations and explanations for linguistic data are also emerging today as an output of this research enterprise.

From Government and Binding to the Minimalist Program there has been a paradigm shift resulting in a new research focus. While research on comparative syntax, or on syntactic variation, is still being carried out by several linguists, including myself, the attention has shifted to the Faculty of Language as a cognitive function rather than on the observation of languages. This means that different sorts of results are being presented nowadays, which find no place in this list. Furthermore, many results and generalizations still need to be digested by the whole community. This will prove more difficult given that there is no longer a “community” sharing all results as there used to be in the past: linguists are very specialized and rarely read research on topics that are of no immediate interest to them. How can a result be recognized as such, if three quarters of the people working within the same framework ignore its existence?

Generative grammar is a worthwhile enterprise. It has brought to light and helped to draw up many generalizations that would have otherwise been impossible to formulate. It has brought theoretical depth to many intuitions, and has provided the tools to make these intuitions explicit. Let us start by reading and spreading the results in this list, and let us bear in mind that those who are supposed to read these results have a very different profile from 20 years ago.

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