Chapter 5

Multiple wh-fronting in a typological setting: What is behind multiple wh-fronting?

Željko Bošković
University of Connecticut

The paper establishes broad typological correlations between multiple wh-fronting (MWF) and other phenomena in an attempt to understand what is behind MWF. In particular, the paper establishes a correlation between MWF and the morphological shape of wh-words, which is argued to be responsible for MWF. MWF languages are also shown to be characterized by a particular status regarding articles: they either lack articles or have affixal articles (the difference is shown to matter for superiority effects). Certain cases of non-wh indefinite interpretations of wh-phrases and the exceptional behavior of D-linked wh-phrases regarding MWF – they are not subject to it – are also discussed and captured (including Hungarian, where D-linked wh-phrases are not exceptional in this respect, which is tied to another exceptional property of Hungarian).

1 What is special about multiple wh-fronting?

The goal of this paper is to shed light on what is behind one particular language type regarding multiple questions. Most languages front one question word/wh-phrase or leave them all in situ in multiple questions. The former type is illustrated by English (1) and the latter by Chinese (2).

(1) What did John give to who?

(2) John gei-le shei shenme? (Chinese)
John give-PFV who what
'What did John give to who?'

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There is another pattern, which is not frequent crosslinguistically: the so-called multiple wh-fronting languages (MWF), which front all wh-phrases in questions. The pattern is illustrated by Serbo-Croatian (SC) examples in (3) (note that SC is an SVO language).[1]

(3) a. Ko šta kupuje? (SC)
who what buys
'Who is buying what?'

b. * Ko kupuje šta?
who buys what

There have been quite a few works on MWF in the generative tradition since the seminal paper by Rudin (1988) (MWF has been discussed less outside of that tradition, but see e.g. Mycock 2007). These works generally focus on examining the structure and the derivation of MWF constructions. However, they do not attempt to understand what is really behind MWF, why some languages employ this strategy.

This paper aims to address that question, but from a broad typological perspective, in particular, by establishing correlations between MWF and other phenomena. Its scope will be limited – I will not go into the derivation and the structure of

[1]There are some highly specific contexts where MWF languages need not front wh-phrases (just like there are contexts where English can employ wh-in-situ). I will generally not be concerned with those exceptional contexts here (apart from D-linking), just with the broad, main pattern. I merely note that, as discussed in Bošković (2002), several of those exceptional contexts involve PF issues, e.g. the case where the fronted wh-phrases would yield a sequence of homophonous elements, like Romanian (i). Bošković (2002) shows that such cases are exceptional only superficially – they still involve MWF in the syntax, with pronunciation of a lower copy of a moved wh-phrase (second *ce* in (i.a)), which is motivated by PF considerations. Thus, the second wh-phrase in (i.a) licenses parasitic gaps (see (ii)), which is a test for movement in overt syntax (compare (iii.a) and (iii.b)).

(i) a. Ce precede ce? (Romanian)
what precedes what

b. * Ce ce precede?
what what precedes

(ii) Ce precede ce fără să influenţeze? (Romanian)
what precedes what without SUBJ.PART influences
'What precedes what without influencing?'

(iii) a. * What precedes what without influencing?

b. What did Mary promote without influencing?

MWF constructions; the goal of the paper is simply to establish, and understand, prerequisites for the MWF pattern, in an effort to understand what is behind this strategy of forming multiple questions. The discussion will be based on the following 18 (typologically diverse) MWF languages: SC, Romanian, Polish, Russian, Bulgarian, Macedonian, Czech, Slovenian, Ukrainian, Yiddish, Lithuanian, Hungarian, Basque, Mohawk, Georgian, Ossetic, Svan, and Latin.[2] Latin will turn out to be particularly useful, since it can be compared with modern Romance languages.

What will be important for our purposes is the notion of indeterminates (the term goes back to Kuroda 1965, who actually took it from traditional Japanese grammars, which use the term "indeterminate words"). In many languages, the same forms that are used for wh-words have a variety of usages, like existentials, universal quantifiers, negative concord/negative polarity items, free choice, depending on the context where they occur (for much relevant discussion, see Haspelmath 1997). They are referred to as indeterminates since their exact quantificational force is not inherently determined – it is determined by the licensing context in which they are found.

Cheng (1991), a predecessor of this work, observes that Bulgarian, Polish, and Hungarian have indeterminate systems. It turns out that all MWF languages from above have a productive indeterminate system, which suggests that the indeterminate system is a prerequisite for MWF. But there is more to it. There are different types of indeterminate systems. I define here a particular type, which I will refer to as the sub-wh system. It is a fully productive system where addition of an inseparable affix to a wh-phrase results in a series of meanings shown in SC (4).

(4) a. ko 'who' (SC)
b. *i*ko 'anyone'
c. *ni*ko 'no one'
d. *ne*ko 'someone'
e. *sva*ko 'everyone'
f. *bilo* ko 'whoever'

[2]The list includes languages I was able to identify as having MWF (and determine for them the additional information that is needed in the discussion below) based on literature surveys (most of them are well-known as MWF languages; for some less-known cases, see Ledgeway 2012 for Latin, Baker 1996 for Mohawk, Gillon & Armoškaitė 2015 for Lithuanian, Erschler 2012 for Ossetic, Erschler 2015 for Georgian and Svan).

There is a morphological subset-superset relationship between the wh/question usage and other usages, as stated in (5) regarding 'who'.

(5) sub-wh system: *who*+X for other pronouns (inseparable, fully productive, order doesn't matter)

What is not a sub-wh system is the situation found in Chinese, where the same form can have different functions, as illustrated by (6), or Japanese, where a particle occurs on each function – in some cases inseparable (namely, existential), in some cases separable – note that *-ka*, which is always separated on the wh-usage in Standard Japanese, need not be separated in Okinawan, as illustrated by (7).

(6) a. Ni xiang mai *shenme* (ne)? (Chinese)
you want buy what Q
'What do you want to buy?'

b. Wo bu xiang mai *shenme*.
I not want buy anything
'I don't want to buy anything.'

c. Wo xiang mai yi-dian *shenme*.
I want buy one-CL something
'I want to buy something.'

(7) a. Taruu-ja *nuu* koota-*ga*. (Okinawan)
Taro-TOP what bought-Q
'What did Taro buy?'

b. Taruu-ja *nuu-ga* koota-ra.
Taro-TOP what-Q bought-RA
'What did Taro buy?' (Kinjo & Oseki 2016)

It should be noted that it has been argued that the Q marker starts with the wh-phrase even in Standard Japanese (just as in Okinawan), see e.g. Hagstrom (1998). This is then a rather different system from SC, where the wh-form is a subset of everything.[3]

English also does not have a sub-wh system since the relevant system is not fully productive in English (compare *some*where, *every*where, *no*where,

[3]Japanese is, however, more similar to SC in the relevant respect than Chinese is, which may not be surprising in light of the discussion below given that Japanese in fact used to be a MWF language (i.e. Old Japanese appears to have been a MWF language; see Aldridge 2009, Dadan 2019).

*any*where with **some*who/*every*who/*no*who, **no*what/*no*when/*no*how), i.e., it is lexicalized (Cheng 1991 suggests that the good cases are lexically incorporated forms, essentially compounds).

Returning to MWF languages, it turns out that all MWF languages have exactly the sub-wh type of indeterminates, which leads me to posit (8) (note that this is a one-way correlation).

(8) If a language has multiple wh-fronting, it has a sub-wh indeterminate system.

This was illustrated above with SC in (4). Additional confirmations of (8) are provided by the MWF languages in Tables 1–4 (the data in Tables 1–7 are from, or based on, Haspelmath 1997; only partial paradigms are given below, and not all series are illustrated – all these languages have additional series; for more complete paradigms, see Haspelmath 1997).[4]

Table 1: Russian indeterminate series

	interrogative	existential	neg-concord	free choice
person	kto	kto-to	ni-kto	kto ugodno
thing	čto	čto-to	ni-čto	čto ugodno
place	gde	gde-to	ni-gde	gde ugodno
time	kogda	kogda-to	ni-kogda	kogda ugodno
manner	kak	kak-to	ni-kak	kak ugodno

Particularly interesting for our purposes is Romance. Latin was clearly a MWF language (see Ledgeway 2012 and Dadan 2019 for extensive discussion) and had a fully productive sub-wh system. The fully productive sub-wh system got lost in

[4]I do not consider German as having a productive sub-wh system since in German only one series, the *irgend*-series (but not the *etwas*- or *n*-series, which are the respective second and fourth examples in (i)), is related to wh-words, as shown by (i) (data from Haspelmath 1997; note, however, that (8) is a *one-way* correlation).

(i) a. *person*: wer, jemand, irgend-wer / irgend-jemand, niemand
b. *thing*: was, etwas, irgend-was / irgend-etwas, nichts
c. *place*: wo, –, irgend-wo, nirgends
d. *time*: wann, –, irgend-wann, nie
e. *manner*: wie, –, irgend-wie, (auf keine Weise)
f. *determiner*: welche, (ein), irgend-ein / irgend-welche, kein

Table 2: Bulgarian indeterminate series

	interrogative	existential	neg-concord	free choice
person	koj	nja-koj	ni-koj	koj to i da e
thing	što	ne-što	ni-što	što to i da e
place	kâde	nja-kâde	ni-kâde	kâde to i da e
time	koga	nja-koga	ni-koga	koga to i da e
manner	kak	nja-kak	ni-kak	kak to i da e

Table 3: Hungarian indeterminate series

	interrogative	existential	neg-concord	free choice
person	ki	vala-ki	sen-ki	akár-ki
thing	mi	vala-mi	sem-mi	akár-mi
place	hol	vala-hol	se-hol	akár-hol
time	mikor	vala-mikor	sem-mikor	akár-mikor
manner	hogy(an)	vala-hogy(an)	se-hogy(an)	akár-hogy(an)

Table 4: Basque indeterminate series

	interro-gative	*bait*-series (non-emphatic)	*i*-series (NPI)	*edo*-series (free choice)	*nahi*-series (free choice)
person	nor	nor-bait	i-nor	edo-nor	nor-nahi
thing	zer	zer-bait	e-zer	edo-zer	zer-nahi
place	non	non-bait	i-non	edo-non	non-nahi
time	noiz	noiz-bait	i-noiz	edo-noiz	noiz-nahi
manner	nola	nola-bait	i-nola	edo-nola	nola-nahi
determiner	zein	–	–	edo-zein	zein-nahi

all modern Romance languages except one: Romanian, which is the only modern Romance language that still has MWF, a strong confirmation of (8). A partial illustration of the Romance situation is given in Tables 5–7.

Table 5: Latin indeterminate series

	interrogative	existential	polarity	free choice
person	quis	ali-quis	quis-quam	qui-vis
thing	quid	ali-quid	quid-quam	quid-vis
place	ubi	ali-cubi	usquam	ubi-vis
time	quando	ali-quando	umquam	–

Table 6: Italian

	interrogative	existential	neg-concord
person	chi	qualcuno	nessuno
thing	che	qualche cosa, qualcosa	niente, nulla
place	dove	in qualche luogo	in nessun luogo
time	quando	qualque volta	(mai)

Table 7: Romanian indeterminate series

	interrogative	existential	free choice	*oare*-series
person	cine	cine-va	ori-cine	oare-cine
thing	ce	ce-va	ori-ce	oare-ce
place	unde	unde-va	ori-unde	oare-unde
time	cînd	cînd-va	ori-cînd	oare-cînd

I conclude therefore that a sub-wh system is a prerequisite for MWF. I will now briefly discuss why that is the case.

The crucial point is that *ko* in (4b) is actually not 'who', i.e. it does not correspond to English *who*. The form is a true indeterminate, which means that it does not have an inherent quantificational force (see below for evidence to this effect). It requires licensing, which also determines its quantificational force (i.e. its exact meaning).

The particles that indeterminates merge with normally do that – they determine the exact quantificational force, and the meaning of the indeterminate in cases like those given in SC (9) as a partial illustration of the relevant SC paradigm.[5]

(9) a. i+*ko* 'anyone' (SC)
b. n+i+*ko* 'no one'

Importantly, in a sub-wh system, the *only* usage on which the indeterminate is not merged with a particle is the wh-usage, which means that we are dealing here with an unlicensed indeterminate. I suggest that this is what requires fronting. The indeterminate is licensed as a wh-phrase by moving to an interrogative projection (which determines its meaning). The movement thus does not occur because of a property of the interrogative head (which is the case in English, where only one wh-phrase fronts because of that), but because of indeterminate licensing – this is why they *all* need to undergo fronting, resulting in MWF.

In short, in the sub-wh system, affixes merged with an indeterminate determine its quantificational force and license the indeterminate. When there is no such affix, the indeterminate is licensed as a wh-phrase by movement to an interrogative projection.

MWF languages do however have certain cases where the wh-phrase itself (so the form that is used in wh-questions) receives a different, non-wh interpretation, like the wh-existential in (10) (see e.g. Izvorski 1998, Bošković 2002, Šimík 2011).

(10) a. Ima ko šta da ti proda. (SC)
has who what that you sells
'There is someone who can sell you something.'
b. * Ima ko da ti proda šta.
has who that you sells what

Importantly, the relevant elements must front here. The fronting does not occur to the interrogative projection, since the relevant clause is simply not interrogative. I suggest that since *ko* and *šta* are not merged with an indefinite particle in these cases, they are licensed as indefinites by moving to a special indefinite licensing position. What is relevant here is languages like Kaqchikel, where the

[5] In these particular cases, the morphology is rather transparent. *I-* also means 'even'. On the connection between 'even' and NPIs, see e.g. Rooth (1985), Haspelmath (1997), Giannakidou (2007), Crnič (2011); *n-* may indicate a connection with negation. At any rate, these details are not important for our purposes.

exact same form functions as interrogative or indefinite, and must be fronted on both functions, with the landing site of the interrogative being higher than the indefinite licensing projection, as discussed in detail in Erlewine (2016). What Kaqchikel shows is that there is a pattern where the indefinite meaning of an indeterminate is licensed by movement to a special projection that licenses this meaning (see Erlewine 2016). The suggestion is that this is precisely what happens in (10) (the movement is not to the interrogative CP projection since the relevant clauses are clearly not interrogative; note that this (i.e. (10)) can also be taken to confirm that the relevant elements are not inherently wh-phrases but bare indeterminates).[6]

It is worth noting that a number of Australian languages have the same form for wh-phrases and indefinites but while the morphology is the same the syntax is not: as wh-phrases they must front, as indefinites they stay in situ (these languages cannot be checked for MWF since they do not allow multiple questions in the first place, see Cheng 1991 for relevant discussion of these languages).

(11) Martuthunira

a. ngana nganhu wartirra nyina-nguru karra-ngka
who that.NOM woman sit-PRS scrub-LOC
muyinu-npi-rra?
hidden-INCH-CTEMP
'Who is that woman hiding in the scrub?'

b. ngayu nyina-lha martama-l.yarra palykura-la
1SG.NOM sit-PRS press.on-CTEMP groundsheet-LOC
nganangu-la.
someone.GEN-LOC
'I sat down on someone's groundsheet, holding it down.' (Dench 1987)

(12) Panyjima

a. ngatha ngananhalu nhantha-nnguli-nha.
1SG.NOM something.INS bit-PASS-PST
'I was bitten by something.'

[6]The movement strategy just discussed and the affixation strategy for licensing indefinites can be combined, though this option is slightly disfavored, possibly due to a parallelism for indefinite licensing being favored.

(i) ? Ima ko da ti proda nešto. (SC)
has who that you sells something
'There is someone who can sell you something.'

b. ngananha-ma-rna nyinta ngunhalku?
what-CAUS-PST 2SG.NOM that.ACC
'What have you done to him?' (Dench 1981)

There is a parallel situation with MWF languages. In particular, there are similar wh-indefinites in Slavic MWF languages, as illustrated by Russian (13) (see e.g. Zanon 2022, Hengeveld et al. 2023).

(13) Možet, kto prixodil. (Russian)
maybe who came
'Maybe someone came.' (Hengeveld et al. 2023)

This usage is very restricted in Slavic; in SC even more so than in Russian – (13) is in fact unacceptable in SC; regarding Russian, see especially Zanon (2022), who argues that the relevant elements are licensed by a semantically motivated and constrained null operator, which essentially plays the role of the licensing affixes discussed above hence this kind of analysis of the usage in question can be adjusted to the system developed here. Alternatively, it is possible that an indeterminate that does not have a licensing particle attached and does not move to an indeterminate-licensing projection or has a linking index (see the discussion right below) is interpreted by a default rule for unlicensed indeterminates, which would apply in the relevant contexts in the languages that allow this usage (they also differ regarding such contexts), as a simple indefinite. In this respect, it is worth noting that such indefinites cannot occur in wh-questions (see e.g. Zanon 2022 and Hengeveld et al. 2023), which can be taken to confirm the default nature of the licensing in question – it is available only if another way is not available.[7]

Interestingly, Zanon (2022) and Hengeveld et al. (2023) observe that these wh-indefinites cannot be focused. What is important here is that real MWF/wh-fronting in Slavic has been analyzed as focus-movement (e.g. Bošković 2002, see also Stepanov 1998 for Russian as well as the discussion below), i.e. it is essentially focusing. It then makes sense that if the relevant element is focused it would be interpreted as a wh, not a non-wh (i.e. indefinite), hence the non-wh-indefinite usage does not allow focalization. Hengeveld et al. (2023) actually observe that the non-focusing requirement is not general – it does not hold in Dutch. Given the current discussion, Dutch-like exceptions should not be possible in MWF languages.

[7]Note that these indefinites are different from those in wh-existentials like (10) – e.g. Ksenia Zanon (p.c.) notes that the former cannot be coordinated, see Zanon (2022), while the latter can be.

A different (and independent) exception to MWF concerns D-linked wh-phrases, which need not undergo fronting, as illustrated below by SC (14). (Note, however, that this is not the case in all MWF languages; they must front in Hungarian, which is discussed in Section 2.)[8]

(14) Ko kupuje koju knjigu? (SC)
who buys which book
'Who is buying which book?'

Two issues are relevant here. First, *koju* is not an indeterminate but a wh-specific form (this may not be a general situation though). Second, as briefly noted above, Bošković (2002) argues that MWF is actually movement to a focus projection, this means that the relevant licensing takes place in the Spec of a focus-licensing head; this by itself is not surprising – focus/interrogativity connection has often been noted.[9] Furthermore, Bošković (2002) observes that D-linking is very different from focus. With D-linked wh-phrases the range of felicitous answers is restricted by a set of objects that is familiar to the speaker and the hearer as a result of it being referred to/salient in the context. In other words, the range

[8]It may be worth noting here that D-linked wh-phrases more generally can be special, and subject to ill-understood language variation. Thus, there are languages that disallow multiple questions, e.g. Hong Kong Sign Language (HKSL), Italian, and Mandinka. ((i)–(iv) are taken from Gan 2022).

(i) * WHO BUY WHAT? (HKSL)

(ii) * Chi ha scritto che cosa? (Italian)
who has written what

Gan (2022) shows that D-linking improves multiple questions in HKSL and Mandinka, but not in Italian (it is not out of question that there is some connection here with the SC vs. Hungarian difference regarding D-linked MWF questions).

(iii) STUDENT WHO BUY COMPUTER BUY-WHICH? (HKSL)
'Which student bought which book?'

(iv) * Quale studente comprerà quale libro? (Italian)
which student will-buy which book

[9]I assume that as a result of this connection, indeterminates can still be licensed as interrogative in such a projection. (Possibly, being in such a projection would enable them to undergo unselective binding with interrogative C in spite of the issue noted in Section 2.1 (i.e. without a null operator, the intuition being that it is not needed in this case since the relevant element is located in an operator, in fact the right operator, position—SpecFocP), which would license their interrogative interpretation.)

of reference of D-linked wh-phrases is discourse-given. Due to their discourse givenness, such wh-phrases are not focused, hence they are not subject to focus movement. (One wh-phrase always must front for clausal typing as discussed in Cheng 1991 so when only a D-linked wh-phrase is present it fronts but Bošković 2002 shows that the landing site is different; for special behavior of D-linked wh-phrases regarding MWF see also Diesing 2003 on Yiddish, which disallows MWF with D-linked wh-phrases.)

Regarding the interpretation of D-linked wh-phrases, Enç (2003) proposes that specific arguments have a linking index ℓ which identifies the set of individuals of which the argument is a member (i.e. it gives the set which that argument must belong to). Non-specific arguments have no such index. Shields (2008) extends this to wh-phrases: D-linked wh-phrases are specific and therefore have a set-denoting (linking) index, which non-D-linking wh-phrases do not have. The linking index points to the set of entities in the discourse that a specific expression is required to be a member of.

Indeterminate pronouns are normally non-specific, D-linked ones (i.e. D-linked wh-phrases) are not. The interpretation of the latter is essentially determined by their semantics, no further licensing is needed (essentially, an indeterminate with a linking index is interpreted as D-linked – the linking index points to the set of entities in the discourse that the relevant element is required to be a member of). It is also possible that the linking index allows D-linked wh-phrases to undergo unselective binding by interrogative C and that they are licensed in that way (see Pesetsky 1987 on unselective binding of D-linked wh-phrases; see also Section 2).[10]

In conclusion, this section has established a correlation between MWF and another phenomenon. In particular, MWF languages have been shown to have a sub-wh indeterminate systems, which forces MWF (except with D-linked wh-phrases).

[10]There is an alternative account. A number of authors (e.g. Belletti 2004, Lacerda 2020) have argued for several languages that they have a low topic projection. It is possible that D-linked wh-phrases are licensed in a low topic-like projection (see Grohmann 2006 for D-linking as topichood). On this analysis, the D-linked wh-phrase in (14) would not actually be in situ (SC and Hungarian could then differ here regarding topic movement; see, however, below). It is worth noting here that (i) is also acceptable. Bošković (2002), however, shows that the D-linked wh-phrase in such cases is lower than the second wh-phrase in examples like (3a), i.e. it is not the case that the D-linked wh-phrase simply optionally undergoes movement that the second wh-phrase must undergo in (3) (examples like (i), i.e. optional fronting, is actually not allowed in all MWF languages, see Bošković 2002, Pesetsky 1987, Wachowicz 1974).

(i) Ko koju knjigu kupuje? (SC)
who which book buys
'Who is buying which book?'

2 Multiple wh-fronting and articles

2.1 Another generalization

I will now show that there is another property that MWF languages have in common, which is in principle independent of the one presented in Section 1 (in the sense that if one of the generalizations in questions turns out not to be correct the other one would not necessarily be affected).[11] In particular, they all either lack definite articles or have affixal definite articles (15). The relevant language cut is given in (16).[12]

[11]But see the generalization regarding indeterminates themselves in Oda (2022) that would actually relate (8) and (15). Oda also provides an alternative deduction of (8) based on my earlier version of this generalization given in Bošković (2020) where the prerequisite for MWF was a broader indeterminate system than the sub wh-system.

[12]For most of the languages listed in (16b), their affixal status is well-known. For arguments that Hungarian definite article is affixal (more precisely, a prefix), see MacWhinney (1976), Oda (2022), and Lewis (2024). MacWhinney observes that it undergoes a morphophonemic alternation that is typical of affixes, while Oda and Lewis observe typological generalizations where Hungarian patterns with languages with affixal articles (languages with affixal articles actually pattern with languages without articles regarding those generalizations). Regarding the affixal status of the definite article in Yiddish, which might be the least discussed case here, see Oda (2022). To mention some relevant arguments, Talić (2017) and Oda (2022) observe that languages with affixal definite articles allow article omission in contexts where such omission is not possible in free-standing article languages like English. Oda notes that this is especially the case in PPs, where due to article omission a bare noun can even receive a definite interpretation in (some) affixal article languages, which is never possible in languages with non-affixal definite articles, where a definite article is required for definite interpretation (see Bošković 2016; Oda argues that in the relevant cases the preposition essentially functions as the definite article). Thus, Zwicky (1984: 119) observes regarding (i.b): "The phrase *in gloz* in 'in the glass' is a typical example. The noun *gloz* in this expression is understood definitely, and can even be anaphoric."

(i) a. lebn tir (Yiddish)
near door
'near the door'

b. in gloz = in the glass (Zwicky 1984)

Bošković (2016) also notes that, for the purposes of Bošković's NP/DP generalizations (see below for some relevant discussion), definite articles have a form distinct from demonstratives. Definite articles in Yiddish have the same form as demonstratives, with stress distinguishing them. Margolis (2011: 122) in fact states that: "this/these" is identical to the definite article with added stress. Essentially following Oda (2022), I thus consider Yiddish to be an affixal article language, the definite article being an affixal, hence unstressed, version of the demonstrative (there may be a change under way regarding the status of the relevant element where dialectal differences may also be relevant; not all dialects of Yiddish in fact have MWF, see Diesing 2003).

(15) MWF languages either lack articles or have affixal definite articles.

(16) a. No articles: SC, Polish, Russian, Czech, Slovenian, Ukrainian, Mohawk, Latin, Georgian, Lithuanian, Ossetic, Swan
b. Affixal articles: Romanian, Bulgarian, Macedonian, Basque, Hungarian, Yiddish

Turning to the deduction of (15), in a series of works (e.g. Bošković 2012), based on a number of syntactic and semantic typological generalizations, where languages with and without definite articles consistently differ regarding a number of syntactic and semantic phenomena, I argued that languages without definite articles do not project DP (i.e., there are no null definite articles in such languages).

Talić (2017) argues for a refinement of the NP/DP language distinction; she shows that in many respects languages with affixal definite articles behave like a separate type (see also Oda 2022, Lewis 2024), in that they sometimes behave like languages with articles and sometimes like those without articles.[13]

In Bošković (2020) I suggested an implementation of this observation for the affixal article languages that have MWF: there is D in such languages, but there is no DP. The affixal article is base-generated adjoined to N (more precisely, its host). It should be noted that there is nothing strange about this theoretically: Adjunction through movement can involve either phrasal or head adjunction, the same should hold for adjunction through base-generation (for much relevant discussion regarding definite articles, see also Oda 2022; regarding indefinite articles, see Wang 2019).

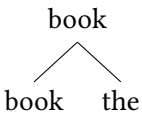

Figure 1: Noun-article base-generation

Recall now that in a sub wh-system, only on the wh-usage the indeterminate does not occur with a licensing particle. I suggest then that, in principle, such indeterminates can still be licensed at a distance *in situ*, with a null operator in SpecDP that is unselectively bound by interrogative C. This is not possible in MWF languages due to the lack of a DP projection that would be capable of such

[13]Below, for ease of exposition I will simply use the term (affixal) article, though what matters here (and what matters for Bošković's NP/DP generalizations) is definite articles only.

licensing. The only way to license the indeterminate on the wh-usage is then to front it to an interrogative position.[14]

A confluence of independent factors, namely the sub wh-system and a particular status regarding articles, is what is behind MWF: MWF languages have a sub-wh indeterminate system, and either lack articles or have affixal articles, which are the typological findings of this paper.

Regarding the relevance of the latter property, in languages without articles and languages with affixal articles the possibility of wh-licensing *in situ* by interrogative C through unselective binding is blocked because such licensing is done through a null operator in SpecDP (except with D-linked wh-phrases), which is absent in languages without articles and languages with affixal articles (in the former, because DP itself is lacking, and in the latter because the affixal article is base-generated adjoined to N, which means that in such languages there is D, but there is still no DP, hence no null operator in SpecDP).

2.2 Superiority variation regarding basic Superiority effects

I turn now to a case of variation within MWF languages which will also shed light on the exceptional status of Hungarian regarding D-linked wh-phrases, noted in Section 1. Already Rudin (1988) observed that MWF languages differ regarding whether they show ordering, i.e. Superiority, effects with MWF. Regarding basic cases like those shown in (17)–(18), SC does not show them, while Bulgarian does show them.

(17) a. Koj kakvo e kupil? (Bulgarian)
who what is bought

b. * Kakvo koj e kupil?
what who is bought

(Intended:) 'Who bought what?'

(18) a. Ko šta kupuje? (SC)
who what buys

b. Šta ko kupuje?
what who buys

'Who is buying what?'

A survey of the literature shows the following language cut regarding Superiority effects in basic cases of this sort.

[14] As suggested above, D-linked wh-phrases may be able to undergo unselective binding even in the absence of DP for independent reasons, namely, due to the presence of the linking index.

(19) a. No Superiority effects: SC, Polish, Czech, Russian, Slovenian, Ukrainian, Mohawk, Lithuanian, Georgian, Ossetic, Svan, Hungarian
b. Superiority effects: Romanian, Bulgarian, Macedonian, Basque, Yiddish

It turns out that the cut is not arbitrary – there is a correlation with (the type of) articles. Putting Hungarian aside (taking Hungarian into consideration we would have a one-way correlation in (21), which was actually noted in Bošković 2008), we have (20).

(20) MWF languages without articles do not show basic Superiority effects, those with affixal articles do.

(21) MWF languages without articles do not show basic Superiority effects.

Below, I will briefly outline a deduction of (20) that will also accommodate the Hungarian exception (given the affixal status of the Hungarian definite article, see fn. 12), tying it to another Hungarian exception, namely the exceptional behavior of Hungarian regarding D-linking.

Bošković (2002) argues that Superiority effects arise with MWF to SpecCP (English-style wh-movement), not with MWF to a lower position, which means that SC MWF targets a lower position than Bulgarian MWF (see Bošković 2002 for evidence to this effect). Now, if Superiority is taken to be a sign of true, English-style wh-movement, this can be generalized in such a way that languages with articles (non-affixal or affixal) must have true English-style wh-movement to SpecCP when fronting wh-phrases. Bošković (2008) in fact suggests that the D-feature is crucially involved in movement to SpecCP. Affixal article languages still have the D-feature, which means that they have wh-movement to SpecCP, which is Superiority inducing. This then captures (20). But what about Hungarian?

Superiority as a test for wh-movement is confirmed by single-pair (SP)/pair-list (PL) answers. Bošković (2001, 2002) shows that overt wh-movement languages require a PL answer for examples like (22). (22) cannot be felicitously asked in the following situation: John is in a store and sees somebody buying an article of clothing, but does not see who it is and does not see exactly what the person is buying. He goes to the sales clerk and asks (22).

(22) Who bought what?

Whereas German patterns with English, wh-in-situ languages Japanese, Hindi, and Chinese allow SP answers in such questions (see Bošković 2001). Importantly, French allows SP answers, but only with in-situ questions like (23a), not (23b).

(23) a. Il a donné quoi à qui? (French)
he has given what to who
b. Qu' a-t-il donné à qui?
what has-he given to who
'What did he give to who?'

Based on this, Bošković (2001, 2002) argues that the availability of SP answers depends on the possibility of not moving any wh-phrase to SpecCP overtly (see Bošković 2001 for an account of this generalization).

Turning to MWF languages, SC allows SP answers, while Bulgarian does not, which confirms that SC MWF lands in a lower position than Bulgarian MWF (see Bošković 2007 and references therein for additional languages confirming this).

As noted above, Bošković (2002) argues that MWF involves focus. Now, Bošković (1999) argues that movement-attracting heads can differ regarding the specification of the movement-attracting feature. They can be specified to attract one element with the relevant feature, call it F, or all elements with the F feature. English interrogative C is an attract 1-F head – it attracts one (in particular, the highest) element with the wh-feature. In SC, wh-phrases undergo focus movement; the relevant head has the specification Attract All-focus. Bulgarian is a combination of English and SC: It has single-fronting wh-movement as in English (Attract 1-wh) and MWF for focus (Attract All-focus, see Bošković 1999 and fn. 16). Importantly, from this perspective, Superiority is not a diagnostic of wh-movement, but single fronting.[15] In this respect, Bošković (2002) shows that there are selective Superiority effects in Bulgarian. Only the first wh-phrase, which is the only wh-phrase that undergoes wh-movement, is subject to Superiority effects, other wh-phrases are not. Thus, the indirect object wh-phrase must precede the direct object wh-phrase in (24) (because it is higher than the object

[15]Given the economy-of-derivation condition that every requirement be satisfied through the shortest movement possible, Attract 1-F heads will always attract the highest phrase with the relevant feature: thus, in (i), the relevant formal inadequacy of the interrogative C is checked through a shorter movement in (i.a) than in (i.b) (cf. the pre-wh-movement structure in (i.c)).

(i) a. Who$_i$ did Mary tell t$_i$ to buy the book?
b. * What$_i$ did Mary tell who to buy t$_i$?
c. Mary tell who to buy what

With Attract All-F heads, like the SC focus-licensing head, all relevant elements must move: Regardless of the order of movement, the same number of nodes are crossed with such movement, hence the order of movement of wh-phrases is free (see Bošković 1999 for a more detailed discussion).

wh-phrase before wh-fronting) but not in (25), where a subject wh-phrase, which is higher than both indirect and direct object wh-phrase before wh-fronting, is present.[16]

(24) a. Kogo kakvo e pital Ivan? (Bulgarian)
whom what is asked Ivan
b. ?* Kakvo kogo e pital Ivan?
what whom is asked Ivan
'Who did Ivan ask what?'

(25) a. Koj kogo kakvo e pital? (Bulgarian)
who whom what is asked
b. Koj kakvo kogo e pital?
who what whom is asked
'Who asked who what?'

All this raises a question: Is there a MWF language where D-linked wh-phrases also must front? That would be a true MWF counterpart of English, with an Attract All-wh specification (note that Attract All-wh affects D-linked wh-phrases, in contrast to Attract All-focus). As noted above, and as discussed in Bošković (2007) and É. Kiss (2002), both D-linked and non-D-linked wh-phrases must move in Hungarian. This is illustrated by (26)–(27).

(26) a. * Ki irt mit? (Hungarian)
who wrote what
b. Ki mit irt?
who what wrote
c. Mit ki irt?
what who wrote
(Intended:) 'Who wrote what?' (Bošković 2007)

[16]Note that, as discussed in Bošković (1999), it is the same head, interrogative C, that has the relevant properties (Attract 1-wh, Attract All-focus) in Bulgarian. Given that the first wh-phrase that moves to SpecCP automatically satisfies the Attract 1-wh requirement (see Bošković 1999), the highest wh-phrase must move first, then the order of movement does not matter, since Attract All-focus does not care about the order of movement, as noted in fn. 15. (Note that, as standardly assumed, the order of fronted wh-phrases reflects the order of their movement, see Rudin (1988), Richards (2001) for different implementations of this, i.e. the wh-phrase that is first in the linear order is the one that moves first, hence the highest wh-phrase must move first when Superiority is in effect.)

(27) a. * Ki irta melyik levelet? (Hungarian)
who wrote which letter
b. Ki melyik levelet irta?
who which letter wrote
c. Melyik levelet ki irta?
which letter who wrote
(Intended:) 'Who wrote which letter?' (Bošković 2007)

Importantly, Hungarian MWF questions also disallow SP answers (see e.g. Surányi 2005) and do not show Superiority effects (see (26)), which is exactly the behavior expected of a true MWF counterpart of English (there are no Superiority effects since we are dealing only with an Attract-All fronting and SP answers are disallowed because the fronting is to SpecCP).[17] What appeared to be an exceptional behavior of Hungarian regarding Superiority and D-linking is thus explained, in fact in a uniform manner.

At any rate, the discussion from Section 2 is summarized below in table form (where the left column gives the relevant language types – there are two types for affixal article languages, depending on whether D-linked wh-phrases are also subject to MWF).

Table 8: Summary

	MWF	Superiority with MWF	SP with wh-fronting
Free-standing article	*	N/A	*
Affixal article		Yes	*
Affixal article + D-linking MWF		No	*
No article		No	

3 Conclusion

The paper has established correlations between MWF and other phenomena, in an attempt to understand what is behind MWF. In particular, MWF languages

[17] Horváth (1998), Puskás (2000), Lipták (2001), and É. Kiss (2002) suggest that the wh-phrase that is closest to the verb in Hungarian MWF questions undergoes focus-movement, other wh-phrases undergo movement that non-wh-quantifiers undergo, but see Surányi (2005) for arguments against this position.

have been shown to have a sub-wh indeterminate system, which was suggested to force MWF. In such a system, an inseparable affix is attached to the indeterminate, with the exact quantificational force of the indeterminate determined by the affix that merges with it. What is traditionally considered to be wh-phrases in the sub-wh indeterminate system are not really wh-phrases but bare indeterminates; they are not licensed *in situ* because they are bare – no licensing affix is attached to them – hence they must front to a position in the left periphery to get licensed, which in turn determines their interpretation. This yields MWF.

MWF languages are also characterized by a particular status regarding articles – they either lack articles or have affixal articles. It was argued that in these language types the possibility of wh-licensing *in situ* by interrogative C through unselective binding is blocked because such licensing is done through a null operator in SpecDP, which is absent in languages without articles and languages with affixal articles for a principled reason. The distinction between the lack of articles and affixal articles in MWF languages was, however, shown to have an effect on the presence/absence of Superiority effects. The exceptional behavior of D-linked wh-phrases regarding MWF (they don't need to undergo it) was also captured (including the Hungarian pattern, where D-linked wh-phrases are not exceptional in this respect – they are subject to MWF). Certain cases of non-wh indefinite interpretations of wh-phrases were also discussed.

All in all, the paper has established the following generalizations regarding MWF, where Hungarian was shown to be exceptional regarding (28c) but for a principled reason, which was tied to its exceptional behavior regarding D-linking; the reader should thus bear in mind that the way (28c) is deduced in the paper does leave room for principled exceptions.

(28) a. If a language has multiple wh-fronting, it has a sub-wh indeterminate system.
b. MWF languages either lack articles or have affixal definite articles.
c. MWF languages without articles do not show basic Superiority effects, those with affixal articles do.

At any rate, the main typological finding of this paper is that a confluence of independent factors, namely the sub-wh indeterminate system and a particular status regarding articles, is what is behind MWF.

Abbreviations

1	first person	PART	particle
2	second person	PASS	passive
ACC	accusative	PFV	perfective
CAUS	causative	PL	pair-list
CL	classifier	PRS	present
CTEMP	contemporaneous relative	PST	past
GEN	genitive	Q	question particle
HKSL	Hong Kong Sign Language	SC	Serbo-Croatian
INCH	inchoative	SG	singular
INS	instrumental	SP	single-pair
LOC	locative	SUBJ	subjunctive
NOM	nominative	TOP	topic
MWF	multiple wh-fronting		

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