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Allosteric Agreement in VSO Languages

1 Agreement, Nominative Case and Tense Associated?

In a great many languages, subjects of sentences are associated with a fixed set of different properties: they are assigned Nominative Case, show Person, Number and Gender Agreement with the inflected verb, and, finally, cooccur with finite verbs only. French and Dutch may be viewed as paradigm cases that exemplify these features for SVO and SOV languages respectively. However, this clustering of properties constitutes only a contingent, not a necessary, truth about some languages. In fact, these properties do not in general covary in UG but are mutually independent, at least partially.

Rouveret (1980) and Raposo (1987) discuss inflected infinitives in European Portuguese with Subject-Verb Agreement independent of Tense. Conversely, George and Kornfilt (1981) argue that complement clauses in Turkish may have Tense independent of Subject-Verb Agreement. In all these languages Nominative Case and Subject-Verb Agreement show covariation. The one constant property, which does not vary across languages, seems to be that Subject-Verb Agreement occurs if and only if Subject receives Nominative Case. The correlation will be explained if we hypothesize that Nominative Case is assigned under Specifier-Head Agreement (SHAGR).[1]

In the next sections, however, it will be shown that Subject-Verb Agreement in VSO-languages, in particular Standard Arabic, disturbs the present picture. In particular, we will see that Nominative Case assignment and Agreement do not always covary. Moreover, we will point out an apparent asymmetry in the properties of operator bound variables of Standard Arabic and Celtic.

2 Agreement in Standard Arabic

Although Standard Arabic is said to be a VSO language, sentences with SVO word order frequently occur, next to sentences showing VSO word order. In fact, root sentences show grammatical instances of any permutation of finite verb, subject, and object. Illustrations of VSO/SVO order with "Prefix Tense" (Imperfective Aspect) and "Suffix Tense" (Perfective Aspect) are given in (1) and (2).

(1) a. ya-ftaH-u   l-walad-u   l-baab-a
         IMP-3SM-open the-boy-NOM the-door-ACC
         "The boy opens the door"

     b. l-walad-u ya-ftaH-u l-baab-a

(2) a. fataH-a   l-walad-u   l-baab-a
         open-PERF-3SM the-boy-NOM the-door-ACC
         "The boy has opened the door"

     b. l-walad-u fataH-a l-baab-a

Both Imperfective and Perfective Aspect affixes show person, number and gender distinctions quite generally. The sentences of (1) and (2) are perfectly normal and only differ in terms of pragmatics, irrelevantly for present concerns.[2] The Nominative marked subject shows Person-Number-Gender Agreement with the Tense-Marked finite verb in each of the VSO and SVO sentences above. Consider now the following sentences.

(3) a. l-?awlaad-u   fataH-uu   (*fataH-a)   l-baab-a
         the-children-NOM open-PERF-3PM (*open-PERF-3SM) the-door-ACC
         "The children have opened the door"

     b. fataHa (*fataH-uu) l-?awlaad-u l-baab-a

The SVO and VSO sentences of (3) have subjects with Nominative Case assigned to them. They also have verbs that carry (Perfective) Tense Marking. A curious asymmetry emerges however. Apparently, only preverbal subjects show number Agreement with their finite verbs. VSO sentences of Arabic show dissociation of Nominative Case and Subject-Verb Agreement, or number Agreement, to be more precise. The converse case also exists in Standard Arabic. This is the case where we have

Subject-Verb Agreement, in particular number Agreement, but a non-Nominative subject. Consider (4) and (5).

(4) a.   ?inna l-?awlaad-a   fataH-uu   l-baab-a
            that   the-children-ACC open-PERF-3PM the-door-ACC
            "The children have opened the door"

      b. * ?inna l-?awlaad-a   fataH-a   l-baab-a
            that   the-children-ACC open-PERF-3SM the-door-ACC

(5) a.   ja@al-naa   l-?awlaad-a   ya-ftaH-uuna l-baab-a
            make-PERF-1P the-children-ACC IMP-3PM-open the-door-ACC
            "We made the children open the door"

      b. * ja@al-naa   l-?awlaad-a   ya-ftaH-u   l-baab-a
            make-PERF-1P the-children-ACC IMP-3SM-open the-door-ACC

In (4a) the preverbal subject has been assigned structural Case, i.e. Accusative Case, by the Case-governing complementizer *?inna*. As is clear from (4) Number Agreement with the Tense-Marked finite verb is obligatory. The case of (5) is similar. Here we have an analytic causative construction. Analytic causatives like *ja@ala* are ECM-verbs that assign structural Case to the specifier of their complements. Once again, we have Agreement but a non-Nominative subject.[3]

Furthermore, Standard Arabic allows dissociation of Tense and Agreement as well as dissociation of Tense and Nominative Case Marking. Consider (6) through (8), which show a contrast between affirmative and negative sentences. In affirmative sentences Tense is associated with the verb. In negative sentences Tense is associated with the negative particle.[4]

(6) a. l-?awlaad-u   ya-ftaH-uuna l-baab-a
         the-children-NOM IMP-3PM-open the-door-ACC
         "The children open the door"

      b. l-?awlaad-u   laa ya-ftaH-uuna l-baab-a
         the-children-NOM NEG IMP-3PM-open the-door-ACC
         "The children do not open the door"

(7) a. l-?awlaad-u   sa-ya-ftaH-uuna   l-baab-a
         the-children-NOM FUT-IMP-3PM-open the-door-ACC
         "The children will open the door"

      b. l-?awlaad-u   lan   ya-ftaH-uu   l-baab-a
         the-children-NOM NEG-FUT IMP-3PM-open the-door-ACC
         "The children will not open the door"

(8) a. l-?awlaad-u   fataH-uu   l-baab-a
         the-children-NOM open-PERF-3PM the-door-ACC
         "The children opened the door"

      b. l-?awlaad-u   lam   ya-ftaH-uu   l-baab-a
         the-children-NOM NEG-PAST IMP-3PM-open the-door-ACC
         "The children did not open the door"

The interesting point to be made here is that the negative particle covaries with Tense: *laa* negates Present Tense and co-occurs with imperfect verbs; *lan* only negates Future Tense and co-occurs with imperfect (subjunctive) verbs only; finally and most interestingly, *lam* only negates Past Tense and co-occurs with imperfect (jussive) verbs exclusively. As is particularly clear from (8), the perfect verb, which is invariably associated with Past Tense, can not co-occur with negative particle *lam* since it is the latter which carries Past Tense. Apparently, perfect verbs must (and imperfect verbs may) occupy a Tense position but are prevented from doing so in the presence of a negative particle. We conlude that all verbs in (6) through (8) carry full Agreement markings but only those in (6a), (7a), and (8a) also carry Tense. Adopting the *Barriers* framework of Chomsky (1986) and its generalized X-bar theory (which is extended to functional categories) we can explain these facts if it is assumed that Neg in Standard Arabic is a functional head, which c-commands AgrP but is itself c-commanded

by Tense, the functional head of TP.[5] ECP, more precisely Minimality, will then bar movement of V-Agr to T across a morphologically free negative head. Instead, only Neg can raise to support Tense, and V can upgrade no further than Agr. The "inner" subject is free, of course, to raise successive cyclically from Spec-of-VP to Spec-of-Tense as in all of (6)–(8).[6]

(9) $[_{TP}$ X [Tense $[_{NegP}$ Y [Neg $[_{AgrP}$ Z [Agr $[_{VP}$ NP [V ...]]]]]]]]]

Returning now to the issue of whether Tense can be dissociated from Agreement, we can safely conclude that such is the case on the basis of the following considerations. Consider (10).

(10) a. l-?awlaad-u   lam   ya-ftaH-uu (*ya-ftaH) l-baab-a
         the-children-NOM NEG-PAST IMP-3PM-open   the-door-ACC

      b. lam   ya-ftaH (*ya-ftaH-uu) l-?awlaad-u   l-baab-a
         NEG-PAST IMP-3SM-open   the-children-NOM the-door-ACC

We have established already that syntactic Tense must be involved in sentences like (10). However, Tense is carried by the negative marker rather than by the verb inflected for person, number or gender. As before only preverbal subjects must show full Agreement with the finite verb whereas postverbal subjects must not agree in number (only person and gender Agreement must be established). Finally, sentences like (11) clearly show that verbally supported Tense and Nominative Case Marking for subject are not correlated properties of the syntactic structure of Standard Arabic sentences.

(11) a. l-?awlaad-u lam ya-ftaH-uu l-baab-a (=(10a))

      b. ?inna l-?awlaad-a   lam   ya-ftaH-uu   l-baab-a
         that the-children-ACC NEG-PAST IMP-3PM-open the-door-ACC

Accusative as well as Nominative subjects co-occur with verbs that carry Agreement markings but which are not inflected for Tense. Tense is involved in these stuctures, to be sure, but it is supported by Neg. To summarize our conclusions with respect to Standard Arabic: (i) There is no Agreement only if the subject is Nominative (cf. (3), (4)–(5)), (ii) Tense and Agreement are mutually independent (cf. (3a), (3b), (10a), and (10b)), and (iii) Tense and Nominative are mutually independent (cf. (3), (4)–(5), (10), and (11b)).

    Conclusion (i) receives a straightforward explanation. Lack of Number Agreement co-exists with postverbal subjects only. Lack of Nominative Case Marking on the lexical subject occurs in ECM-contexts (cf. (4), (5)) only, i.e. contexts in which the subject precedes the verb. Consequently, incomplete Agreement and Accusative marked subject will always give rise to a contradiction.

    In the next section we will see that the SVO-languages Arabic and Celtic are similar in that they do not tolerate full Subject-Verb Agreement when the subject is postverbal, a property in which they differ from Germanic as well as Romance languages. However, subject variables in these languages show contrasting properties: they have pronominal qualities in Standard Arabic but namelike qualities in Celtic.

3 Typological Questions

In the previous section we have seen that in Standard Arabic there is no full Subject-Verb Agreement if the subject follows the verb. Let us assume the IHS-hypothesis to be generally correct. Then we may say that the finite verb in Standard Arabic shows up with default values for person, number, and gender (third person, singular, masculine) if the inner subject stays inside VP. Only if the "inner" subject moves from its Spec-of-VP position to Spec-of-IP will there be SHAGR. Apparently, such a movement is not obligatory (we will argue below that there actually is Agreement even in these postverbal subject sentences, *viz.* Agreement between an expletive "outer" subject and the finite verb, but for the moment we will disregard this outcome). Surprisingly, this lack of Agreement is not restricted to Standard Arabic. We find it in the different Celtic languages too. This is illustrated for Breton in (12) below.[7]

(12) a. levrioù a   lenn   (*lenn-ont)   ar   vugale
         books   PRT read-PRES (*read-PRES-3P) the children
         "The children read books"

b. levrioù a   lenn-ont   (*lenn)
    books PRT read-PRES-3P (*read-PRES)
    "They read books"

(13) a. ar vugale   a   lenn   (*lenn-ont)   levrioù
          the children PRT read-PRES (*read-PRES-3P) books

      b. Int   a   lenn   (*lenn-ont)   levrioù
          They PRT read-PRES (*read-PRES-3P) books

In sentences like these, postverbal subjects do not agree with their verbs as shown in (12a). In fact they must not agree at all, not even in preverbal position as in (13a). Agreement is necessary only to license empty pronominal subjects as in (12b). Even subject pronouns in preverbal position do not allow Agreement on the verb. This is shown in (13b). Traditionally, Agreement on the verb is called the "synthetic" form while lack of Agreement affixes on the verb gives rise to the so called "analytic" form. In affirmative sentences like these, the synthetic form is used with *pro* subjects only. In general, the situation is not different in other Celtic languages like Irish or Welsh, which differ in minor ways only.[8] Celtic sentence structure may therefore be represented as follows.

(14) [$_{CP}$ ...[C [$_{IP}$ I [$_{VP}$ NP [$_{VP}$ V ...]]]]]

The verb raises to pick up Tense and Agreement (if any) in I and upgrades further to C, much as in V-second languages like German or Dutch. In Breton, but not in Welsh or Irish, Spec-of-CP must be filled in affirmative root clauses, again like in German or Dutch. An interesting property of all Celtic languages, and at the same time a property that distinguishes them from Germanic languages, is that lexical subjects do not show Agreement. This may be taken to mean that they never show up in Spec-of-IP. Hence the failure to apply SHAGR. Preverbal subjects in Spec-of-CP will consequently co-occur with analytic verbs only. But why shouldn't there be a Spec-of-IP? Or alternatively, why aren't these languages like German or Dutch, which have V-raising to C but "normal" Subject-Verb Agreement independent of topicalizing the subject? See (15).

(15) a. [Bücher lesen (*liest) [die Kinder [*vbl* t] t']]]
      b. [Die Kinder lesen (*liest)[*vbl* [Bücher t] t']]]

In German Subject-Verb Agreement obtains generally, and is independent of the applicability of fronting or the grammatical function of the grammatical category that substitutes for Spec-of-CP. Agreement must therefore be the result of SHAGR between Spec-of-IP and I containing Agr. The subject must have passed through Spec-of-IP (or otherwise be chain-linked to it) in order to make it possible for the inflectional head to discharge its Agr-features. Apparently, Celtic Agreement works differently, and more like Standard Arabic, as shown in (16).

(16) a. kutub-an   ya-qra?-u (*ya-qra?-uuna) l-?awlaad-u
          books-ACC IMP-3SM-read   the-children-NOM

      b. l-?awlaad-u   ya-qra?-uuna (*ya-qra?-u) kutub-an
          the-children-NOM IMP-3PM-read   books-ACC

Breton (12a) and (13a) should be compared to their German and Standard Arabic counterparts in (15) and (16). We see then that Standard Arabic is like German (and unlike Breton) with respect to agreement patterns of preverbal subjects (cf. (15b), (16b) vs. (13a)), but is alike Breton (and unlike German) with respect to agreement patterns of postverbal subjects (cf. (12a), (16a) vs. (15a)). This is an awkward situation, which raises the following questions. Assuming that Agreement is SHAGR between Spec-of-IP and Agr in I, why must subjects always pass through Spec-of-IP in Germanic, why can't they do so in Celtic, and why can they do so only conditionally in Arabic?

Although Celtic agreement resembles the Arabic case closely with respect to lack of (full) agreement in postverbal contexts, there is an important difference. The asymmetric agreement of Arabic may be correlated with another contrast distinguishing these languages: empty categories resulting from Wh-movement, i.e. variables in Case position that are A-bar bound by appropriate elements in Spec-of-CP, show different behavior in Celtic and Arabic, as the Irish interrogative sentences below illustrate.

(17) a. Cena   fir   a   meas   tu   go   dtiocfaidís?
          Which men PRT think-PAST you PRT come-COND-3P
          "Which men did you think would come?"

    b. Cena   fir   a   meas   tu   go   dtiocfadh   siad?
       Which men PRT think-PAST you PRT come-COND they

(18)   a. * Cena   fir   a   mheas   tu   a   thiocfaidís?
           Which men PRT think-PAST you PRT come-COND-3P

       b. Cena   fir   a   mheas   tu   a   thiocfadh?
          Which men PRT think-PAST you PRT come-COND

Questions, relatives, or other structures containing unbounded dependencies in Irish (or other Celtic languages) may be of different types. The "Indirect Strategy", illustrated in (17), is a resumptive pronoun strategy, and is characteristically represented by a fixed series of complementizers *a ...(go ...)** that induce a specific mutation effect on the following verb (here nasalization). The "Direct Strategy" is illustrated in (18), and is characterized by a different series of complementizers, *a ...(a ...)**, with a different mutation effect (lenition). This alternative mode is the movement strategy. Since the grammar of Irish allows analytic verbs to co-exist with expressed subjects only (lexical NP and pronoun alike), while it permits synthetic verbs to co-exist with null subjects exclusively, we can correctly conclude that the movement strategy involves empty categories that possess the properties of lexical subjects, while the empty category involved in the indirect mode must be pronominal.

Indeed, the overt pronominal in (17b) is an expressed subject that only takes the analytic pattern of agreement, and the empty subject licensed by the synthetic form in (17a) must therefore be pronominal. In contrast, the movement strategy, which gives rise to the alternative series of complementizers in (18), must involve variables, and since in general variables behave like names, we expect them to do so in this particular case too. The ill-formedness of (18a) demonstrates that Case-marked traces of moved categories, variables, can not occur with synthetic forms, but like lexical NPs they can co-occur with analytic forms as shown in (18b). Variables have the properties of names in Celtic.[9]

Let us now look into the properties of variables in Standard Arabic. As we will see, these carry pronominal features. Consider (19) en (20).

(19)   a.   ?ayy-u   rijaal-in ya-qra?-uuna kutub-an
           which-NOM men-GEN IMP-3PM-read books-ACC
           "Which men read books?"

       b. * ?ayy-u   rijaal-in ya-qra?-u   kutub-an
           which-NOM men-GEN IMP-3SM-read books-ACC

(20)   a. * ?ayy-a   kutub-in ya-qra?-uuna rijaal-un
           which-ACC books-GEN IMP-3PM-read men-NOM
           "Which books do men read?"

       b.   ?ayy-a   kutub-in ya-qra?-u   rijaal-un
           which-ACC books-GEN IMP-3SM-read men-NOM

Assuming that the Wh-NPs in (19)–(20) show up in Spec-of-CP, and, further, that the finite verbs substitute for the empty root complementizers, much as in French or real V-second languages like Dutch, we derive the following schematic S-structure representations for these sentences.

(21)   a.   [$_{CP}$ WH-SUBJ-3PM V-3PM [$_{IP}$ t' [$_{VP}$ *vbl* t OBJ-3PM]]]

       b.   [$_{CP}$ WH-OBJ-3PM V-3SM [$_{IP}$ t' [$_{VP}$ SUBJ-3PM t vbl]]]

The finite verb binds its traces t and t', and the variable is bound by the operator phrase in Spec-of-CP. We may assume similar representations for SVO vs. VSO sentences like (3a) and (3b): the former sentence will be represented by (21a) with the Wh-phrase replaced by a simple NP, while the latter's S-structure has only I-to-C applied to it. These structures show that operator-bound subject variables must agree with the finite verb in number as well as in person and gender, while lexical non-operator-bound subjects must agree in person and gender only. In fact, they are similar, in all relevant respects, to structures representing simple VSO sentences like (22) below. Notice that (19a) and (20b) correspond to (22a) and (22b) respectively. In particular, the subject variable of (19) shows the pronominal agreement pattern that is characteristic of null subject sentences (cf. (22a)).

(22)   a. ya-qra?-uuna *ec*   kutub-an
         IMP-3PM-read *pro*-3PM books-ACC
         "They read books"

b. ya-qra?-u   rijaal-un   kutub-an
    IMP-3SM-read men-NOM books-ACC
    "He reads books"

Sentences like (19)–(20) are important because they show that traces of subject NPs that have been Wh-moved to Spec-of-CP do not behave like expressed subjects. Instead they show pronominal qualities. Arabic is the reverse case of Celtic in this respect. It would seem then that sentences like (19) must be interpreted much like the "Indirect Mode" of Irish questions, even though the empty pronominal is locally A-bar bound, a situation which otherwise gives rise to ungrammaticality.[10]

However, this conclusion can not be correct since it would give rise to another unexplained asymmetry: there is no (obligatory) resumptive strategy for objects in questions, even though resumptive strategies are available for both objects and subjects in other constructions like left-dislocation and relativization. But then we have a problem: subject variables have namelike properties in Celtic, as expected, but have unexpected pronominal properties in Arabic.

An alternative way of analyzing sentences like (19) is to assume that Spec-of-IP is an intermediate position for the Wh-operator in Spec-of-CP. For declarative SVO sentences, the subject NP may then be alternatively realized inside Spec-of-IP, A-binding its trace inside VP, or inside Spec-of-CP, A-bar binding its variable in Spec-of-IP. Number Agreement is now uniformly defined as the specifier-head relation that holds between Spec-of-IP and its head I. Although it looks like a promising way to proceed, an immediate problem arises. There is a logically possible derivation for ill-formed (23b) that does not contradict any grammatical principle.

(23) a.   * maadhaa r-rijaal-u qara?-uu

      b.   * maadhaa qara?-uu r-rijaal-u

(24) [$_{CP}$ maadhaa C [$_{IP}$ r-rijaal-u I [$_{VP}$ t V vbl]]]

We continue to assume that the Wh-phrase is in Spec-of-CP binding the object variable inside VP as in (24). The verb head-moves to I, and the V-incorporated I raises further to C. V-to-I is forced since the Agreement suffix must be lexically supported. I-to-C is forced by principles of Wh-interpretation so that ungrammatical (23a) is explained.[11] In fact, since Spec-of-IP must be an accessible position for "inner" subjects in Standard Arabic, the contrast of *maadhaa r-rajulu qara?a vs. maadhaa qara?a r-rajulu supports the position that I-to-C must effectively take place.

If movement into Spec-of-IP is not ruled out a priori it should be possible to analyze (23b) as in (24). R-rijaal is raised to Spec-of-IP triggering SHAGR with the affixal head of IP to which the verb has been raised. Moreover, it receives Nominative Case from the functional head under SHAGR. Object Wh-phrases can always end up in Spec-of-CP in simple structures like (24) without violating ECP, inducing I-to-C when they do. Why, then, is (23b) ungrammatical? Notice that we can not simply say that Spec-of-IP is not accessible in derivations that yield VSO or Wh-OVS sentences but must be accessed in derivations that yield SVO or Wh-SVO sentences. Although this asymmetry of accessibility could be derived, rather than crudely stipulated, from considerations of economy of derivation and ECP/Minimality as we will argue below, its explanatory depth is not sufficient empirically.

Even with preverbal object Wh-phrases, the verb still agrees with its postverbal subject in person and gender, though not in number. Compare (25a) with (25b). If Spec-of-IP is not available for subjects in interrogative sentences with a non-subject Wh-phrase in Spec-of-CP, how come there is Person and Gender Agreement in (25a)?

(25) a. maadhaa qara?-at/*qara?-a   l-banaat-u
         what   read-PERF-3SF/*read-PERF-3SM the-girls-NOM
         "What have the girls read?"

      b. ?ayy-at-u-hunna   qara?-na/*qara?-at   r-risaalat-a
         which-F-NOM-them-F read-PERF-3PF/*read-PERF-3SF the-letter-ACC
         "Which of them has read the letter?"

Let us continue to assume the null hypothesis, viz. Person, Number, and Gender Agreement is the consequence of a specifier-head relation between a functional head Agr and a maximal projection in its Spec-position. We then must conclude that postverbal subjects are themselves in Spec-of-IP (begging

the question of Number Agreement) or that they are still in Spec-of-VP but linked to an appropriate expletive element in Spec-of-IP (preserving the explanation of Number Agreement).

Interestingly, there is overt evidence for an "outer" subject position in addition to the "inner" subject position in Arabic.[12]

(26) a. ?inna-haa   qara?-at (*qara?-na) l-banaat-u   r-risaalat-a
          that-3SF-ACC read-PERF-3SF   the-girls-NOM the-letter-ACC
          "the girls have truly read the letter"

     b. Hasib-naa-hu   qara?-a (*qara?-uu) l-?awlaad-u   r-risaalat-a
          think-PERF-1PL-3SM-ACC read-PERF-3SM   the-children-NOM the-letter-ACC
          "We thought the children to have read the letter"

(27) a. ?inna l-banaat-a qara?-na (*qara?-at) r-risaalat-a

     b. Hasib-naa l-?awlaad-a qara?-uu (*qara?-a) r-risaalat-a

Nominal sentences like (27a) that start out with a Case-marking complementizer which assigns Accusative Case to the following NP (not necessarily a subject as in this case) and ECM-sentences like (27b), in which the exceptionally Case Marking verb assigns Accusative Case to the following NP (necessarily a subject) can be alternatively realized with Case spelled out as an expletive clitic as in (26a,b). Substituting the plural feminine clitic -hunna for -haa in (26a), or the plural masculine clitic -hum for -hu in (26b) yields ill-formed results. We conclude that expletive pronominals in Standard Arabic are neutralized with respect to number in favor of the third singular default value.

Notice that there is Person and Gender Agreement between the expletive clitic, the "outer" subject, and the external argument, the "inner" subject. In this respect Arabic resembles French (cf. *il est venu beaucoup de filles* vs. **il sont venu(e)s beaucoup de filles*) but differs from it also in allowing for a gender contrast (cf. **elle est venue beaucoup de filles*). In French, the expletive subject clitic is invariant *il*. In both cases there is full Agreement between Spec-of-IP and its head.

Clearly, Agreement in Arabic can be accounted for in the same way: VSO sentences must be reinterpreted as NP-I-SVO structures with an empty non-anaphoric expletive pronominal in Spec-of-IP. Since I contains Agr-features without exception (there are no infinitives in Standard Arabic), SHAGR will always apply. SHAGR thus holds between an expletive pronominal *pro*, which may be overtly realized as -*hu* or -*haa*, and the verb-incorporating Agr. In effect, there will be full Agreement despite appearances. Arabic is a null subject language, unlike French, and consequently has null as well as phonologically realized expletive subjects. These expletive pronominals are characterized as third person singular but may have feminine or masculine gender. Postverbal "inner" subject must replace these expletive pronominals at LF due to the Principle of Full Interpretation.[13] If we assume replacement to be subject to a condition of unification, we get the desired results. Number is neutralized in expletive *pro* but not so gender (or person). LF-raising of "inner" subject to "outer" subject is therefore well-defined only if the relevant Agr-features, *viz.* gender (or person), are nondistinct. Since number is invariably fixed, i.e. unmarked, with expletive *pro* in Arabic (as in French) there can be no number contrast and no contradiction by verbal Agr. Person as well as Gender Agreement will thus be derived, as will be the apparent lack of Number Agreement.

4 Allostericity

So far we have argued that Standard Arabic has pleonastic Spec-of-AgrP and that here too Subject-Verb Agreement is a special case of Specifier-Head Agreement. Let us assume more generally that functional heads are "primers" for syntactic operations: syntactic activity is triggered by functional heads, perhaps exhaustively. Viewed from this perspective Verb-Second, Subject-Verb Agreement, and Case Marking are the visible effects of the active presence of C, Agr-S, and Agr-O respectively. Wh-movement as well as NP-movement may then be (indirectly) related to syntactically active functional heads. Turning to the issue of Subject-Verb Agreement, we therefore assume that the presence of the functional head Agr(S) forces SHAGR. Let us assume furthermore that Agreement features may in general be a catalyst for syntactic activity, and that their activity will not be restricted to canonical positions. By this we mean that Agr not only induces SHAGR between Spec-of-AgrP and itself when it heads AgrP, the canonical realization of SHAGR, but may also enforce SHAGR, under appropriate circumstances that must yet be made precise, between Spec-of-CP and itself when Agr has been moved into C. We will call this non-canonical realization of SHAGR "Allosteric Agreement."

Finally, we tentatively assume that allosteric effects must be restricted to a well-defined class of Agr-features. Only if the grammar allows for a marked-unmarked opposition in the values of Agreement features will the marked features show allosteric activity, the default values remaining dormant. Thus, the opposition "dormant" vs. "active" will exist only if default values are defined. In Standard Arabic third person singular is default. Therefore, non-third person values will be marked values as will be plural and gender values. We may extend these assumptions to Celtic where third singular is a default value (the other Agr-feature values being syntactically alive). We may summarize our position as in (28).

(28) a. Functional heads are primers for syntactic activity

      b. Active heads enforce allosteric effects

      c. In Standard Arabic plurality induces allosteric activity

      d. In Celtic non-third singular Agr induces allostericity

We are now in a position to explain the curious asymmetry pointed out earlier: i.e. (i) why VS and SV orders have identical patterns of agreement in affirmative sentences of Celtic, and (ii) why VS and SV orders have distinct patterns of agreement in Standard Arabic. In this we rely on the general validity of Chomsky's (1986, 1989) *Barriers* framework, which we have been assuming throughout.

By way of illustrating the relevant Arabic cases, consider (19) and (20), repeated here as (29) and (30).

(29) a. ?ayy-u rijaal-in ya-qra?-uuna/*ya-qra?-u kutub-an (=(19a,b))

      b. [?ayy-u rijaal-in ya-qra?-uuna [*vbl ec* [*t ec* kutub-an]]]

      c. [?ayy-u rijaal-in ya-qra?-u [*pro ec* [*vbl ec* kutub-an]]]

(30) a. * ?ayy-a kutub-in *ya-qra?-uuna/ya-qra?-u rijaal-un (=(20a,b))

      b. [?ayy-a kutub-in ya-qra?-u [*pro ec* [rijaal-un *ec vbl*]]]

      c. [?ayy-a kutub-in ya-qra?-uuna [rijaal-un *ec* [*t ec vbl*]]]

Representation (29b) has allosteric *-uuna* in Agr inducing SHAGR in AgrP (= IP) as well as SHAGR in CP. The "inner" subject is raised to Spec-of-AgrP, and further to Spec-of-CP to fulfill functional requirements of allosteric Agreement. Trace and variable meet grammatical principles, ECP in particular. In (29c) we have an expletive *pro* agreeing with third singular default *-u*. Since *pro* must be replaced at LF by the variable due to Full Interpretation, ECP/Minimality will be violated since the variable is not antecedent-governed due to an intervening head C (COMP-trace effect). There is a crucial contrast with (29b), where Agr in C is coindexed with the specifier phrase and therefore does not block antecedent-government. The sentences of (30) are the mirror image of (29). In (30b) expletive *pro* agrees with Agr before the latter head moves to C, and will be replaced by the "inner" subject at LF (indirectly deriving its Case Marking from the extended chain). In contrast, the active plural Agr in (30c) induces SHAGR in IP. To this purpose, the "inner" subject must move to Spec-of-AgrP. The sentence is interrogative with a Wh-element in Spec-of-CP and a Wh-marked empty C still to be filled. Agr-to-C must apply, and since plural Agr is allosteric, SHAGR will be enforced. SHAGR entails coindexing between Spec-of-CP and Agr, and by transitivity, between Spec-of-CP and Spec-of-IP. The result will be a violation of condition C of the Binding Theory, the variable being A-bound within its operator domain.

The relevant Celtic cases (12)–(13), repeated below as (31)–(32), are similarly accounted for with one exception: complementizer particles in Celtic may (sometimes) agree with their specifiers. In fact Breton *a* in (31) or (32) occupies C and agrees with its specifier. Here it is assumed that, just like in the relevant Standard Arabic cases, the verb ends up in the head of CP.

(31) a. ar vugale a lenn (*lenn-ont) levrioù (=(13))

      b. [ar vugale a lenn [*pro ec* [*vbl ec* levrioù]]]

      c. [ar vugale a lennont [*vbl ec* [*t ec* levrioù]]]

(32) a. levrioù a lenn (*lenn-ont) ar vugale (=(12))

      b. [levrioù a lenn [*pro ec* [ar vugale *ec vbl*]]]

c.　[levrioù a lennont [ar vugale *ec* [*t ec vbl*]]]

Representation (31b) is unproblematic. Expletive *pro* agrees with the analytic verb in Agr (synthetic third singular equals the analytic verbal form). The variable must replace *pro* at LF but now, in contrast with the Arabic case discussed immediately above, antecedent-government of the nonpronominal category in Spec-of-IP will not be blocked by Minimality. The reason is that *a* agrees with the operator in its Spec. In contrast, representation (31c) will give rise to ill-formedness: the allosteric plural marking induces SHAGR between it and its specifier but SHAGR is not defined due to the intervening autonomous head category *a*, which enforces its own SHAGR. Consequently we derive a contradiction. Hence the ungrammaticality. By the same argument we derive the grammaticality judgements of (32). Representation (32b) is again unproblematic: the Wh-element in Spec-of-CP is coindexed with its head *a* and the third singular default value of the analytic verb agrees with *pro*, which is formally licensed by it and receives an interpretation at LF by being replaced by the "inner" subject. The situation is crucially different in (32c). Here, we have the allosteric plural verb adjoined to the head of CP. As in the derivation of (31c), a contradiction will be derived: allosteric agreement must apply but can not apply due to the presence of an autonomously agreeing head. We therefore have a principled explanation for the converse patterns of agreement of Arabic and Celtic as exemplified in (29b,c) and (31b,c). Notice that Standard Arabic (30a,b) parallels the agreement pattern of analogous cases of Celtic, as shown by the Breton structures of (32b,c).[14]

5　Concluding Remarks

We have given a unified account of some unexpected agreement asymmetries in different languages that are genetically unrelated but which nevertheless show marked similarities beside some sharp discrepancies in the realm of agreement patterns that set them apart from familiar languages like French, English or Dutch. The agreement account is tentative and part of a program of research that is still in progress. We have argued that the unifying force underlying the differing cases discussed here is "allosteric" Agr, which exerts its influence in other than canonical positions if no intervening head blocks the characteristic specifier-head relation between Agr and its Spec. An open question left for future research is why unrelated VSO languages exhibit similar patterns of agreement that are inhibited in familiar SVO and SOV languages.[15]

Notes
1. Cf. Koopman & Sportiche (1990) for a partly different position.
2. For detailed discussion of the pragmatics involved see Bakir (1980).
3. Cf. Wright (1967), vol. II, sections 24 and 36.
4. Cf. Wright (1967), vol. II, sections 12 and 15ff. For a recent discussion of negation, tense and aspect in generative terms see Aoun (1981).
5. See also Ouhalla (1990), and particularly his reference to Benmamoun (1990), who arrives at the same conclusion.
6. Here we assume the ISH-hypothesis of Koopman & Sportiche (1990). Cf. also Sproat's (1985) related ISVO-proposal for Welsh, adopted below.
7. Cf. Stump (1984) and Hendrick (1988) for extensive discussion and different views.
8. For discussion of various differences see Harlow (1981), McCloskey & Hale (1984), Stump (1984), Sproat (1985), and Hendrick (1988).
9. Cf. McCloskey & Hale (1984) for further discussion.
10. Cf. Harlow (1981) and McCloskey & Hale (1984).
11. See Rizzi's (1991) discussion of the *Wh*-criterion.
12. Cf. Mohammad (1990) for independent discussion of this point, and also Fassi Fehri (1990).
13. Cf. Chomsky (1989) for motivation.
14. Illicit Agreement in VSO-sentences is similarly explained. Allostericity induces SHAGR but there is no Specifier to agree with. Contradiction results.
15. Cf. Kayne (1989), who analyzes English Agreement in terms of number. Note that the incorporation theory of agreement can not work for Arabic (or for Celtic, as we will argue in forthcoming work).

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