Auxiliaries in Serbian/Croatian and English

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1 Overview

Auxiliary verbs (incl. copula *be*) in English show similar properties to their Serbian/Croatian (S/C) counterparts: both have one weak (contracted/enclitic) form and two strong forms (positive/negative):

(1)	*sam*	*jesam*	*nisam* (= be.1SG)	/	*ću*	*hoću*	*neću* (= want.1SG)
	's	*is*	*isn't*	/	*'ll*	*will*	*won't*

In this paper we analyse further similarities between these languages, concerning distributional restrictions on weak forms:
– word order (the weak form surfaces higher in the clause than strong forms)
– the ban on weak forms in certain sentence types (negation, yes-no questions, etc.)

We pursue the idea that English contracted auxiliaries are instances of "second position" syntactic clitics, offering evidence that they instantiate the same basic phenomenon as the clitic auxilaries of S/C. Further, we argue that the English *do*-support phenomenon is a closely related phenomenon. The second part of the paper outlines a unitary analysis of the syntax of the auxiliary system of the two languages, in which the functional head Σ plays a central role.

2 Auxiliaries: weak vs. strong / Serbian/Croatian vs. English

2.1 English *do*-support

With the main exception of positive declaratives, the main verb in English simple finite tenses (past, present) appears with an auxiliary verb (*do*). We assume a uniform analysis which postulates a zero *do* ($\emptyset_{\mathrm{DO}}$) in simple positive declaratives (2a) (Wilder & Ćavar 1994b). This means that English 'simple tenses' are underlyingly periphrastic:

(2) a. *He* [$\emptyset_{\mathrm{DO}}$]-Past *never* [$_{\mathrm{VP}}$ t [$_{\mathrm{VP}}$ *liked such books*]]
b. *He* [*did*]- Past *not* [$_{\mathrm{VP}}$ t [$_{\mathrm{VP}}$ *like such books*]]
c. *He* [*DID*]- Past (*never*) [$_{\mathrm{VP}}$ t [$_{\mathrm{VP}}$ *like such books*]]
d. *He* Past (*never*) [$_{\mathrm{VP}}$ *DID* [$_{\mathrm{VP}}$ *like such books*]]

2.2 Serbian/Croatian periphrastic tenses

The distribution of $\emptyset_{\mathrm{DO}}$ seems to match the distribution of weak forms of finite auxiliaries in Serbian/Croatian (S/C) (3). Contexts where a weak form of finite AUX is impossible (the strong form required) in S/C are also contexts of *do*-support (i.e. $\emptyset_{\mathrm{DO}}$ is prohibited) in English - negative, emphatic assertion, yes-no-question (4)-(6). As well as ordinary declaratives, $\emptyset_{\mathrm{DO}}$ appears in questions in which the main subject is questioned (7). Both contexts where S/C clitic AUX is permitted:

(3) Declaratives
a. *Ja sam kupio knjigu.*
b. *I* $\emptyset_{\mathrm{DO}}$ *bought the book.*

(4) Declaratives-NEG
a. *Ja nisam kupio knjigu.*
b. *I didn't buy the book.*

(5) Declaratives-POS
a. *Ja JESAM kupio knjigu.*
b. *I DID buy the book.*

(6) Yes-No-Qestions
a. *Jesam li ja kupio knjigu?* a'. $*$ *Kupio li sam ja knjigu?*[1]
b. *Did you buy any books?* b'. $*$ $\emptyset_{\mathrm{DO}}$ *you bought any books?*

[1] Since *li* (question marker) is a 2P-clitic it may not occure string initially, hence a verb raises to support it. If the finite verb is itself a clitic AUX, then the next finite verb raises, as in: *Pio je ga.* (drunk-ptc is-CL it-CL 'He has drunk it'). S/C allows a participle to precede *li* + AUX elsewhere: cf. *Pio li je pivo!* (drunk-ptc Q is-CL beer 'Has he drunk beer!'). Hence the ungrammaticality of (6a') indicates that it is the yes-no-question construction itself that prohibits clitic AUX.

(7) *Wh*-subject
a. *Tko je kupio knjigu?* (*je* = weak)
b. *Who* $\emptyset_{DO}$ *bought the book?*

This situation suggests the following hypothesis (cf. also Wilder & Ćavar 1994a,b):

(8) **Hypothesis (i)**
The strong-weak distinction in S/C matches *do*-support in English.

(9)

		weak	pos	neg
S/C:	be.1SG	sam	jesam	nisam
	want.1SG	ću	hoću	neću
English:		$\emptyset_{DO}$	did	didn't

There is one context however in which the distribution of S/C weak auxiliaries and $\emptyset_{DO}$ diverges: namely, non-subject *wh*-questions, where *do*-support is obligatory, but weak AUX is possible:[2]

(10) *Wh*-nonsubj.
a. *What did I buy?* a'. * *What* $\emptyset_{DO}$ *I bought?*
b. *Šta sam ja kupio?*

The hypothesis (8) can only be upheld if an account for this exception is found.

2.3 English contracted auxiliaries

We will argue that a closer match between English and S/C weak forms is found when the syntactic distribution of contracted forms of English finite auxiliaries is examined. The claim we defend has already been proposed by Kaisse (1985:106): "English contractions are 2P 'special clitics', taking 2nd position in S (IP) rather than S' (CP)".

In this section, we show that contracted forms exhibit a restricted distribution that has escaped notice in the recent literature. The restrictions are syntactic in nature, and so cannot be explained by appealing to the phonologically reduced nature of contracted forms. The word order facts in (11) (mentioned in Bresnan (1978) and Kaisse (1985)) indicate that contracted forms are singled out for special treatment in syntax – contractions may not follow aspectual adverbials:

(11) a. *Peter d never read that* (*d* = *would*)
b. * *Peter never d read that*
c. *Mary s often there* (*s* = *is*)
d. * *Mary often s there*

In analysing the data, it is necessary first to distinguish deaccenting from contraction, which yields three realizations of finite auxiliaries: *is* (accented); *is* (deaccented); *s* (contracted):[3]

[2]Note that the issue is: Where is the weak form impossible? If a weak form is possible, it blocks the strong form in neutral contexts. The strong form is then also possible, but only with accent + semantic emphasis, cf. *John* $\emptyset_{DO}$ *came* (neutral) / * *John did come* (neutral) / *John DID come* (emphatic). If the weak form is not possible, then the strong form occurs in neutral cases, but can also be accented: cf.: * *What* $\emptyset_{DO}$ *John bought? / What did John buy* (neutral). / *What DID John buy.* (emphatic).

[3]For some contracted forms there are no plausible phonological rules which could derive them from corresponding full forms; hence they must be listed separately – cf. Kaisse (1985: 42).

(12)

	accent	contraction
IS	+	−
is	−	−
s	−	+
(∗)	+	+

Once these distinctions are made, the claim (13) can be demonstrated in the paradigms (14)-(15):

(13) Contracted AUX must appear to the left of aspectual adverbs (*often*, *never*, etc.)

(14) a. *John IS often in his office.*
b. *John is often in his office.*
c. *John s often in his office.*

(15) a. *John often IS in his office.*
b. *John often is in his office.*
c. ∗ *John often s in his office.*

While the order AUX + Adv is possible for all realizations of AUX (14), the order Adv + AUX is possible for both accented and deaccented realizations, but yields unacceptability for contracted forms (15c). It is standardly assumed that such placement facts must be handled in the syntax. If the contracted AUX is simply a phonological reduction of the deaccented AUX, then the contrast between (14b,c) and (15b,c) is inexplicable.

Hence we assume that there are two syntactically distinct variants for English finite auxiliaries: AUX_{weak} and AUX_{strong}. The assumptions we make about the relation between these syntactic variants and the realizations (12) are: (i) the contracted form only realizes the syntactic element AUX_{weak}; (ii) the syntactic element AUX_{strong} is only realized by deaccented *is* or accented *IS*. Crucially, while the contracted form *cannot* realize AUX_{strong}, the full forms can realize AUX_{weak}.

Now, the placement facts can be accounted for in standard terms, i.e. syntactic movement. The paradigms can be explained if AUX_{weak} must move in overt syntax to an Infl-head above the adverbial (14c vs. 15c), while AUX_{strong} may, but need not raise (14a,b) & (15a,b). This proposal entails that there are two landing-sites for finite auxiliary raising in English (contra Pollock (1989)).

2.4 Serbian/Croatian clitic auxiliaries

The account just proposed is fully analogous to recent proposals concerning the second position (2P) property of clitic AUX in S/C. These enclitic forms are more restricted than full forms in that they must appear to left of IP, following an initial constituent in CP:

(16) a. *Ja sam često čitao knjigu.*
I be-sg-cl often read book
'I have often read a book.'

b. ∗ *Ja često sam čitao knjigu.*

(17) a. *Ja nisam često čitao knjigu.*
I NEG-be-1sg often read book
'I haven't often read a book.'

b. *Ja često nisam čitao knjigu.*

The syntactic account for this paradigm given in Wilder & Ćavar (1994a,b) claims (i) that the clitic AUX must move to some head (e.g. C^0); (ii) the full AUX may but need not move to C^0. The only syntactic difference between English contracted forms and S/C clitic forms then concerns the landing site of movement: C^0 in S/C, a higher Infl-head in English.[4]

If the conjecture that English contracted AUX are special syntactic clitics in the same sense as S/C clitic AUX, then the hypothesis (18) suggests itself:

(18) **Hypothesis (ii)**
S/C clitic AUX matches English contracted AUX in syntactic distribution.

This hypothesis is borne out in full, as can be seen in the paradigm (19)-(24):

(19) Declaratives
a. *Ja sam kupio knjigu.*
b. *I 've bought the book.*

(20) Declaratives-NEG
a. *Ja nisam kupio knjigu.*
b. *I haven't bought the book.* (but also: *I 've not bought the book*)

(21) Declaratives-POS
a. *Ja JESAM kupio knjigu.*
b. *I HAVE bought the book.*

(22) Yes-No-Questions
a. *Jesam li ja kupio knjigu?* a'. $*$ *Kupio li sam ja knjigu?*
b. *Has Pete bought any books?* b'. $*$ *s Pete bought any books?*[5]

(23) Wh-subj:
a. *Tko je kupio knjigu?*
b. *Who s bought the book?*

(24) Wh-nonsubj:
a. *Šta sam ja kupio?*
b. *What s he bought?*

Significantly, the S/C-English divergence with respect to non-subject *wh*-questions disappears (24). But at the same time, an English-internal divergence emerges: in exactly this case, contracted AUX differs from $\emptyset_{DO}$. This fact also calls for an account.

3 Analysis: the role of Σ

The split-Infl hypothesis (Pollock 1989) introduced three functional heads in place of Infl: Tense, Agreement(subject) and Negation. The syntactic analysis we propose

[4] Whether English contracted forms also show the special phonological property of being an enclitic, assumed for S/C forms, remains to be shown.

[5] We believe, contra to Bresnan (1978), that contractions are not possible in yes-no-questions. Thus we analyze cases like *'m I going with you?*, or *'s that so?* as involving deaccenting (and phonological reduction), but not contraction. The deaccented full auxiliaries *is* and *has* do not undergo voicing assimilation with a preceding obstruent, their contracted forms do. Voicing assimilation to [t] in *but* is possible in a conjoined declarative: *A man who was here but 's* [s] *left again...*; but it is impossible in a conjoined yes-no-question: *John was here but 's* [z / $*$ s] *he left again?*

makes use of Pollock's Negation-head, but assumes that this head does not only host sentential negation. Rather, negation is realized in a functional head 'Σ' (Laka 1990), which also hosts other elements functioning semantically as operators over the proposition (IP). As well as negation, Σ can host a positive affirmative element, as in *John DID come / Ivan JE došao*, or the yes-no question operator. However, in unmarked declaratives, Σ is generally absent. The realizations of Σ in English are summarized in (25):

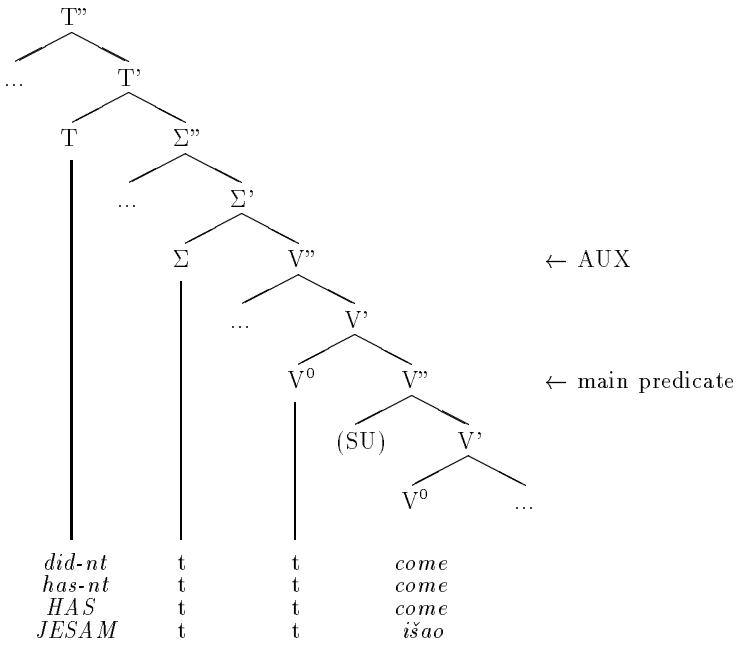
(25)

unmarked declarative:	P	(Σ absent)
negation:	¬P	Σ = *n't*
affirmation:	¬(¬P)	Σ = [+stress]
yes-no-question:	P ∨ ¬P	Σ = Ø (rising intonation contour)

Note that we include the element *n't*, but not *not*, as a possible realization of Negation in Σ – we return to this point below.[6]

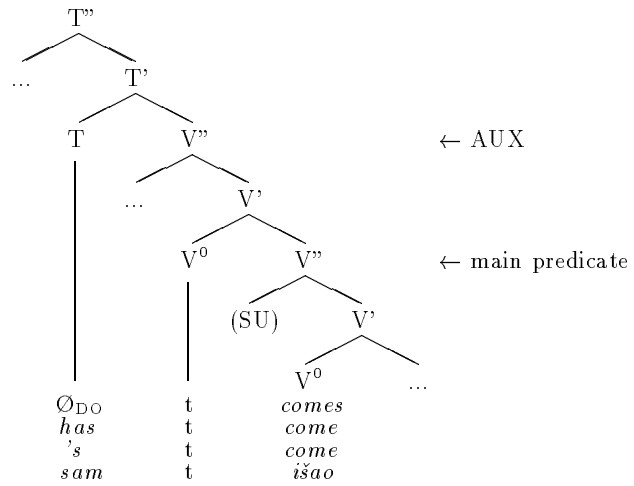
We assume that (i) Σ is dominated by TP and governs VP; (ii) in periphrastic tenses, auxiliary verbs head the VP above the VP of the main verb. The highest verb must raise to T^0 (Pollock's *have-be* raising); when S^0 intervenes, V^0 must first incorporate into S^0 (by the Head Movement Constraint). Hence, Negation, Affirmation, Yes-No-question are analyzed as in (26), neutral declaratives as in (27):

(26) Negation, Affirmation, Yes-No-question:



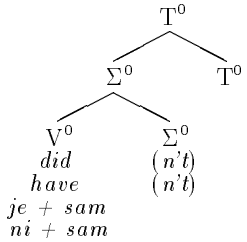
[6] To account for the possiblity of negated yes-no questions (*Didn't John come? – Nije li Ivan došao?*), emphatic negation (*John DIDN'T come – Ivan NIJE došao*) etc., we assume that individual Σ-elements can form complex combinations that are inserted as a single Σ-head.

(27) Neutral Declarative:

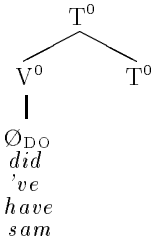


Given these assumptions, head-to-head movement of the highest verb to T^0 (always an auxiliary in English finite clauses) yields different complex heads, depending on whether the clause contains a projection of Σ or not.

(28) a.



b.



As indicated in (26), the contexts requiring strong AUX in S/C and noncontracted AUX in English involve structures with Σ, while simple declaratives (27) lack Σ. The analysis thus provides a syntactic basis for deriving the distribution of AUX_{weak} and AUX_{strong} assumed in section 2.3: the former is a V-T complex lacking Σ, the latter a V-T complex incorporation Σ. We further claim that the same distinction underlies the distribution of clitic forms in S/C and $\emptyset_{\mathrm{DO}}$. Now we can formulate our claim thus: Contracted AUX (Engl.), $\emptyset_{\mathrm{DO}}$ (Engl.), clitic-AUX (S/C) cannot realize a head containing 'Σ^0'.

We turn now to the English-internal asymmetries between contracted AUX and $\emptyset_{\mathrm{DO}}$. These asymmetries can be derived from some minimal and natural additional assumptions specific to the form $\emptyset_{\mathrm{DO}}$. We consider first negation, then interrogatives.

As noted above, we distinguish between *n't*, which is in Σ, and into which the finite AUX incorporates, and *not*. We assume the latter to be phrasal (possibly $\Sigma^{\max}$), more like an adverbial.

Evidence for this distinction comes from the differential behaviour of contracted AUX with respect to sentential negation *n't* and *not*. The form that incorporates into *n't* is always the full form (29a,b). Both contracted AUX and $\emptyset_{\mathrm{DO}}$ are incompatible with *n't* (30a,b). The same is true for S/C – main verbs incorporate into sentential negation *ne-/ni-* (S/C), which realizes Σ^0 governing V (Aux). When the auxiliary incorporates, the resulting word has the distribution of a full form (*nije* etc.).[7]

[7] The distinction between *n't* (head) and *not* (phrase) mirrors two strategies for negation found cross-linguistically: NEG is a head into which finite verbs incorporate in Romance, while it is an adverbial-like element that does not interact with V-movement in Germanic.

(29) English Serbian/Croatian

a. *John has-n't come yet.* a'. *Ivan još ni-je došao.*

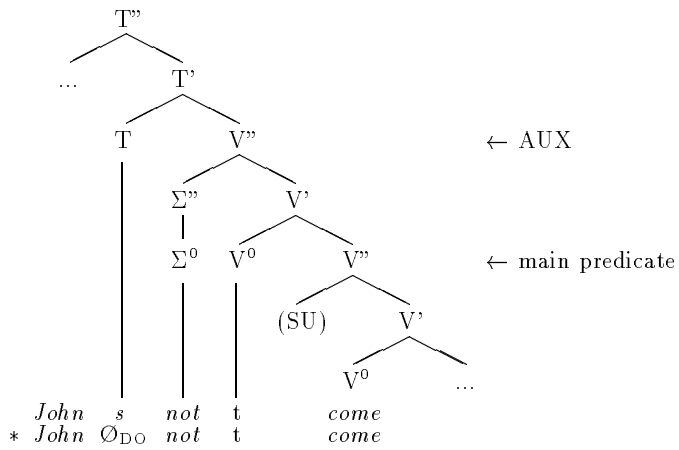
b. *John did-n't come yet.* b'. *Ivan ne-dolazi.*

(30) a. * *John s n't come yet.* a'. * *Ivan je još ne-došao.*

b. * *John* [DO] *n't came yet.*

On the other hand, sentential negation not does not realize Σ^0 governing V; we assume it is generated in Spec,AUX:

(31)



Consider the paradigm (32)-(33). Firstly, the contracted AUX is compatible with not - cf. (32b), contrasted with (30a):

(32) a. *John (definitely) hasn't come yet.* (S = *n't* governs V(Aux))

b. *John s (definitely) not come yet.* (S = *not* does not govern V(Aux))

Secondly, *not* contrasts with *n't* in being able to appear in lower positions in the clause. In (33a) not appears to the right of a lower non-finite auxiliary. This follows from the assumption of a fixed position for Σ^0 (governing the highest VP) vs. a choice among possibly several Spec,VP (AUXP) positions for *not*:

(33) a. *John might have not left yet.*

b. * *John might haven't left yet.* (cf. *John mightn't have left*)

Thirdly, note that the non-finite auxiliary *have* has a contracted form (34a), which is compatible with *n't*, unlike finite contractions - cf. (30a). This is accounted for by the fact that the non-finite contracted AUX is generated lower than Σ^0 and, since it does not raise, it does not incorporate Σ^0:

(34) a. *John might (already) ve left.*

b. *John might n't (yet) ve left.* (contrast (30a))

While contracted AUX and $\emptyset_{DO}$ behave alike with respect to *n't*, notice that there is a further difference between $\emptyset_{DO}$ and contracted AUX which we have not yet discussed. The contracted form is compatible with *not* (35a), but $\emptyset_{DO}$ is not (35b). The presence of *not* forces *do*-support, i.e. the appearance of a strong form of *do*:

(35) a. *John s not come yet.*

b. * *John* $\emptyset_{DO}$ *not came yet.*

c. *John did not come yet.*

The standard account for (35b-c) relies on the assumption that *not* entails the presence of Σ^0 governing VP, i.e. that (35b) is excluded for the same reasons as (30b).[8] Such accounts have problems coping with the contrast between (35a) and (30a). The present account correctly distinguishes (35a) and (30a), but must provide a different account for the ungrammaticality of (35b). We propose that $\emptyset_{\mathrm{DO}}$ has a special property (36):

(36) $\emptyset_{\mathrm{DO}}$ does not tolerate $\Sigma^{\max}$ in its Spec.

Not is generated in Spec,AUXP. In (35b), there is only one such AUXP, headed by $\emptyset_{\mathrm{DO}}$. Hence (35b) falls foul of (36).

Turning now to interrogatives, we find two contrasts. Yes-no-questions must be differentiated with respect to Σ from *wh*-questions; and in English, *wh*-subject questions must be differentiated from nonsubject *wh*-questions.

We assume that yes-no-questions necessarily involve an operator $(\mathrm{P} \vee \neg \mathrm{P})$ that is realized as Σ^0. We further assume that this instantiation of Σ must raise to C^0. These assumptions derive the fact that yes-no-questions must involve full forms in C^0, in both English and S/C:

(37) a. $*$ *s John left yet?* $(\mathrm{V}^0{+}\mathrm{T}^0)$
b. $*$ *Došao li je Ivan?*

(38) a. *Has John left yet?* $(\mathrm{V}^0{+}\mathrm{S}^0{+}\mathrm{T}^0)$
b. *Je li Ivan došao?*

English *wh*-questions share with yes-no questions that T^0 raises to C^0. However, there is an asymmetry between $\emptyset_{\mathrm{DO}}$ and contracted forms. The latter may appear in *wh*-questions, indicating that this clause type need not contain Σ^0. This conclusion is supported by the S/C facts – clitic AUX is possible in *wh*-questions, though not in yes-no-questions:[9]

(39) a. *What s John bought?* $(\mathrm{V}^0{+}\mathrm{T}^0)$
b. *Šta je Ivan kupio?*

(40) a. $*$ *What* $\emptyset_{\mathrm{DO}}$ *John bought?* $(\mathrm{V}^0{+}\mathrm{T}^0)$
b. *What did John buy?*

The asymmetry between $\emptyset_{\mathrm{DO}}$ and other Σ-less forms can be accounted for by assuming (41):

(41) $\emptyset_{\mathrm{DO}}$ does not tolerate WH in its specifier.

In fact, it may be possible to generalize (36) and (41) to a statement like $\emptyset_{\mathrm{DO}}$ does not tolerate any operator-like element in its specifier.[10]

This approach finds further support in the final asymmetry to be accounted for – the fact that *wh*-questions involving questioning of the root subject do not require *do*-support. To account for this case, we adopt an in situ analysis for English *wh*-subjects. In that analysis, the *wh*-subject is not in Spec,CP, but remains in the

[8] *Not* is assumed either to be Σ^0, or a phrase in the Spec of a phonologically unrealized Σ. Σ^0 then intervenes between T and V, preventing V-raising. Cf. Pollock (1989).

[9] This conclusion is also consistent with the fact that *wh*-questions do not involve the alternative semantics of yes-no questions, i.e. the yes-no Σ operator is not required. Of course, *wh*-questions may involve other instantiations of Σ: negation (*What didn't John buy?*), emphatic assertion (*What DID John buy?, Who DID kiss Mary?*).

[10] Recall that noninterrogative fronting triggers *do*-support only when the fronted phrase is downward monotone: *Never did I see such a thing.* Possibly, Σ is involved here too.

canonical subject position in IP. It follows that AUX is not in C^0. This allows us to claim that the *wh*-subject is not in a Spec-head relation with AUX, so that (41) can be satisfied in this type of *wh*-question.[11]

As supporting evidence, consider the adverb-placement facts in (42)-(43). We noted above that contracted AUX must precede aspectual adverbs (*often*, *never*, etc.). With a second class of adverbial, namely, sentential adverbs like *probably*, post-Adv placement of the contracted AUX is possible (42a):[12]

(42) a. *Who* (*probably*) *s* (*just*) *bought the book?*
b. *Who* (*probably*) $\emptyset_{DO}$ (*just*) *bought the book?*

(43) a. *What* * (*probably*) *s* *Peter* (*probably*) (*just*) *bought?*
b. *What* * (*probably*) *did* *Peter* (*probably*) (*just*) *bought?*

If the intervention of an adverb between a phrase XP and a head Y entails that XP is not situated in Spec,YP (as for instance in the theory of Kayne (1994)), then (41) is satisfied in (42b). The adverb cannot intervene between the *wh*-phrase and the specifier of the head C (=Y) occupied by the auxiliary, for independent reasons.

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[11] For various instantiations of this idea, cf. the 'matching projections' proposal of Haider (1989), the Vacuous Movement Hypothesis of Chomsky (1986).

[12] This asymmetry will have a bearing on a more precise analysis of the landing site of the contracted AUX forms, which we do not attempt here.