Preface to I-Subjects[1]
(with a summary of the parametric model of Borer 1983)

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1 'I-SUBJECTS' IN A NUTSHELL

Of the five questions which 'I-Subjects' set out to answer, the four summarized in (1) continue to be at the forefront of linguistic investigations three decades later:[2]

1. A What is the relation - if any - between the empty subject position in unaccusative constructions in null-subject languages and the insertion of overt expletive subjects such as *there* in English and *il* in French?

   B What determines the distribution of expletive subjects?

   C Do sentences have to have subjects (Chomsky's EPP)? And if so, why?

   D "Burzio's generalization" states that all accusative-assigning verbs must have a θ-subject. Is this generalization descriptively adequate? Can it be derived from other principles?

What, in particular, makes 'I-Subjects' deserving of a fresh look is the fact that by and large, the answers which are provided to the questions in (1) are couched in terms which are either directly still current, or could be updated without much explanatory cost. In hindsight, 'I-Subjects' is eerily minimalist, anticipating some major theoretical developments that were to emerge some 15 years later (most significantly, Chomsky's *Agree*).

The primary data which 'I-Subjects' is concerned with involves the distribution of post-Infl (=I), post-verbal subjects. At its core lies the definition of the notion *I-subject*, and a parameter which regulates its realization. Specifically, the rule in (2), with the domain definition in (3), serves to designate a unique NP (=DP in present terms) in the domain of each Infl (=IP or TP) as an *I-subject*, which enters a *privileged unique relationship* with Infl, manifested through unique potential agreement and Case marking. Differently put, if an *I-subject* requires Case, it must be assigned by Infl:

2. Coindex NP with Infl in the accessible domain of Infl
   (and where the NP coindexed with Infl is termed *I-subject*).

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[1] 'I-Subjects' was originally published in *Linguistic Inquiry* in 1986 (17.3, 375-416). A lightly edited version is to appear in *Linguistic Analysis*, 41 3-4 (2018), accompanied by this preface which places the article in its historical contexts, points out to its continuing relevance, and summarizes the parametric model in Borer (1983). Please contact the author if you would like a copy of the edited version of 'I-Subjects'.

[2] Here and throughout this preface and the endnotes, 'I-Subjects' refers to the article, and *I-subject(s)* is in reference to the term defined in 2.

3. α is in the accessible domain of $Infl_i$ iff $Infl_i$ c-commands α and there is no β_j, β_j I-subject of $Infl_j$ such that $Infl_i$ c-commands $Infl_j$ and $Infl_j$ c-commands α.

The obligatoriness of *I-subjects* is intended to replace the EPP as formulated originally in Chomsky (1982) and much subsequent literature. In contrast with EPP-driven accounts, *I-subjects* are not positionally restricted to the canonical subject position [NP,S] (=[DP,IP] in contemporary terminology), but are defined through their agreement with Infl in its accessible domain. Concretely, this account allows *I-subjects* in post-Infl and post-verbal positions, with the canonical subject position altogether absent in the structure. In turn, as the *I-subject* may only be Case-marked by Infl, it may be required to move to the [NP,S] position, should the relevant syntactic configuration restrict Infl from assigning Case in any other position. The presence, or lack thereof, of restrictions on how and where Infl could assign Case are in turn subject to parametric variations. In a language such as English, Infl may only assign Case, per force nominative, to the [NP,S] position. In Italian or in Hebrew, however, such assignment is available in a lower position as well, thereby allowing nominative, agreeing *I-subjects* in a post-Infl, postverbal position.

The specific parameter proposed to account for the difference involves an *inflectional rule* (in a sense made precise in section 3), in essence borrowing, with few modifications, *rule R* as originally proposed in Chomsky (1981, henceforth LGB). *Rule R* regulates the realization of the properties of Infl on the verb, and as such, traces its existence to Affix Hopping, first introduced in Chomsky (1957). In its LGB formulation, as well as in the formulation in 'I-Subjects', it involves the lowering of Infl to V, possible both in the syntax and in PF in Italian and in Hebrew, but barred in the syntax, in English. The syntactic lowering of Infl is, in LGB as well as in 'I-Subjects', what allows the occurrence of nominative-marked post-verbal subjects. Absent such syntactic lowering in English, nominative is only available in the canonical, subject position, [NP,S]. Imaginable present day adaptations would most naturally avail themselves of an *Agree* relations between I and V (or *v*), possibly together with the distinction between a strong and weak EPP feature, thereby achieving the same result without requiring actual syntactic lowering and without recourse to government as such.

2 BACKGROUND: SYNTAX CIRCA 1984

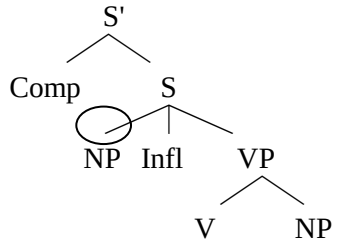
'I-Subjects' as well as its logical sequel, 'Anaphoric Agr' (published 1989) were originally circulated in 1984 and 1985 respectively, and are firmly ensconced in the theoretical landscape of the early Government and Binding model. The GB model underwent significant developments in the second half of the 80's, which post-date the time that 'I-Subjects' went to press. 'Anaphoric Agr', while written more or less at the same time, went to press a few years later, and I was thus able to integrate into it many later developments, which make for a considerably improved architectural landscape, into which the 'I-Subjects' system could fit very comfortably. What follows here is a brief summary of the specific theoretical assumptions made in 'I-Subjects', together with a brief review of the theoretical adaptations made in 'Anaphoric Agr', within the same set of assumptions.

2.1. Architecture

Most significantly, syntactic structures in LGB and into the mid 80's do not obey Binary Branching (introduced in Kayne 1984), and do not have an IP/CP distinction

(introduced in Chomsky, 1986a). The basic clausal structure in LGB, utilized as such in 'I-Subjects', is as in 5(4):

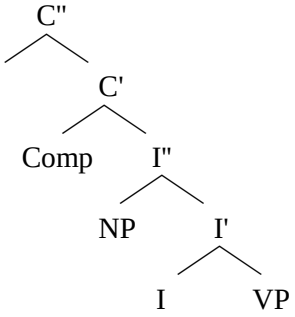
4.



In (4), Infl is the head of both S and S', and [NP,S] (circled) is definitionally the subject (following the definitions for grammatical relations in Chomsky, 1965). Several aspects of the structure in (4) are worth pointing out as they contrast with present day standard architecture. First, note that Infl governs the subject under any possible definition of government, and is hence capable of assigning case to it in a straightforward manner. Second, if S and S' are projections of the same node (effectively Infl' and Infl"), then the specifier of that projection is not the subject, but rather Comp is.

By the publication of 'Anaphoric Agr' in 1989, both Binary Branching and the IP/CP classification have been adopted, and the structure in 5(4) was replaced by the more familiar one in (5). The configuration in (5), note, does not require any modification in the definition of *I-subject* in (2) or its domain in (23):

5.



In section 5 of 'I-Subjects' I endorse the suggestion in Stowell (1982), according to which infinitival clauses have an I(nfl) node with an unrealized tense value, which must move to Comp to be licit. Given the revised structure in (5), the movement of I(nfl) to C(omp) becomes a classical instance of head movement, in compliance with the Head Movement Constraint (see Travis, 1984). In hindsight, some of the discussion in 'I-Subjects' could have benefited considerably from the architecture in (5), and in particular, the brief discussion in the original of the properties of *for*-infinitives. In consequence, that subsection (7.4 in the original) is omitted from this version.

2.2 Subjects, Case, θ-roles

Importantly, 'I-Subjects' predates the introduction – and general acceptance – of the VP-internal subject hypothesis – i.e. the claim that what emerges, in regular clauses, as the highest subject in the [NP,S] position (= [DP,IP]) is always moved from a lower, post-Infl position (see, in particular, Koopman and Sportiche 1991, but also Manzini, 1983, Stowell, 1983, and Sportiche, 1986 for earlier versions). The VP-internal subject hypothesis, in turn, serves to considerably increase the relevance the 'I-Subjects' system. In most present accounts, *all* subjects originate lower than I, making the set of questions

in (1) as well as their potential answers all the more salient, all the more so as the proposals 'I-Subjects' puts forth to account for the distribution of unaccusative subjects extend naturally to *all* clausal subjects, regarding of clause type.

Throughout, it is assumed in 'I-Subjects' that the verb assigns θ-role to its complement, and the subject is assigned its θ-role by the VP headed by the verb under sisterhood, very much along lines outlined in Marantz (1984). Sisterhood, note, can no longer hold once (4) is replaced with (5), but as the structure in (5) was taken on board almost simultaneously with the wide acceptance of the VP-internal Subject Hypothesis, the sisterhood relationship between the subject θ-role and some domain containing both the verb and its complement (i.e. V', as in (6)) could be maintained

6. $[_{VP}$ Subj$[_{V'}$ V …]]

As the reader may be aware, in my present work I reject altogether the claim that the lexical verb assigns argumental roles, or, for that matter, Case, to any of the event arguments occurring it its clause. It is therefore worth noting that the 'I-Subjects' system, as it stands, trades exclusively in grammatical features and their transfer, and makes no use of lexically-specified argument selection of any sort. In that sense, it quite possibly anticipates my own increasing reluctance to construct grammatical structures on the basis of information specified in the entries of substantive lexical elements.

2.3 Lexical Structure, Functional Structure

The GB model was, in hindsight, fundamentally lexicalist. At the time that fact was obscured by cotemporaneous approaches which denied altogether the existence of independent syntactic rules such as movement, relying, rather, on the modification of lexical entries to create word-order permutations (e.g. LFG and GPSG/HPSG). Lexicalism, nonetheless, was manifest through the particular role that lexical substantive heads, most typically verbs, played in the formation of syntactic structure. In GB a verb was a reservoir of massive information which severely restricted the syntactic, the semantic, the morphological, and the phonological contexts in which it could occur. Effectively, and as made explicit in early Minimalism, any lexical head was endowed with a rich set of features that had to be checked against the properties of the emerging structure, thereby severely curtailing the generative power of the phrase structure component.

The direct correlate of such a rich set of properties for lexical substantive heads was the great syntactic poverty in functional projections. In (4), the only functional projection (using present-day terms) is Infl. In the updated structure in (5), there are two functional projections – I and C. More syntactic functional richness was assumed by some (notably Emonds 1976, 1978 i.a. and Jackendoff, 1977), and was clearly required to do justice to the English auxiliary system or to the existence of determiners, but in most accounts determiners and even auxiliaries did not project, and mainstream syntactic discussion had, by and large, side-stepped the issue of what such functional items are, or what role they may have to play in the syntax. That inflectional morphology is fundamentally lexical (and subject to syntactic checking), as claimed by all lexicalist models including GB, further helped to side-line an investigation into the properties of inflectional elements and grammatical formatives.

Beginning, however, with the late 80's, and notably with Pollock (1989) and Abney (1986), we see the emergence of more articulated functional structure, which consisted of introducing into the syntax functional terminals which, just like 'lexical' heads, come with their own full maximal projections in line with the X'-scheme. The

expansion of functional syntactic vocabulary was further propelled by the emergence, with Baker (1985, 1988), of serious challenges to the Lexical Integrity Hypothesis, and the explicit suggestion that at least some bound morphemes could be syntactic heads of their own maximal projections.

The parametric model in Borer (1983), according to which inter- and intra-language variation, parameters, are contingent on inflectional properties therefore must be evaluated, first and foremost, against the background of the paucity of inflectional terminals which were syntactically represented, and the absence of solid theorizing concerning their role, even when present. As a result, the specific parametric variation illustrated in Borer (1983) as well as in 'I-Subjects' and 'Anaphoric Agr' is limited to properties of the Infl node, properties of complementizers, properties of Case markers, and properties of pro-forms, both referential and expletive.

3 WHAT ARE PARAMETERS? AN OVERVIEW OF BORER (1983)

The parameter involved in the application of *rule R* is a classical parameter in the sense of Borer (1983). At the core of that model lies an operation of grammatical feature transfer, an *inflectional rule*, as defined in (7) (Borer, 1983, p. 20, (23)):

7. A. a. Let *f* stand for an inflectionally specified grammatical feature.
   b. Let *F* stand for an assigner of *f*.
   c. Let *C* stand for a constituent specified without a variable.

   B. An operation which affects the assignment of *f* to *C*, such that it is not subject to any condition exterior to the properties of *f*, *F* or *C* is an *inflectional rule*

The transfer of features accomplished through inflectional rules as defined in (7) is formally equivalent to some well-defined *Agree* relations, in contemporary terms, with the probe-goal relationship relative to *f* defined on the pair F,C (and hence *f*[F,C]). As in the case of *Agree*, *inflectional rules* in the sense intended are meant to give rise to particular local dependencies, including, but not necessarily limited to, Case assignment, tense marking, agreement, auxiliary selection, determiner selection etc. Grammatical inflectional features, finally, are defined through appealing to the distinction made in Chomsky (1965) between *inherent* and *non-inherent* features, with the latter viewed as *grammatical*, in the relevant sense.[3]

Interlanguage variation, parameters, as well as intralanguage variation, were defined, in that model, not in terms of the universal inventory of relevant grammatical features, nor in terms of well-formedness conditions (e.g. the need to have Case, the need for empty elements to be I-identified), but by the two factors in (8):

8. A The availability, in a particular configuration, of an *F* with feature *f*, which is not available in the same configuration in another language, or, alternatively, in a similar but not identical configuration within the same language

   B The level of application for R, R an *inflectional rule*

[3] In contemporary terms, the discussion in Borer (1983) anticipates at least some aspects of the distinction between *interpretable* and *uninterpretable* features, in suggesting that gender and number features are *inherent* on nouns, but *grammatical* on agreeing verbs or adjectives. See Borer (1983) p. 26.

Commencing with an exemplification of (8a), consider (9) and (10), adapted somewhat from Borer (1983):

9. a. ḥkit ma9 Karim
talked-I with Karim
'I talked with Karim'

b. ḥkit ma9-o$_i$ [$_{NP}$ e$_i$]
talked-I with-him

c. ḥkit ma9-o$_i$ la Karim$_i$
talked-I with-him to Karim (Lebanese Arabic, Aoun, 1982)

10. a. dibarti 'im Anna
talked-I with Anna
'I talked with Anna'

b. dibarti im-a$_i$ [$_{NP}$ e$_i$]
talked-I with-her

c. *dibarti im-a$_i$ (le/*šel*) Anna$_i$
talked-I with-her (to/of) Anna (Modern Hebrew)

Taking the prepositions *ma9* and *'im* in (9) and (10) to stand for *F*, and some prepositional Case to stand for the grammatical feature *f*, *C* in (9a-10a) would stand for the post-prepositional NP to which *f* is assigned, or transferred. In (9b-10b), an agreement clitic surfaces on the preposition, and by common assumptions, serves to absorb *f*. The post-prepositional NP may not get Case now, and hence can only correspond to an empty category, [$_{NP}$ e] (under the assumption that the Case filter applies only to overt elements). English, unlike Hebrew and Arabic, does not have a vocabulary item which corresponds to the agreement clitic in Hebrew/Arabic, and thus the correlate of (9b-10b) is missing, and pronouns, by assumption, are full NPs (=DPs). The interlanguage *parameter* here therefore involves the presence in the vocabulary of some languages, but not others, of an agreement clitic, to which Case features could be transferred. To complete the picture, the agreement clitic may now itself function as an *F*, entering a *functional rule* which allows it to transfer *f*, in this case its I(nflectional) features (or ϕ-features in present day terminology) to [$_{NP}$ e], thereby yielding a pronominal interpretation (see section 5 of 'I-Subjects' on I-features and I-identification).[4]

As it turns out, in Arabic, but not in Hebrew, the environment in (9b-10b) allows for the insertion of a dummy prepositional Case marker, *la*, thereby making it possible for an overt NP to occur in (9c), after all, in Arabic, giving rise to so-called clitic-doubling, but not in its Hebrew (910c) equivalent. No additional *inflectional rule* as such is necessary here, nor do we need to assume a different syntax for Hebrew and Arabic. All we need to assume is that the vocabulary of Hebrew does not contain a

[4] One could streamline the proposal by assuming that English, just like Arabic and Hebrew, allows a (covert) agreement clitic, but that clitic is missing the relevant i-features that would allow it to I-identify its null complement. The parameter, in such case, would correspond to the set of features available for the clitic in English, vs. the set of features available to it in Hebrew and Arabic, and presumably link to the long-hypothesized connection between the availability of phonologically realized agreement and null pronominals..

dummy prepositional Case marker that could be inserted in that context. A dummy preposition Case marker, *šel*, does exist in Hebrew, but it is restricted to a nominal context, making its occurrence in (10c) independently illicit. Within nominal structures, then, clitic-doubling *is* licit in Hebrew, thereby providing us with an instance of an intralinguistic variation.[5]

11. dirat-o$_i$ *šel* ha-more$_i$
apartment-his of the teacher
'the teacher's apartment'

In the examples above, all instances of *F* are grammatical formatives, and all instances of *f* are straightforwardly inflectional, in the traditional sense. In addition to prepositions and agreement clitics, grammatical formatives and straightforwardly inflectional features are now – and were in 1983 - associated with tense markers, complementizers, determiners, auxiliaries etc. Within present day accounts, all these would be heads of functional projections. Within GB, however, instances of *F*, i.e. elements which could transfer inflectional features, included, as well, substantive items, bona fide members of the open-class lexicon. As a result, *inflectional rules*, in the intended sense, could not be stated in terms of grammatical terminals alone, but rather, had to allow for *F* to be any item which may assign grammatical features, with accusative-assigning lexical verbs being the primary example.

Turning now to (8b), in Borer (1983) (see also Borer 1984) I argue that rules of morphology, or for that matter any rule, can apply in any environment which satisfies its structural description. There is a caveat, however – *inherent* features cannot be modified during the syntactic derivation – they are constrained by the Projection Principle of Chomsky (1981) (or, in later incarnations, by the Inclusiveness Condition). The dividing line, I proposed, falls along traditional lines, with inherent features ranging over meaning, category type, argument selection and θ-role assignment, etc. Case or agreement, in turn, do not fall under such a restriction, and as a result, rules which affect Case or agreement could apply wherever their environment is met, to wit, our original *rule R*, which could apply to both syntactic and phonological representation.

As inherent features cannot be muddled with, it is clear that in and of themselves, they cannot be the source of (non-trivial) parametric variation.[6] The particular license for variation given by (8b), as a consequence, remains the prerogative of inflectional rules, in the relevant sense. The reader is referred to Borer (1983) for a number of proposals involving level of application, as a way of modeling grammatical variation.

Some final statements might be in order concerning the degree to which the system proposed in Borer (1983) to account for grammatical variation remains useful, as stated. I noted already that the inventory of functional projections available when the model was constructed was limited, thereby limiting the range of variations that could be postulated and studied. The system was further impaired by the fact that inflectional operations, in

[5] *La*, although it does occur in Hebrew in a subset of its occurrences in Arabic, is always contentful, with a benefactive, goal or directional meaning, and therefore with a set of *inherent* properties that make it incompatible with the environment in (10c).

[6] Insofar as the verb *agree* in British English takes a direct object, but fails to do so in American English, this could be viewed as a parameter distinguishing British English from American English. To the extent, however, that such variation is item-specific, does not reflect a more general property of the grammar and falls short of predicting the distribution of nominal complement types, I take such 'parameters' to be trivial.

general, were not properly integrated into the syntactic picture. In his own seminal work on the topic, Emonds (1976) in fact assumes that they constitute a special type of syntactic rule, a position he went on to articulate in much subsequent work, and it was that type of special local rule that I had in mind in 1983 when formulating the workings of *inflectional rules*. Contemporary approaches, however, differ greatly on that score. Most present day minimalist accounts assume few, if any, inflectional features which are transferred, or assigned, by lexical substantive heads, postulating, instead, rich functional structure with clear syntactic properties as the means by which grammatical features are linked (e.g. through *Agree*). In my own work, I go a step further and divide the vocabulary pool of any given language into two distinct lists. One contains grammatical functors with grammatical features (vocabulary items, in the sense of DM). The other contains bare roots, which have no grammatical properties whatsoever. Within that model, *inflectional rules*, or for that matter any morphological rule, are all subsumed under syntax, and parameters, in the relevant sense, could therefore only be stated on functional vocabulary, or functional terminals, and the relationship which they enter, as a matter of principle.

Restricting the range of targets for variation to the feature distribution on function terminals clearly yields a considerable formal simplification of the original system. On the flip side, however, any modeling of grammatical variation as based on functional terminals is likely to be severely hampered by the rich and at times non-consensual inventory of currently assumed terminals and features which, if all taken on board, run the risk of creating a system so lax as to allow virtually any variation at all. If, then, one is to assume, as most minimalist accounts do, that grammatical variation is to be traced back to grammatical features, in the relevant sense, what is needed, at the very least, is a better understanding of what the inventory of grammatical terminals consists of, and which of these terminals can be expected to give rise to variation, in the intended sense. The reader is invited to consult the rest of this volume for some important debates concerning these and related questions.

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