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Variation of Interrogatives in English and French

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Abstract

Aim of this paper is to provide a systematic account for the question formation and its cross-linguistic variation by making use of empirically well motivated constraints. Such constraints include the restriction on clause type, economy of derivation and representation, head, and traces. In line with the Optimality Theory, the constraints should be stratified according to the descriptions of grammatical structures. Interactions of the pivotal constraints determines the question formation. Furthermore, the constraint interactions and their different hierarchy can provide a unified account for the cross-linguistic variation between English and French concerning occurrence of subject-aux inversion and the *wh*-movement.

Key words: *subject-aux inversion, Optimality Theory, constraint, constraint ranking*

1. Introduction

This paper is concerned with cross-linguistic variation of subject-auxiliary inversion (SAI) and *wh*-movement, especially the distributional difference between English and French in question formation, deriving the distributional properties from interaction among universal constraints in Optimality Theory (OT).

Organization of this paper is as follows: In Section 2, we will review basic facts with respect to SAI and point out that the (pre-) minimalist machinery will face challenges in certain respects. In Section 3, we will propose an optimality-theoretic analysis. Section 4 offers a brief conclusion.

2. Facts and Problems

Let us begin with basic facts with respect to SAI in embedded questions in English. In standard English (SE), SAI in questions is restricted to matrix clauses; in subordi-

nate clauses it is not, as observed in (1-3) (asterisks indicate unacceptability):

(1) a. Is Mary going?
  b. What has John done?
(2) a. *I wondered was Mary going.
  b. *I asked what has John done.
(3) a. I wondered {whether/if}Mary was going.
  b. I asked what John has done.

However, SAI behaves quite differently when compared with the one in non-SE, such as Hiberno-English (HE) and Belfast English (BE):

(4) a. I wondered was Mary going. (HE)
  b. I asked what has John done. (HE)
(5) a. She asked who had I seen. (BE)
  b. They wondered what had I done. (BE)

(Henry (1995))

Moreover, there are further divisions in HE and BE, as shown in the following contrast:

(6) a. *I have found out was Mary going. (HE)
  b. *We all know what has John done. (HE)
(7) a. I've never found out would he really have come with me. (BE)
  b. She wants to know who did I appoint. (BE)

(McClosky (1992:15), Green (1981:28))

In BE, SAI is allowed in the complements with *wonder*-type verbs and semi-factive verbs such as *know* on the one hand. But, in HE, on the other hand, SAI is exclusively allowed in the complements with *wonder*-type verbs, i.e. in pure embedded questions.

In the principles-and-parameters approach, the unavailability of SAI in embedded questions is due to the violation of Projection Principle, which holds that selectional properties must be satisfied at every representational level. Consider the following structure schematized in (8) (details omitted):

(8) a. V [CP [C   ] [IP [I Aux] . . .]]

b. V [CP [C Aux] [IP [I t] . . .]]

The matrix verb in (8) selects the head of CP at the underlying structure. But when T-to-C movement (inversion) occurs, Aux, which is not selected by the matrix verb, raises to C, thus inducing the violation of the Projection Principle. Consequently, inversion is blocked. However, (4-5) and (7) cannot be explained with recourse to the Projection Principle.

In a feature-checking approach to movements (Chomsky (1995)), a movement is driven by an uninterpretable feature. A simple postulation of formal features such as strong C feature does not give any principled account to the dialectical variation of SAI presented above.

To compound the complexity, in marked contrast to English, French exhibits an optionality of *wh*-movement. That is, it shows a system respecting a SPEC-head relation between *wh*-operator in CP-SPEC and a functional head, C, as illustrated in (9), one without SAI as illustrated in (10), and the non-movement system, as in (11).

(9) Qui a-t-elle t rencontré t?
　　Who has she met
(10) Qui elle a rencontré t?
　　Who she has met
(11) a. Elle a rencontré qui?
　　　She has met who
　　b. *A-t-elle t rencontré qui?
　　　Has she met who

These facts suggest that the (pre-)minimalist machinery is in quandary as to how to provide a unified account for those cross-linguistic variations, which awaits a new analysis.

3. An Optimality-Theoretic Approach

In this section, we will instead make an attempt to give an account within the framework of an optimality-theoretic approach to syntax. First, let us briefly review basic ideas in OT. In OT, constraints are universal and ranked. The most crucial feature is that unlike conditions or principles in the principles-and-parameters approach or the minimalist program, violation of a lower-ranked constraint in the relative rankings for a language is allowed by satisfying a higher one.

Let us then propose several universal constraints that will be of some importance in this paper and discuss the adequacy for the sake of generality.

(12) CLAUSE TYPE (CL-TYPE) (cf. Chomsky and Lasnik (1977), Cheng (1991)):

Clause type must be manifested.

HEAD (Grimshaw (1997)):

A projection has an overt head.

ECONOMY OF REPRESENTATION (ECO-REP):

There can be no irrelevant symbols in a representation.

NON-REDUNDANCY (*REDUN):

A feature must not be duplicated within an element.

FAITH (cf. 'Last Resort Condition': Chomsky (1991)):

A syntactic input must be identical with the output.

CL-TYPE requires every clause to be typed in some way. For example, *yes-no* questions can be typed with a morpheme. If one such morpheme does not exist in a language, they instead must be typed in a syntactic fashion. There are, in fact, many languages where a question particle comes into play as a clause-type marker:

(13) a. *Vai* màte màjà? (Latvian)

Whether mother home? (Is your mother at home?)

b. *Kas* suitsetate? (Estonian)

Whether you-smoke? (Do you smoke?)

c. *Aya* Ali ketab darad? (Persian)

Whether Ali books has ? (Does Ali have any books ?)

d. *Waš* hdarti m ˤ ah? (Colloquial Moroccan Arabic)

Whether you-spoke with-him? (Did you speak to

him?)

e. *Nga* nin ndut-am e mɛnndɛ bɔ (Duala)

Whether this sorrow-my it will end? (Will this sorrow of mine end?)

f. *Czy* zamykacie okna? (Polish)

Whether you-close windows? (Are you closing the windows?)

Moreover, (14) is an instance that shows that one such question particle did exist in Old English.

(14) Hwæðer ge nu secan gold on treowum?

Whether you now seek gold trees?

"Do you now seek gold in trees?"

(Radford (1988:296))

Interestingly enough, it is observed that children at some stage of language acquisition can use a question particle:

(15) a. *Is* I can do that?

b. *Is* you should eat the apple?

c. *Are* this is broke?

d. *Are* you don't know Sharon's name is?

In (15), *is* and *are* are preposed for clause-typing to sentence-initial position. That is, it works as a question particle. But, in the adult grammar, such a particle is not available. Hence, *yes-no* questions in the adult grammar are typed syntactically, i.e. via SAI.

HEAD requires that a projection have an overt head (see Grimshaw (1997)).

ECO-REP, on a par with Full Interpretation (Chomsky (1991)), requires that there be no irrelevant symbols in a syntactic representation.Consider an SE *wh*-question:

(16) *I wonder which book that he will buy.

That in (16) violates ECO-REP because it does not make any semantic contribution at LF-interface. But as (17-19) show, it is allowed in varieties of English and ME.

(17) I wonder what street that he lives in. (varieties of English)

(18) *Middle English*

a. When he wyste why þat he cam [to Ireland], & so fer viage for stones nam, He scorned þem on his langage.

(R. Brunne Chronicle. *Wace* (*Rolls*) 8840, *OED*)

b. I wolde fayn knowe how that ye vnderstonde thilke wordes and what is youre sentence.

(Geoffrey Chaucer, *The Tale of Melibeus* 366)

(19) a. I wote not whether that the length of mater acumbred you.

(*Paston Letters*, 793 III. 183)

b. Whether that the prescience of God is The certaine cause of the necessite. Of thinges that to comen be.

(Geoffrey Chaucer *Troilus and Criseyde*, v. 1012)

Given the data presented above, *that* an overt head occupies the head of CP, thus satisfying HEAD. But the fact that it is disallowed in embedded questions means in our terms that in modern English, ECO-REP outranks HEAD; in ME and varieties of English, HEAD outranks ECO-REP.

*REDUN requires that a feature not be duplicated within an element.

FAITH requires that a syntactic input be maximally identical with the output. This constraint does not allow any trace left by movement nor deletion operations.

Before the differences observed in (1-7) are dealt with, a brief comment as to where [+ Q] features are specified is in order. Among natural languages there is a particular language in which, once a *wh*-movement occurs, a special morphology on T presents itself. Consider Kikuyu, a language of an agricultural Negroid people in the largest Bantu-speaking group in Kenya:

(20) *Kikuyu*

a. nó-ói ó-ɣ w-eciíri-a [Ngóɣe a-úɣ-írɛ [áte t̲ᵢ o-On-írɛ Kaanakɛ]]

Fp-who Sp-T-think-T Ngui Sp-say-T that
　　　　(irrealis)　　　　　(irrealis)

Pp-see-T Kaanake
(irrealis)

'Who do you think Ngūgī said saw Kaanake?'

b. ó-ɣ w-! éciiri-á [nó-oᵢ Ngóɣe a-úɣ-írɛ [áte t̲ᵢ o-On-
(realis) Fp-who　　(irrealis)　　(irrealis)

írɛ Kaanakɛ]]

'Who do you think Ngūgī said saw Kaanake?'

(Haïk (1990: 352))

In Kikuyu, when a *wh*-movement occurs, the realis form on T becomes an irrialis form. Such an alternation is exhibited in Palauan, Hausa, and Moore. This fact seems to show that a [+Q] feature is specified on T.

There is also a connection between tense and *wh*-movements in English. Suggestive evidence comes from (21) and (22):

(21) a. I just remembered [CP [IP I have to call him up]].

  b. I remembered [CP where [IP I have to call up]].

(22) a. I asked him [PRO to leave].

  b. John tried [PRO to leave].

To-infinitives generally are taken to have no tense, but as shown in (22), control *to*-infinitives do have an inherent tense and express an unrealized tense (or possible future) with respect to the one in the matrix clauses (see Stowell (1982)), and *wh*-question formations are possible.

Compare control *to*-infinitives with gerunds:

(23) a. John tried to climb the mountain.

  b. John tried climbing the mountain.

(24) a. *I don't remember who (our)visiting.

  b. *I wonder where (my)going.

The gerundive phrase in (23b), unlike the control *to*-infinitive in (23a), does not possess its own tense, and as (24) shows, *wh*-movement formations are impossible. That is, we are led by the data in (21-24) to suspect that there is a close connection between tense and *wh*-movements, in particular, the [+Q] feature. Hence, we have good reason to assume that [+Q]features are specified on T.

With this in mind, let us briefly take a look at a matrix question formation in English.

(25) [CP Who$_j$ [C' [C has$_i$-C] [+Q]] [IP Mary [INFL [T t$_i$-T]] [VP seen t$_j$]]]]

Because a [+Q] feature is specified on T, it raises to C via SAI. Let us then turn our attention to the complement of *wonder*-type verbs.

(26) I wonder [CP who C[+Q] [IP John INFL[+Q] [VP met t there]]]

In (26), the matrix verb selects for [+Q] in the head of CP. If SAI applies, in conjunction with the [+Q] specification on T, then it induces an ECO-REP violation because the [+Q] feature is duplicated. This account plays a central role in the failure of SAI in SE embedded questions.

The rankings for SE that are crucial and central here are: CL-TYPE ≫ ECO-REP ≫ *REDUN ≫ HEAD ≫ FAITH. Let us begin with embedded *wh*-questions:

(27) Tableau 1: Embedded *wh*-questions

Candidates	CL-TYPE	ECO-REP	*REDUN	HEAD	FAITH
...V [CP wh AUX$_i$ [+Q]-C[+Q] [IP DP$_i$ t$_i$ [VP t$_i$ V]]]			*!		**
☞...V [CP wh C[+Q] [IP DP$_i$ AUX[+Q] [VP t$_i$ V]]]				*!	*

Tableau 1 shows the competitors for embedded *wh*-

questions. If SAI occurs in the first candidate, it violates *REDUN. The second candidate without inversion violates HEAD. Since *REDUN is higher ranked than HEAD, the second one is optimal, i.e. grammatical.

Consider embedded *yes-no* questions:

(28) Tableau 2: Embedded *yes-no* questions

Candidates	CL-TYPE	ECO-REP	*REDUN	HEAD	FAITH
☞...V [CP if [+Q] [IP DP$_i$ AUX[+Q] [VP t$_i$ V]]]					*
...V [CP if [+Q]-AUX$_i$[+Q] [IP DP$_i$ t$_i$ [VP t$_i$ V]]]			*!		**

In an embedded question, *if*, an interrogative complementizer with a [+Q] feature specified, is introduced into the complement. Inversion with *if* violates *REDUN, so that the first candidate is optimal.

Let us turn our attention to BE. Remember that in BE, SAI is acceptable in the complements with *wonder*-type and semi-factive verbs:

(29) a. They asked who did we see.

  b. I wonder what did John think would he get.

  c. The police found out had the goods been stolen. (semi-factive verb)

  d. I know is he going or not. (semi-factive verb)

But, as Grimshaw (1979) and Inada and Imanishi (1997), among others, point out, these verbs behave quite differently, as illustrated by:

(30) a. They asked who, {John or Bill/*John and Bill}, could help her.

  b. They knew who, {John and Bill/*John or Bill}, could help her.

       (Inada and Imanishi (1997))

Wonder-type verbs select for appositive disjunctives, not conjunctions. Conversely, semi-factive verbs select for appositive conjunctions, not disjunctives. Further contrast is observed in the following:

(31) a. They {asked/wondered} who could ever help her.

  b.*They {knew/found out} who could ever help her.

         (ibid.)

In the complement with *wonder*-type verbs, negative polarity items such as *ever* are licensed, but in the complement with semi-factive verbs, they are not. Appositive disjunctives or negative polarity items are licensed solely under interrogative environments. Therefore, the facts in (30) and (31) show that the complements with semi-factive verbs lie under a declarative, not interrogative, environment. The

wh-phrases are not interrogatives. Rather, they are given an indefinite or indeterminate flavor. Given the discussion above, we are led to speculate that in embedded questions selected by semi-factive verbs, no [+Q] feature is specified in any way, nor more so than an auxiliary raised by SAI.

　　Given the different properties discussed above, the question immediately arises why SAI occurs both in the complements with *wonder*-type and in semi-factive verbs. It can be explained if we assume that in BE, HEAD is higher-ranked than ECO-REP or *REDUN. Consider (32):

(32) Tableau 3: Complement of *wonder*-type verb in BE

Candidates	CL-TYPE	HEAD	ECO-REP	*REDUN	FAITH
☞...V [CP wh AUXi[+Q]-C[+Q] [IP DPi ti [VP ti V]]]				*!	**
...V [CP wh C[+Q] [IP DPi AUX[+Q] [VP ti V]]]		*!			*

In (32), [+Q] is selected by the matrix verb in C position. If SAI applies in the first candidate, the auxiliary with [+Q] raises to C, violating *REDUN; the raising of the auxiliary to C satisfies HEAD because C position is occupied by the auxiliary. Since HEAD outranks *REDUN in the relative rankings for BE, the candidate with SAI is optimal.

　　Let us go on to embedded *yes-no* questions in BE. Consider (33):

(33) Tableau 4: Embedded *yes-no* questions in BE

Candidates	CL-TYPE	HEAD	ECO-REP	*REDUN	FAITH
☞...V [CP AUXi[+Q]-C[+Q] [IP DPi ti [VP ti V]]]				*!	**
...V [CP C[+Q][IP DPi AUX[+Q] [VP ti V]]]	*!	*			*

Once again, SAI in the first candidate leads to the violation of *REDUN. But the embedded question is clause-typed by inversion, so that CL-TYPE and HEAD are satisfied simultaneously. The second candidate without inversion violates the highest-ranked CL-TYPE. As a result, the first one is preferred over the second.

　　Let us compare complements with *wonder*-type verbs with those with semi-factive verbs. As we have discussed above, complements with semi-factive, not *wonder*-type, verbs cannot be regarded as an interrogative with a [+Q] feature specified. Thus, when inversion occurs, it satisfies HEAD. But the auxiliary with no [+Q] feature specified contributes only to the occupation of the empty C. In other words, inversion exists just to satisfy HEAD. However, it violates ECO-REP, for an element without a [+Q] feature (irrelevant for interpretation) is included in a syntactic rep-

resentation.

　　However, as briefly remarked above, note that in ME, that, which has nothing to do with interrogative interpretation, is acceptable. The same is true for BE:

(34) I wonder <u>which book</u> <u>that</u> they bought. (BE)

This fact shows that in BE, HEAD outranks ECO-REP. Hence, as illustrated by (34), it can be explained that inversion occurs in complements with semi-factive verbs in BE.

(35) Tableau 5: Complement of semi-factive verb in BE

Candidates	CL-TYPE	HEAD	ECO-REP	*REDUN	FAITH
☞...V [CP wh AUXi-C [IP DPi ti [VP ti V]]]			*!		**
...V [CP wh C [IP DPi AUX [VP ti V]]]		*!			*

　　It is, moreover, predicted that since in BE, HEAD is higher-ranked than ECO-REP, inversion is also possible with sentential subject CPs. This prediction is borne out by

(36) a. [CP Can you get a good job] depends on who can help you. (BE)

　　b. [CP Should he go or not] was the question. (BE)

　　c. [CP What did John say] is a mystery. (BE)

　　Let us take a close look at HE, next. Consider (34) and (35):

(37) a. I wonder when would they leave. (HE)

　　b. I wonder is he going. (HE)

(38) a. *I remember why did he leave. (HE)

　　b. *We know what did they buy. (HE)

　　c. *The police found out had it been stolen. (HE)

The facts in (37) and (38) can also be explained if we assume that the relevant constraints are ranked in the following order:

(39) Tableau 6: Embedded *wh*-questions in HE

Candidates	CL-TYPE	ECO-REP	HEAD	*REDUN	FAITH
☞...V [CP wh AUXi[+Q]-C[+Q] [IP DPi ti [VP ti V]]]				*!	**
...V [CP wh C[+Q][IP DPi AUX[+Q] [VP ti V]]]			*!		*

　　As for *yes-no* questions in HE, the second candidate violates CL-TYPE, so that the first one is optimal.

(40) Tableau 7: Embedded *yes-no* questions in HE

Candidates	CL-TYPE	ECO-REP	HEAD	*REDUN	FAITH
☞...V [CP AUXi[+Q]-C[+Q] [IP DPi ti [VP ti V]]]				*!	**
...V [CP C[+Q] [IP DPi AUX[+Q] [VP ti V]]]	*!		*		*

In complements with semi-factive verbs in HE, once again, inversion is disallowed. Since ECO-REP outranks HEAD,

the movement of the auxiliary with no [+Q] feature to C position violates ECO-REP (in fact, HE does not allow doubly-filled COMP as in (34) in contrast to BE and ME). Thus, the candidate without inversion is optimal.

(41) Tableau 8: Complement of semi-factive verb in HE

Candidates	CL-TYPE	ECO-REP	HEAD	*REDUN	FAITH
...V [CP wh AUXj-C [IP DPi tj [VP ti V]]]		*!			**
☞...V [CP wh C [IP DPi AUX [VP ti V]]]			*!		*

Now let us take a look at French interrogatives. As already mentioned, French exhibits an optionality of *wh*-movement. It shows a system respecting a SPEC-head relation between *wh*-operator in CP-SPEC and a functional head, C, one without SAI, and the non-movement system:

(42) Qui a-t-elle t rencontré t?

Who has she met

(43) Qui elle a rencontré t?

Who she has met

(44) a. Elle a rencontré qui?

She has met who

b. *A-t-elle t rencontré qui?

Has she met who

Systematic variation between languages is derived from differences between constraint rankings; that is, languages differ primarily in how they rank the universal constraints in strict dominance hierarchies that determine the circumstances under which constraints are violated and resolve the conflicts of them.

Grammar can have equally ranked constraints, that is, formation of a constraint tie. Suppose, for example, that two constraints are not ranked with respect to each other. In this case, they belong to the same stratum. In tableau, strata will be separated from each other by solid vertical lines, while constraints within the same stratum will be separated by dashed lines, with no relative ranking implied.

(45)

Candidates	C_1	C_2	C_3	C_4
P_1	*!			
☞ P_2		*		
☞ P_3			*	
P_4		*	*	

In Tableau (45), the candidates P_2 and P_3 violate different constraints that belong to the same stratum of the hierarchy.

These violation marks cannot decide between the candidates, and thus it is left to the lower ranked constraint to decide the optimal candidate. P_4 is eliminated by the middle stratum, since it induces more than the minimal number of violation marks of constraints in the middle stratum. Notice that every candidate in Tableau (45) does not violate the constraint C_4. Therefore, the candidates P_2 and P_3 are optimal. If the candidate P_2 in Tableau (45) violates C_4 as well, a decision is given in favor of the candidate P_3.

According to Grimshaw (1993), the optionality of *wh*-movement indicates that French *wh*-phrases are ambiguous between quantifiers and true *wh*-operators. In fact, the *wh*-phrase in (44a) does not establish SPEC-head relation with a functional head which bears [+Q] feature. If the assumption is correct, it is not necessary for *wh*-phrases as in (44a) to be subject to the conditions like the *Wh*-criterion, since they are not true *wh*-operators. Therefore, they can remain in situ. If the *wh*-phrases are true operators, on the other hand, they should be subject to the *Wh*-criterion. In this case, the *wh*-operators move up to a specifier position. The paradigms of (42) and (43) are explained if the *wh*-phrases are true *wh*-operators. However, SAI does not occur in (43) in contrast to (42), though the *wh*-phrases have moved up to CP-SPEC. Given the contrast, suppose that ECO-REP, HEAD, *REDUN, and FAITH are demoted down to the second stratum immediately below CL-TYPE in the course of acquiring *wh*-questions.

(46)　　a. {CL-TYPE, ECO-REP, HEAD, *REDUN, FAITH}

→b. CL-TYPE >> {ECO-REP, HEAD, *REDUN, FAITH}

The stratified hierarchy of constraints as shown in (46b) predicts the well-formedness of (42) and (43) ,since HEAD, *REDUN, and *trace are tied on the ranking.

Tableau 15

Candidates	CL-TYPE	ECO-REP	HEAD	*REDUN	FAITH
☞ [CP whj AUXk[+Q]-C [IP DPi tk [VP ti V tj]]]?					***
☞ [CP whj e [IP DPi AUXk[+Q] [VP ti V tj]]]?			*		**

In the case where sentences do not contain true *wh*-operators as in (44), the ill-formedness of (44b) is due to SAI, since the inversion aggravates a FAITH violation.

Tableau 16

Candidates	CL-TYPE	ECO-REP	HEAD	*REDUN	FAITH
☞ [$_{IP}$ DP$_i$ AUX[+Q] [$_{VP}$ t$_i$ V wh]]?	*				*
[$_{CP}$ AUX$_j$[+Q]-C[$_{IP}$ DP$_i$ t$_j$ [$_{VP}$ t$_i$ V wh]]]?	*				**

4. Concluding Remarks

In this paper we have argued that the (un-)availability of subject-auxiliary inversion and *wh*-movement can be derived from differences in the relative rankings of the proposed constraints for Standard, Hiberno-, Belfast English, and French as illustrated in the somewhat simplified figure below:

(47) a. Standard English: CL-TYPE >> ECO-REP >> *REDUN >> HEAD >> FAITH

b. Hiberno-English: CL-TYPE >> ECO-REP >> HEAD >> *REDUN >> FAITH

c. Belfast English: CL-TYPE >> HEAD >> ECO-REP >> *REDUN >> FAITH

d. French: CL-TYPE >> {ECO-REP, HEAD, *REDUN, FAITH}

The analysis based on the Optimality Theoretic constraints presented thus far establishes further empirical validity by providing a unified account for those syntactic phenomena concerning interrogatives. In view of this, the analysis is simultaneously flexible enough to accommodate the broad cross-linguistic variation in interrogative patterns, which are recalcitrant to deal with within the framework of the instantaneous model of language acquisition, and strong enough to do primary work in a wide variety of explanations.

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