

How to not complicate a plain escape strategy, and why

A reply to Andrea Moro's (2011) *Clause structure folding* idea¹

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Abstract The evidence for 'clause structure folding' (Moro 2011) is arguably not fully representative and the analysis is not compelling enough for such a powerful tool to be incorporated into the inventory of UG. It will be argued that the '[*wh*] and [*why/how*]' construction is not a speciality of Italian, but a last resort option of VO languages in general. OV languages permit it as well, but they do not require it as a last resort alternative. The construction is what it appears to be, namely a coordination construction with coordination reduction.

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1. How things get complicated and why

A last resort option (1a,b) of VO languages like Italian (or English) for the ineffability dilemma of (2a-c) is Moro's (2011) motivation for devising a grand derivational complication for turning the innocuous recruitment of a coordination construction into the suspected tip of the iceberg of a wh-in-situ core grammar construction (see section 2). But, UG arguably does not bother instantiating this idea, in spite of its ingenuity. The construction (1) is an option for any language (1c), and not merely a last resort for languages like Italian and English.

- (1) a. Who left, *and* why
b. Chi è partito, è perché? Italian
Who has left and why
c. Wer ist weggelaufen, *und* warum? German (OV)
Who has left and why?

VO languages, unlike OV languages, do not provide structural space for in-situ wh-*subjects* (2a) or higher order² adverbials (2b,c). For the latter dilemma, there is a simple way out, namely a bi-sentential coordination with optional coordination reduction (2d,e).³

- (2) a. *It is unclear why *who* left
b. *It is unclear who left *why*
c. *How did he fix it *why* – *Why did he fix it *how*
d. It is unclear [who left] and [why ~~(s)he left~~]
e. How did he fix it, and [why ~~did he fix it~~]⁴

The constraints that rule out (2a,b) are *VO-specific* restrictions and do not hold for OV languages (3). Here are two German examples out of more than several thousand that are easily located by a search engine⁵, and one that is representative for Japanese.

- (3) a. ... *wer es warum* nicht tut
who it why not does
b. ... *warum es wer überhaupt* gemacht hat
why it who at all done has.
c. Dare-ga *naze* soko-ni itta no? Japanese (OV; Saito 1994: 195)
who-nom *why* there-to went Q-prt

The grammar-theoretic details of the OV/VO correlation are explicated in due detail in Haider (2010 sect. 3.4). The gist is this: In a head-final VP, the subject demonstrably remains in its VP-internal position, and in addition, the projection is demonstrably not compact. In an SVO clause structure, however, a VP-internal subject would fail to be in the same domain of the verbal head as the objects, since it precedes the head, but the objects follow. So, a preverbal

² 'Higher order' refers to the kind of denotation category (i.e. semantic type) a phrase is semantically assigned to. 'Higher types' are types that are more complex than the type of an *individual entity*. Szabolcsi and Zwarts (1993) pointed out that the difference - *why* and *how* vs. any other adverbial wh-items like *when* and *where* – is best characterized as one in terms of the semantic type of the wh-operator.

³ There is no escape for the wh-subject (2a), of course, since coordination would not work in the intended fashion, because the subject could not be spared in the first conjunct: *It is unclear why [*e*] left and who left.

⁴ 'Come ammazzare la moglie, e perché' (how to slay the wife, and why) is the title of a book by A. Amurri.

⁵ As for the second candidate of a higher order adverbial, namely 'how': 'wer es wie' (who it how) is more frequent (> 4 x 10⁶) than 'wie es wer' (how it who) (> 7 x 10⁵), but there is no denying that each order is grammatical.

functional head is enlisted and the subject moves to the spec-position. Moreover, a head-initial VP is necessarily compact, that is, it does not provide room for intervening adverbials or scrambled phrases. This is a consequence of the shell-structure of complex head-initial projections, induced by the ‘conflicting’ demands of universal merger-to-the-left and the precedence of the head in head-initial settings.

An in-situ wh-subject is ill-formed in an SVO clause structure because the wh-item is in a spec position. Unavoidably, this turns it into an operator, vacuously binding, though, in this setting. Vacuous binding is not permitted (4a), but as soon as you let the in-situ wh-subject bind something, the deviance diminishes, as has been observed independently (4b,c):

- (4) a. I don’t know *who* would be happy that she/**who* won the prize (Chomsky 1981:236)
 b. When did *who*ⁱ visit *his*^{i/*j} mother? (Hornstein 1995:144; ex. 84d)
 c. When did *who* visit *whom*? (Chomsky 1981: 238; Kayne 1983: 235)

In (4b,c), ‘*who*’ is the operator that binds ‘*his*’ and ‘*whom*’, respectively. The claim that in (4c), ‘*who*’ is the licensing operator for ‘*whom*’ is easy to prove in less constrained languages, namely OV languages like German. First, higher-order wh-elements are incompatible licensors for each other in any language. So, (5a,b) are ungrammatical in German and in any other language, be it OV or VO.⁶ Second, higher order wh-operators must c-command the event situating head, that is, the finite verb. Third, an in-situ wh-element must be licensed by a licensed wh-element (see Haider 2010: 121).

- (5) a.**Warum* hast du es *wie* repariert German
 why have you it how fixed
 b.**Wie* hast du es *warum* repariert?
 how have you it why fixed
 c.**Wie* hast du *warum was* repariert
 how have you why what fixed
 d. *Warum* hast du *was wie* repariert
 why have you what how fixed

The contrast illustrated by (5a-c) vs. (5d) becomes immediately transparent once one acknowledges that each in-situ wh-element is licensed by the preceding licensed wh-element (and not by a *simultaneously* licensing wh-element in the spec-position). (5a,b) show that *why* and *how* cannot license each other. They are mutually incompatible since they range over higher order entities (properties, reasons), rather than type-*e* entities, that is, ranging over individuals (like discourse participants, points of time, or locations). UG does not tolerate the formation of Cartesian products⁷ of higher order sets. But, an ‘intervening’ licensed wh-item, namely ‘*was*’ (what) in (5c) makes the clause grammatical, since it introduces an individual-type sorting key. ‘*Was*’ (what) is licensed by the fronted ‘*warum*’ (why) and in turn it licenses the c-commanded ‘*wie*’ (how). Thus, the clause-mates ‘*warum*’ and ‘*wie*’ are not in an immediate licensing relation, which would be illicit because of the ‘Cartesian product dilemma’

⁶ If your judgement appears to be milder for ‘how’ then make sure that you do not unconsciously apply a repair strategy and interpret it as ‘in what way’. This is a type-*e* ranging operator, ranging over the different ‘ways’. See Reinhart (1998:31) on: ‘Who fainted, when you attacked him/*whom what way*/**how*?’

⁷ The answer for ‘*Who bought what*’ is a subset of the Cartesian product ofn{individuals} x {bought goods}. The answer for ‘*Why did he fix it how*’ is the product of {reasons} x {properties of fixing procedures}.

In sum, in OV languages, the counterparts of wh-subjects, as well as ‚why‘, and ‚how‘ are in principle well-formed in-situ in multiple wh-constructions, as long as the adverbial quantifiers do not depend on each other. In VO languages, however, a subject or a higher order wh-quantifier is generally ill-formed in-situ, for different reasons though. The wh-subject is ill-formed in-situ if it cannot act as an operator. The higher order operators ‚why‘ and ‚how‘ are ill-formed because of their unsatisfied domain requirement. As higher order operators they have to c-command the element that situates the event-variable, that is, the (finite) verb. The structurally admissible in-situ position in VO language is too low, however. So, the only way out of this dilemma is a paraphrase, with one out of the set of the three candidates being placed into the spec-position of the first clause, and one of the two adverbials in the spec position of a coordinated clause (with concomitant coordination reduction). Of course, this option is available for OV-languages, too, but it is not a forced escape strategy, evidently.

With this as background information, the section below presents and briefly evaluates the ‚*clause structure folding*‘ idea (Moro 2011) and points out some crucial shortcomings. These and the alternative viewpoints sketched above strongly contribute to make ‚clause structure folding‘ dispensable. The conclusion will be that there is neither a need nor a way for complicating the general grammar of wh-in-situ constructions by derivational intricacies as presupposed by clause structure folding.

2. Why make things more complicated than they are

Clause structure folding (Moro 2011:406) is assumed to work as follows: First, the two wh-items are fronted to a spec position each in a multiple CP structure (6a). Then this structure is merged with a (potentially covert) *coordinating* head (6b). Subsequently, the lower CP-portion is fronted to the spec of the coordinating head (6c).

- (6) a. ... [wh-phrase₂ C [wh-phrase₁ C [TP ... t₁ ... t₂ ...]]]
 b. ... [__ [(e)] [wh-phrase₂ C [wh-phrase₁ C [TP ... t₁ ... t₂ ...]]]]
 c. ... [[wh-phrase₁ C [TP ... t₁ ... t₂ ...]]_i [(e)] [wh-phrase₂ C t_i]]

Obviously, English does not differ from Italian, or any other VO language, in its ineffability-driven escape strategy that enlists the coordination construction (see 1a) as alternative. So, the very same derivation ought to apply to (1a) in English, and to any other VO language, too. This derivational scenario raises several obvious but non-trivial questions that are in want of satisfactory answers, if the proposal should qualify as empirically and theoretically adequate.

First it remains silent on the VO/OV-dependent differences. It is not a peculiarity of Italian that the coordination construction is used as an escape strategy (see English), and it is not a universal property of wh-in-situ constructions that ‚why‘, ‚how‘, or wh-subjects must not remain in situ (see German, Japanese, and all other OV languages). Obviously, the empirical playground for theorizing has not been set wide enough. Crucial data are missing, namely the contrasting data from OV, and especially the parallel data partitionings from VO.

Second, the derivation produces crossing-dependencies that are bound to crash since they end up in a coordinate-structure-island context. The fronted lower CP becomes the first conjunct, but it contains the trace of the wh-phrase that will end up as the second conjunct (6c). It will not c-command its trace in the first conjunct. This is a clear defect since if this is allowed, it will grossly over-generate:

- (7) a. *[[Who has put e_i on the agenda] and [what_i]]
 b. *[[Who has made e_i leave] and [whom_i]]

The fronting of wh-phrase₂ is an instance of wh-movement, but it has to cross a spec position already occupied by a fronted wh-element, namely wh-phrase₁. Note that this is not a question of multiple specs, since the analysis claims stacked CPs, each with its own spec. The lower CP would block the movement of the wh-element across its spec that is already occupied by a previously fronted wh-item.

Third, if the coordinative head “e” (p. 398, 406) in the proposed structure is a *coordinative* head indeed, it obviously violates the compositional semantics of coordination. In (6c), a sub-part of a clause ends up as coordinated with the very same clause. If generally permitted, the result would obviously be gibberish:

- (8) a. *[This paper_i] and [someone found fault with e_i]
 b. *[With his knife_i] and [John cut the sausage e_i]

The sluicing-type coordination construction, on the other hand, is strictly compositional, of course, since it consists of two coordinated clausal domains. They are separate domains of quantification, too. The structure in (6) would be a single clausal domain, whereas the structure in (9ab) is bi-clausal.

- (9) a. When did everyone leave and [why [~~did everyone leave~~]]?
 b. Wann ist jeder weggegangen und [weshalb [~~ist jeder weggegangen~~]]? German
 when has everyone left and [why [~~has everyone left~~]]
 c. Wann ist jeder weshalb weggegangen?
 when has everyone why left

In (9ab), the domain of the quantifier *jeder* (everyone) does not include the domain of ‘why’, but in (9c), *weshalb* (why) is in its domain. Hence, (9c) allows an unselectively bound reading, but (9b) does not. In other words, an appropriate answer for (9c) is an answer that links a ‘why’ to each individual in the range of the quantifier. This kind of answer that distributes individual reasons of leaving over the range set of the quantifier is not appropriate for (9b). In the tree structure folding approach, (9a,b) would qualify for the same answers as (9c), since the wh-elements or its traces are in c-command domain of the quantifier. This would suffice for a distributive reading, contrary to the facts.

Note, incidentally, that the coordination structure does not only work with ‘and’ but also with ‘but’, with a restriction that is easy to understand, however, as illustrated by (10a) and (10b), respectively.

- (10) a. #Wer ist weggegangen, aber warum? German
 who has left but why
 b. Er/jeder ist weggegangen, aber warum [~~ist er weggegangen~~]?
 he/everyone has left but why

‘But’ requires an assertion in the common ground that provides a contrast for the second conjunct. A question as in (10a) would not provide the required assertion, in distinction to (10b).

(11) a.* Chi ha scritto che cosa?
who has written what
b.* Chi è partito quando
who has left when
c.* Quale ragazza ha dato un bacio a quale ragazzo?
which girl has given a kiss to which boy

(12) a. Mi chiedo chi has espresso (e) cosa (= example (18a) in Moro (2011:399))
me wonders who has expressed (and) what
b.* I wonder who has destroyed and what
c.* Ich frage mich wer zerstört hat, und was German
I wonder myself who destroyed has what
d. Ich frage mich, wer gestanden hat, und was (er gestanden hat)
I wonder myself who confessed has, and what (he confessed has)

The argumentation in the paper is not entirely consistent since on the one hand it opens the grammar's door for (12a) with an *explicit* coordinator as a standard construction, contrasting sharply with English "*Who bought (*and) what*", and on the other hand it re-iterates Calabrese's (1984:67) ban against more than one focused item per clause in Italian without mentioning his paper; see Moro (2011:407). Even if the coordinative "*e*" were endowed with an *abstract* focus absorbing craft, as insinuated on the same page, the problem remains that a sentence with two wh-items is a sentence with two *real* wh-foci, each of which is phonetically marked, in Italian as well as cross-linguistically.

Fifth, Italian would be the only known language with a grammaticalized coordinator ‘and’ that has changed into a kind of hybrid wh- or focus-C°. English, for instance, would merely

use the ordinary ‘*and*’ as the periphrastic escape for a multiple-wh question with ‘why’ or ‘how’. The probability of grammaticalization for such infrequent constructions as multiple wh-constructions is indistinguishable from zero. Unfortunately, the paper does not offer any hint to the etiology of the hypothetical construction in Italian, or independent evidence from a language with the same kind of derivational complications.

Finally, the clause folding hypothesis lacks sufficient support on independent grounds. There is neither independent evidence for the grammaticalization of “*e*” nor is there independent evidence for the other unorthodox ingredient, namely the extraction of the sub-CP. And there is not known any other language that would syntactically behave like Italian is said to behave. Without solid independent evidence, the hypothesis remains hypothetical at best, and not terrifically plausible, it appears.

3. Why not leave things where they belong to

It is enough to acknowledge that Italian is just one of the many languages with a VO clause structure and that this is sufficient for predicting that wh-subjects and higher-order wh-adverbials (and other higher order ranging wh-items)⁸ must not remain in-situ, for various VO-dependent reasons. This is the grammar theoretic essence of the problem; language specific interferences are mere side effects that must not be elevated to the level of general grammatical properties.

Of course, an apparent exception might turn out to be the barely visible edge of a hidden layer of a more general network of grammatical constraints. The suspected coordination construction is just what it is, a coordination construction with the familiar coordination deletion option. It does not seem to qualify as the barely visible edge of the hitherto misunderstood, hidden ‘clause structure folding’ derivation. Once the data are assessed carefully, they are covered by the null-hypothesis, that is, they are indeed what they look like, viz. a coordination construction with coordination reduction.

In Moro (2013:393), this “appealing solution” is discarded because it allegedly fails to account for the difference between sentences like (13a,b,c), that is, the lack of coordination reduction in (13b), in contrast with (13c). This is taken as evidence for the claim that the construction with ‘*è* + wh-item’ could not be reduced to coordination reduction, since this would over-generate:

- (13) a. Mi chiedo [perché sono andati] e [dove sono andati]
 b.*Mi chiedo [perché sono andati] e [dove ~~sono andati~~]

⁸ The ‘was’ in the ‘was-für’-split construction (and analogously for the wat-voor split in Dutch) is a higher order quantifier, ranging over kinds. This accounts for the following contrast (Haider 2010: 124-125):

- a. [*Was für Autos*] hast du wann/wie/warum repariert?
 [what for cars] have you when/how/why fixed
 b. *Was* hast du [*für Autos*] wann /*wie /*warum repariert?
 what have you [for cars] when/how/why fixed

Was in (b) is a bare wh-operator ranging over kinds, that is, a higher-order quantifier. This disqualifies it as a licenser for an in-situ higher order wh-element, namely *how* or *why*. [*Was für Autos*], on the other hand, is interpretable as ranging over a set of individual entities, namely cars, like ‘which cars’; whence it’s licensing compatibility.

c. Mi chiedo [dove sono andati] e [perché (sono andati)]

This is not a compelling reason, however. There may be an independent restriction on coordination deletion that rules out (13b). The argument would be valid only if one could show a case of under-generation, that is, show that there are cases of ‘e + wh’ that could not be reduced to coordination reduction.

The paper does not provide an assessment of these data by showing that (13) is truly representative. But even if we grant that it is, the contrast does not disqualify the coordination account of (13b,c) at all. It is not difficult to devise examples that gear a preference for ‘*why*’ in the second conjunct (compare also the title and the first subtitle of this paper, and their deviant alternative ordering):

- (14) a. *Wo* hast du es gekauft und *warum*? German
 where have you it bought and why
 b.?*Warum* hast du es gekauft und *wo*?
 why have you it bought and where
 c. *Wann* hast du es gekauft und *warum*?
 when have you it bought and why
 d.?*Warum* hast du es gekauft und *wann*?
 why have you it bought and when

German surely does not fold its structure, but nevertheless (14a,c) are preferred over (14b,d). This pattern is not a derivational property; it reflects the preference for ordered semantic type domains: do not specify the super-domain before you have specified the sub-domain. The preference situation in (14) is a cousin of that in (15):

- (15) a. ein ehemaliger konservativer Politiker German
a former conservative politician
 b.? ein konservativer ehemaliger Politiker
a conservative former politician

In terms of syntactic structuring, adnominal adjuncts may be merged freely. The difference is one in terms of the semantic well-formedness. When ‘former’ and ‘politician’ are combined into a semantic unit in (15b), ‘former’ generates a higher type than ‘conservative’ does. Re-opening the lower type for integrating the c-commanding ‘conservative’ is vetoed then.

4. Why not accept what it is?

‘*Clause structure folding*’ would enrich the ‘toolkit’ of UG with a hitherto unknown device, basically for the apparent needs of a single language. The argumentation and the data coverage in the paper under discussion are not compelling enough for accepting this weakening of grammar theory. It would amount to a weakening since it would introduce a powerful derivational tool that is prone to massively over-generate, both in Italian and cross-linguistically. In situations like this, not only the master of Occam pleads for an austere “No-Go” in the absence of any necessity: “*non sunt multiplicanda entia praeter necessitatem.*”

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