On Unvalued Uninterpretable Features

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Chomsky (2000, 2001) argues that in addition to the semantically based interpretable/ unintepretable distinction, established in Chomsky (1995), we need a valued/unvalued distinction, where some features are fully valued lexically, while others receive their value during the derivation. Consider Serbo-Croatian (1)-(3) (*kola* is a pluralia tantum N).

(1) Zelena kola su kupljena.
green.fem car.fem are bought.fem
'The green car was bought.'

(2) Zeleno auto je kupljeno.
green.neut car.neut is bought.neut

(3) Zeleni automobil je kupljen.
green.masc car.masc is bought.masc (SC)

The gender of the adjective and the participle depends on the gender of the noun. *Green* can be feminine, neuter, or masculine; which gender it has depends on the noun it modifies. As Pesetsky & Torrego (2007) (PT) note, the dependence of the gender value of adjectives and participles on the syntactic context in which they occur can be easily captured if they are lexically unvalued for gender: they receive their gender value after undergoing agreement with a noun that already has a valued gender. In contrast to the adjective/participle in (1)-(3), nouns like *kola, auto*, and *automobil* have a fixed gender specification: *kola* is always feminine, *auto* neuter, and *automobil* masculine. The most straightforward way of capturing this is to assume nominal gender is lexically valued; in contrast to adjectives/participles, nouns do not receive their gender value during syntactic derivation, hence their gender value does not depend on their syntactic context.[1]

[1]Recall *kola* in (1) is a pluralia tantum N; its number is plural but it is interpreted as singular. PT note such lexical quirks also call for full lexical specification of ϕ-features of nouns. As noted by PT, there are no pluralia tantum verbs or adjectives, which is not surprising if their ϕ-features are lexically unvalued: such treatment does not leave room for lexical quirks like the one exhibited by the number of *kola* in (1).

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Chomsky (2001) ties valuation and interpretability, arguing all and only uninterpretable features (*u*Fs) are unvalued (4). Given Full Interpretation, *u*Fs, which semantics cannot deal with, must be eliminated before reaching semantics. This is done through their deletion, a prerequisite for which is valuation (5).

(4) A feature F is uninterpretable iff F is unvalued.

(5) Only valued uninterpretable features can be deleted.

In this paper I provide additional evidence for PT's claim that (4) should be abandoned, also showing that allowing valued *u*Fs increases empirical coverage and considerably simplifies feature checking. I develop a valuation-driven system which differs from previous systems (like Chomsky 2001 and PT) in that it allows one instance of uninterpretable features, namely valued uninterpretable features,not to undergo feature checking and does not require uninterpretable features in general to undergo feature checking with interpretable features. Evidence for the current system comes from gender and case licensing.

1. Gender as an Unvalued Uninterpretable Feature

SC gender is quite clearly grammatical/arbitrary--it depends on the declension class a noun belongs to. In other words, it is a grammatical feature without semantic import. Note, e.g., that the fact that 'table' is feminine in French and masculine in SC doesn't lead to a difference in the interpretation of the noun in these languages. The same holds for the three words for 'car' in (1)-(3),which have different gender that doesn't affect their interpretation. Given the above discussion, (1)-(3) then provide evidence for the existence of valued *u*Fs (contra Chomsky 2001):the gender of SC nouns is valued and unintepretable.

However, there have been claims that grammatical gender is not semantically uninterpretable. Thus, PT suggest grammatical gender belongs to Domain D (see Chomsky 1981), "an essentially syntactic level of representation that connects to real semantics but is not itself part of the mapping between linguistic and real world-entities. In Domain D, it may be as much a fact that 'table' is feminine and book 'masculine' as it is that 'table' is singular and books 'plural'-despite the fact that the former classification appears to be irrelevant outside language, while the latter is meaningfull in more general sense." This kind of approach really strips the uninterpretable/interpretable distinction of any meaning (especially in the absence of a principled criterion for what belongs to domain D, which in this case simply seems to be a mechanism for hiding a problem for the interpretable/ uininterpretable distinction). It would obviously be preferable to keep Chomsky's (1995) semantic criterion for the uninterpretable/interpretable distinction, avoiding stipulating that some features are connected to semantics without having semantic interpretation. I will therefore assume that interpretable features must have semantic interpretation.

Even apart from the obvious conceptual argument, there is strong evidence from languages with grammatical gender, like SC, that truly grammatical gender is an uninterpretable feature. Although SC gender is largely arbitrary, there are cases where it can be considered to have real semantic motivation. Thus, *muškarci* 'men' is masculine

and *žene* 'women' feminine. Significantly, as discussed in Bošković (2008), the gender of such nouns in several respects behaves differently from the gender of nouns that is truly semantically arbitrary, a distinction that provides strong evidence that semantically contentful and grammatical gender should not be treated in the same way, even within a single language. Bošković (2008) in fact shows the relevant data receive a principled account if the former gender is an interpretable feature, and the latter uninterpretable. I will briefly sum up here one relevant argument concerning conjunct agreement in SC. SC has both first and second conjunct agreement (FCA and SCA respectively). The subject follows the participle in the former and precedes it in the latter. (Being an enclitic, *su* cannot be sentence initial. Note that neuter is disallowed in (6a) and feminine in (6b).)

(6) a. Juče su uništene [$_{\&P}$ sve varošice i sva sela].
yesterday are destroyed.pl.fem all towns.fem and all villages.neut
'All villages and all towns were destroyed yesterday.'
b. [$_{\&P}$ Sve varošice i sva sela] su uništena.
all towns.fem and all villages.neut are destroyed.pl.neut

The account of (6a) is straightforward. There is obvious semantic motivation for the presence of the number feature at the &P level; thus, conjoined singular NPs lead to plural agreement. As Marušič et al (2007) note, while the computation of the number feature at the &P level is well motivated by semantic considerations, there is no well founded theory of gender or empirical evidence that &P computes gender on the basis of its conjuncts the way it does number. Following Marušič et al, Bošković (2008) then assumes &P is specified for number (it has plural specification), but not gender. Given this and the well-established fact that the first conjunct (NP1) is structurally higher than the second conjunct (NP2), the participial agreement probe (*Part*), a non-split ϕ-probe which probes for the number and the gender feature together, matches and agrees with &P for number and NP1 for gender. This is all that happens in FCA cases like (6a).

Before discussing (6b), I point out a fact about SC that turns out to be important for gender licensing: SC allows extraction of the first, but not the second conjunct of coordinate structures (see Bošković 2008 and Stjepanović 1998).

(7) a. Knjige$_i$ je Marko [t_i i filmove] kupio.
books is Marko and movies bought
'Marko bought books and movies.'
b. *Filmove$_i$ je Marko [knjige i t_i] kupio.

Returning to (6), as discussed in Bošković (2008), the participial agreement probe has an EPP feature, which forces movement of the subject, in all cases where the subject precedes the participle. The existence of two potential valuators (&P and NP1) for a single ϕ-probe causes a problem in cases like (6b) involving movement, i.e. pied-piping of a valuator, given that valuators determine the pied-piping element (see Bošković 2008): since both goals are in principle mobile (recall SC allows extraction of NP1) this results in ambiguous targeting for movement, which makes movement impossible (along the lines of McGinnis's 1998 lethal ambiguity) and cancels the valuation in question (see

here Bejar 2003). *Part* then initiates a second probing operation with a larger search space that includes the second conjunct. Since the second conjunct, which can now value *Part*'s gender, is in principle immobile it is not a candidate for movement, which means a pied-piping valuator can now be unambiguously determined, &P being the pied-piper. This results in the SCA pattern in (6b). The crucial assumption here is that the gender feature of SC nouns is valued and uninterpretable and that such features undergo deletion as soon as they are targeted by a probing operation. The problematic gender feature of the first conjunct is then deleted before the participial probe re-initates search for an appropriate goal, so that the second probing operation can target the second conjunct for the gender feature. The above is the gist of the analysis of the basic FCA/SCA paradigm from (6); the reader is referred to Bošković (2008) for technical details of the account, as well as the full conjunct agreement paradigm, which is much more complicated than (6).

What is important for us is that SCA fails with nouns whose gender has real semantic motivation. Thus, (8) contrasts with (6b) ((8) is acceptable with default masc. *došli*).

(8) ?*Sve žene i sva djeca su došla.
all women.fem and all children.neut are arrived.pl.neut
'All women and all children arrived.'

The contrast can be easily accounted for given that in this case the gender feature of the first conjunct, *žene*, is interpretable, which means it is not subject to deletion (Chomsky 1995). As discussed above, the reason why the participle can agree in gender with NP2 in (6b) is because the trouble-making gender specification of the first conjunct is uninterpretable, hence can be deleted. The participle was thus able to by-pass the gender of NP1. This is impossible in (8). The gender feature of NP1 is interpretable, hence cannot be deleted. As a result, the participle cannot by-pass the gender of NP1 to agree in gender with NP2. The contrast between (6b) and (8) thus receives a principled explanation, the culprit for the contrast being a difference in the (un)interpretability of the gender feature of the first conjunct, which has strong semantic motivation.

It is worth noting here that Bošković (2008) gives several other cases where SCA fails that abstractly look just like (8): the problem in all the cases is that an interpretable feature of NP1 prevents the probe from reaching NP2.Consider (9), with structure in (10).

(9) a. *Juče su uništena jedno selo i jedna varošica/sve varošice.
yesterday are destroyed.pl.neut one village.neut and one town.fem all towns.fem
'One village and one town/all towns were destroyed yesterday.'
b. *Juče je uništeno jedno selo i jedna varošica/sve varošice.
yesterday is destroyed.sg.neut one village.neut and one town.fem all towns.fem
c. *Jedna varošica i jedno selo/ sva sela je uništeno.
one town.fem and one village.neut all villages.neut is destroyed.sg.neut
d. *Jedna varošica i jedno selo/ sva sela su uništena.
one town.fem and one village.neut all villages.neut are destroyed.pl.neut

(10) *Part*[number, gender] [$_{\&P[plural]}$ NP1[neuter, singular] [.... NP2[gender]]]

Part, a non-split ϕ-probe that probes for its ϕ-features <u>together</u>, probes for number and gender in (9a). It does not stop when it matches &P for number, since &P has no gender (see (10)).When it matches NP1, the probing stops since at this point both ϕ-features of *Part* have found a match. *Part* in (9a) thus undergoes Hiraiwa's (2005) Multiple Agree with &P and NP1 (recall that *Part* is a non-split ϕ-probe). While the *Part*'s gender can be valued, the valuation yielding neuter gender, its number cannot be valued due to a valuation conflict: since one of the matching elements is plural (&P) and one singular (NP1), the number value of *Part* cannot be uniquely determined. Still, locality does not allow *Part* to probe further down. Moreover, since the number feature of NP1 is interpretable, it cannot be deleted; *Part* then cannot reach NP2 for number valuation. On this account it does not matter whether NP2 is singular or plural and whether &P will undergo movement or not. The account thus works for all the examples in (9). Notice now that in all the examples in (6b), (8) and (9), targeting NP1 for Agree created a problem. We were able to resolve the problem only in (6b), since the relevant feature of NP1, namely gender, is uninterpretable hence can be deleted. The relevant feature of NP1 in (8) and (9), on the other hand, is interpretable hence cannot be deleted. The problem then cannot be resolved. What is important here is that semantically motivated gender patterns with number, not with grammatical gender, which nicely falls in place if semantically motivated gender and number are interpretable (hence cannot be deleted), while grammatical gender is uninterpretable (hence can be deleted.)

I then conclude truly grammatical gender in SC is an uninterpretable feature, the different behavior of truly grammatical and semantically motivated gender with respect to several phenomena providing strong evidence that the two should not be treated in the same way (as noted in Bošković 2008, grammatical and semantically motivated gender also differ regarding the ability to be overridden by default masc. gender; see Despić 2009 for another case where grammatical and semantic gender are divorced). Since, as noted above, nominal gender must be lexically valued (it is a lexical property of nouns, not something they acquire via agreement during the derivation), we then have here evidence for the existence of valued uninterpretable features. I will now explore consequences of allowing valued *u*Fs, starting with a simplification of feature checking (see also PT).

2. Feature Checking with Unvalued *u*Fs: Gender and Case Licensing

Since for Chomsky (2001) *u*Fs are always unvalued, the system does not allow feature checking between two *u*Fs. Feature checking should result in valuation of unvalued features. If both the probe's and the goal's feature is unvalued, their feature checking cannot result in valuation. Disallowing the possibility of checking two *u*Fs against one another forces Chomsky to tie checking of an uninterpretable feature F of a goal to checking of a different uninterpretable feature K of its probe (note interpretable features, which are always valued for Chomsky, cannot serve as probes due to Last Resort; since there is no need for them to probe they are not allowed to do it). This makes feature checking rather cumbersome and leads to a proliferation of features involved in checking. Thus, (11a-b) cannot result in the checking of the F feature of Y; (11a) because, being unvalued, the *u*F of X cannot value the *u*F of Y, and (11b) because X cannot function as a probe due to the lack of unintepretable features. As a result, Chomsky is forced to posit

(11c), where the *u*F of Y is checked as a reflex of K feature checking. This kind of reflex checking considerably complicates feature checking and leads to a proliferation of features involved in checking (we cannot simply have F feature checking in (11); rather, we need to assume an additional feature K is involved in feature checking between X and Y).

(11) a. X Y
*u*F *u*F
b. X Y
*i*F *u*F
c. X Y
*u*K *i*K
*u*F

Allowing valued unintepretable features enables us to simplify the feature checking relations from (11c), eliminating reflex checking. In particular, (11a) is now allowed, if one of the F features is valued. Gender checking in SC (12) in fact works exactly like this: As discussed above, both the gender probing head, responsible for participial gender, and the noun, have *u*Gen, but only the former has unvalued Gen. *Part* then probes NP in (12), which values its Gen feature. There is no need for reflex checking (for other relevant cases, see the discussion of case below and pluralia tantum nouns in fn 3).

(12) a. Juče je kupljeno auto. b. *Part* NP
yesterday is bought.sg.neut car.neut unvalued *u*Gen valued *u*Gen

Now, it is standardly assumed semantics cannot deal with uninterpretable features, hence they need to be eliminated before entering semantics. This takes place through feature checking. A question, however, arises why they simply could not be deleted, in which case they would not need to be checked. Recall only valued uninterpretable features can be deleted (5). In other words, valuation is a prerequisite for deletion of uninterpretable features: an unvalued *u*F must be valued before it can be deleted; a valued *u*F, on the other hand, can be deleted. But if a valued *u*F can simply be deleted, there is no need for it to undergo feature checking. This leads us to an important difference between the current, valuation-driven system and Chomsky (1995), an interpretability-driven system.

What was driving feature checking in the latter was uninterpretability; all *u*Fs had to undergo feature checking so that they can be eliminated before reaching semantics, where they would violate Full Interpretation. What drives feature checking in the current system is valuation; i.e. the need to value unvalued features. *u*Fs that are unvalued still need to undergo feature checking (so that they can get valued, which is a prerequisite for their deletion). However, valued uninterpretable features do not need to undergo feature checking since they can get deleted even without feature checking. This is an important departure from Chomsky (1995), where all uninterpretable features had to undergo feature checking (the same holds for Chomsky 2001 and PT).[2] SC conjunct agreement

[2]On the other hand, while in Chomsky (1995) interpretable features do not need to undergo checking, as discussed below, interpretable features do now need to undergo checking if they are unvalued.

provides strong evidence in favor of the current system, i.e. it provides evidence that valued unintepretable features indeed do not need to undergo checking. Consider (13).

(13) Juče su uništene sve varošice i sva sela.
yesterday are destroyed.pl.fem all towns.fem and all villages.neut
'All towns and all villages were destroyed yesterday.'

The participle in (13) agrees in gender with the first conjunct, which means the second conjunct is not involved in gender feature checking. Notice that the conjunct doesn't have default masculine gender. Its non-default gender feature simply goes unchecked. This is exactly what is expected given the above discussion: the gender feature of the noun is uninterpretable, but valued. As a result, it can be deleted (so that it does not enter semantics) without checking. The SC gender paradigm thus provides evidence that one type of uninterpretable features, namely valued *u*Fs, does not need to undergo feature checking.[3]

Case licensing is also relevant. Case is clearly uninterpretable on both the traditional case assigner, e.g. finite T, and case assignee. A particular case assigner always governs the same case, while the case of an NP depends on its syntactic context. As a result, the case of traditional case assigners should be valued and the NP's case unvalued. Case checking then represents another instantiation of (11a) (see below for a detailed discussion, where it is argued that the NP works as a probe after undergoing movement).

This approach makes an interesting prediction given that valued *u*Fs don't have to undergo feature checking. It has often been argued, both in GB and Minimalism, that just like NPs have to be assigned case (I will refer to the requirement, which is stated in a somewhat different form in Minimalism, as the Case Filter), traditional case assigners have to assign their case, a requirement I will refer to as the Inverse Case Filter, following Bošković (1997). The valuation-driven system makes an interesting prediction regarding these requirements.Since the case feature of traditional case assigners is valued, which means it can be deleted even without checking, it does not have to undergo checking. This is in contrast to the case feature of NPs, which is unvalued, hence needs to be checked. This amounts to saying that the traditional Case Filter holds, but the Inverse Case Filter does not hold. There is strong empirical evidence that this is indeed correct. It is pretty clear that the Case Filter holds. As for the Inverse Case Filter, all attempts to enforce it (e.g. Bošković 2002, Epstein & Seely 1999) have come up short against persistent empirical problems which clearly indicate traditional case assigners don't have to check their case, which means the Inverse Case filter does not hold. E.g., the existence of verbs that assign case only optionally goes against the spirit of the Inverse Case Filter.

(14) a. John laughed (himself silly).
b. Mary is dressing (herself).
c. Peter is eating (apples).

[3]Rezac (2004) notes another relevant case: the number of pluralia tantum Ns like *scissors* or SC *kola* 'car', which is not semantically motivated. Yet, it can appear in contexts where it is not checked, as in *there is a pencil and scissors on the table*. Moreover, it can value the uninterpretable ϕ-features of T, as in *scissors are on the table* and (1), an Agree relation that represents another instantiation of (11a).

Slavic genitive of quantification/negation also provides evidence against the Inverse Case Filter (see Franks 2002). In many Slavic languages verbs that assign accusative fail to assign it when the object is a higher numeral NP.(*Kola* in SC (15b), which must be genitive, receives its case from *pet*.) The same occurs when a verb is negated, as shown by Polish (16b), where genitive of negation is obligatory. (There are similar arguments against obligatory assignment of nominative as well as some lexical cases; see Franks 2002).

(15)	a.	On	kupuje	kola.		b.	On	kupuje	pet	kola.
		he	buys	car.acc			he	buys	five	cars.gen

(16)	a.	Janek	czytał	książkę.		b.	Janek	nie	czytał	książki.
		Janek	read	books.acc			Janek	neg	read	books.gen

Default case is also relevant. Such case clearly doesn't need to be checked; NPs bearing default case in fact appear in contexts where the case cannot be checked. This property of default case receives a principled account in the current approach. The most appropriate way to handle default case is to assume that default case involves valued case on the NP. Since the value of default case is fixed for each language for all constructions (it does not depend on syntactic context),it's clear default case should be valued, which in turn means it does not need to be checked. In other words, since valued uninterpretable features do not need to be checked, we capture the fact that default case does not need to be checked.

Like the SC conjunct-sensitive agreement paradigm, case licensing thus provides evidence that valued uninterpretable features do not need to undergo feature checking. This represents an important departure from the earlier feature-checking system of Chomsky (1995), where all uninterpretable features had to undergo feature checking.

The current system also differs in this respect from Pesetsky & Torrego (2007), another valuation-driven system which decouples valuation and interpretability, allowing valued *u*Fs. For PT, all *u*Fs, even valued ones, need to undergo Agree with an interpretable instance of the same feature.PT allow (11a), but only if there is a follow-up checking with an interpretable instance of the F feature. The current system differs from PT in that nothing else needs to happen in (11a) (provided one *u*F is valued); neither *u*F needs to undergo further Agree with an *i*F. The current system thus differs from Chomsky (1995, 2001) and Pesetsky & Torrego (2007) in allowing one instance of uninterpretable features (namely valued uninterpretable features) not to undergo feature checking at all. It also differs from Chomsky (2001) and Pesetsky & Torrego (2007) in not requiring uninterpretable features in general to undergo feature checking with interpretable features.

3. Moving Element vs Target Driven System

I now turn to the issue of what drives Move and Agree. Recall uninterpretable features must be eliminated before entering semantics. This takes place through deletion. However, only valued *u*Fs can be deleted. An unvalued *u*F must then be valued before it can be deleted. A valued *u*F, on the other hand, can simply be deleted. Since a valued *u*F can be deleted, there is no need for it to undergo feature checking. Above, we have seen

several arguments to this effect. There is another very interesting consequence of this. Since a valued *u*F does not need to undergo feature checking (nothing goes wrong if it does not undergo feature checking), given Last Resort a valued *u*F should not be able to function as a probe. On other hand, an unvalued *u*F can function as a probe, since such elements do induce a crash, hence there is a need for them to undergo Agree. PT argue that just like *u*Fs can be either valued or unvalued, *i*Fs can also be valued or unvalued. One example of unvalued *i*Fs they give is the Tense feature of T, which for them is the locus of tense interpretation but its value depends on its syntactic context (the verb T co-occurs with). PT argue an unvalued *i*F is a problem for semantics; i.e. semantics knows what to do with an *i*F only if F has a value. Unvalued *i*Fs can then also function as probes. From this perspective what drives Agree is valuation: only unvalued features can function as probes. (17) shows which contexts can yield legitimate Agree relations.

(17)	a.	X[*unval u*F]…Y[*val u/i*F]	e.	*X[*unval u*F]…Y[*unval u/i*F]
	b.	X[*unval i*F]…Y[*val u/i*F]	f.	*X[*unval i*F]…Y[*unval u/i*F]
	c.	*X[*val u*F]…Y[*val u/i*F]	g.	(*)X[*val u*F]…Y[*unval u/i*F]
	d.	*X[*val i*F]…Y[*val u/i*F]	h.	(*)X[*val i*F]…Y[*unval u/i*F]

Agree cannot occur between X and Y in (17c-d) due to Last Resort (there's no reason for X to probe). The same holds for (17g-h) in Chomsky (2001), though they would be treated differently in Bošković (2007), as discussed below (Y would move to probe there). Finally, the problem with (17e-f) is that the *u*Fs of X and Y cannot be valued. This system allows interpretable features to trigger feature checking (see PT), which was not possible in Chomsky (1995), where uninterpretability was the trigger for feature checking. (I am putting aside here strength, which was used to drive overt movement.) Also, in contrast to Chomsky (2001), two *u*Fs can undergo feature checking, as long as the probe is unvalued and the goal valued. However, even *u*Fs fail to trigger Agree if they are valued.

Let us now reconsider case in light of the above discussion. Case checking is rather cumbersome in Chomsky's (2000, 2001) system. As noted above, case is clearly uninterpretable on both the probe (e.g. finite T) and the goal (NP). Since, as discussed above, Chomsky disallows Agree between two *u*Fs, he cannot have direct case feature checking between T and NP. Rather, he has to complicate the system by appealing to the notion of reflex feature checking, where case checking is tied to the checking of another feature. Thus, for Chomsky, ϕ-features of T in (18) probe the NP, and somehow as a reflex of this ϕ-feature checking the case feature of the NP gets checked. The "somehow" here is rather mysterious given that T does not even have a case feature for Chomsky.

(18)	T	NP
	*u*ϕ	*i*ϕ
		*u*Case

The current system makes possible a much more natural approach to case licensing, where both T and the NP have a case feature, in line with the attempt to eliminate the undesirable concept of reflex feature checking. The case feature of both T and the NP is

uninterpretable. Moreover, since (finite) T always governs nominative, and the case of NPs depends on their syntactic context, T's case is valued and NP's case unvalued.

(19) T NP
val *u*Case *unval* *u*Case

Case licensing in (19) can proceed without problems and without reflex feature checking, but crucially only in Bošković's (2007) system, not in the target-driven system of Chomsky (2000, 2001). In the latter, even if the above assumptions regarding valuation are adopted so that valuation drives Agree, Agree would fail in (19) because T could not function as a probe due to Last Resort. On the other hand, in Bošković's (2007) system, the NP would move to SpecTP and then probe T from this position. Since the NP has an unvalued case feature it can function as a probe.

To see this more clearly, I will briefly summarize Bošković (2007). I show that in many cases the target that is assumed to trigger movement of X is not even present at the point when X needs to start moving. To deal with such cases I argue the marking indicating the need for movement, which is standardly taken to be a property of the target (the EPP property of Chomsky 2001), should be placed on the moving element (X), not on the target. It is then trivially always present when X needs to start moving. To implement this, I take advantage of Chomsky's claim that a moving element must have a *u*F, and use this *u*F to drive movement.[4] It is standardly assumed that a probe must c-command the goal, and that the probe must have a *u*F; otherwise, there would be no need for it to function as a probe. Following Epstein & Seely (1999), I assume the correlation between functioning as a probe and having a *u*F is a two-way correlation: just like a probe must have a *u*F, a *u*F must function as a probe. In other words, checking of a *u*F on X requires X to function as a probe (i.e. c-command the checker).This means Y in (20) needs to move outside of XP to license *u*F. Given Shortest Move, it will move to the closest position c-commanding W, namely SpecWP. (X is a cyclic phasal head, which means YP must pass through SpecXP when moving out of XP but can't stay in that position.The EPP markings and the K feature are needed only in Chomsky's 2001 system, not in Bošković 2007.)

(20) W [$_{XP}$ ...X... Y]
u/*i*F (EPP) *u*F
(*u*K) (*i*K)
(EPP)

The account deduces generalized EPP effects.There's no need to mark intermediate heads like X in (20) with the EPP property to drive movement to SpecXP: Since the phasal head complement is sent to spell-out (Chomsky 2001) the movement occurs so that Y escapes being sent to spell-out, which would freeze it for the possibility of movement, leaving its *u*F unchecked.[5] We also do not need to mark W with the EPP: Y must move to SpecWP

[4]The following is couched within Bošković's system (2007), where *u*F drives movement. It can be easily updated to the current system, where *unval*F would drive movement, by replacing *u*F with *unval*F.

[5]I formulate Last Resort as follows: X can undergo movement iff without the movement the structure will crash. Movement to SpecXP then conforms with Last Resort although it does not involve

even if W doesn't have the EPP property, which is then dispensable.[6] Generalized EPP effects then follow from the *u*F of the moving element (note that the *u*F is needed even in Chomsky's target-driven system due to the Activation Condition).The interesting twist of the analysis is that the effect is stated as a property of the moving element, not the target.

The above system is highly restrictive. If we update it to the valuation-driven model adopted here, marking the F feature in (21) unvalued only on Y will lead to movement of Y to SpecXP, while marking it unvalued only on X will lead to Agree only.

(21) X... Y
F F

This brings us to a difference between the Chomsky/Bošković systems. In the valuation-driven system, under both approaches a probe X, which initates an Agree operation, must have an *unval*F. Without an *unval*F, there would be no reason for X to probe. Since there is no need for it, X could not probe, given Last Resort. In Chomsky's system, (22) then invariably crashes, since the *unval*F of Y cannot get valued.

(22) X ….. Y
*val*F *unval*F

This is not the case in Bošković's system, where Y moves to SpecXP and probes X from there, valuing *unval*F. (22) thus yields different results in the two systems. As discussed above (see (19)), case works exactly like this: case feature is valued on the higher head (T) and unvalued on the lower element (NP). I conclude, therefore, that the valuation-driven system captures case licensing without additional assumptions that were needed in Chomsky's (2001) system, eliminating the need for reflex case checking. It also provides evidence for the moving-element driven system, as opposed to the target-driven system.

4. Conclusion

Allowing valued uninterpretable features increases empirical coverage and considerably simplifies feature checking, which includes elimination of reflex checking. The valuation-driven system argued for in the paper allows valued uninterpretable features not to undergo feature checking and does not require uninterpretable features in general to undergo feature checking with interpretable features. Evidence in favor of the current system came from gender and case licensing. Regarding the former, I have argued that grammatical gender is an uninterpretable feature, main evidence for which came from the different behavior of truly grammatical and semantically motivated gender within a single language (SC). As for case, the current system not only captures case licensing without additional assumptions that were required in Chomsky's (2001) system,

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feature checking between Y and X, a desirable result in light of arguments against feature checking in intermediate positions given in Bošković (2007) and references therein.

[6]See Epstein & Seely (2006) for discussion of the traditional EPP in this context, which is generalized in Bošković (2007) with an exploration of a number of additional consequences and an extension to successive cyclic and wh-movement.

eliminating the need for reflex case checking, but also accounts for the fact that the Case Filter, but not the Inverse Case Filter holds (only the former is enforced) and that default case does not cause a crash although it does not undergo checking. It also provides evidence for the moving-element driven system, as opposed to the target-driven system.

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