Passive *v*P is not phasal in Bosnian/Croatian/Serbian

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Abstract. Legate (2003) argues, contra Chomsky 2001, that passive *v*P is a phase in English. In this paper, I present novel Bosnian/Croatian/Serbian (BCS) data from (i) theme vowel quality, (ii) apparent non-local allomorphy and allosemy, and (iii) agreement to support the claim that passive *v*P is not phasal in this language. Comparing these findings with Legate's, I show that those of her diagnostics that can be applied to BCS put BCS passive participles on a par with active verbs, patterning with the English data. This result, I argue, supports the view that Legate's diagnostics may not be phasehood detectors at all and has consequences for our general understanding of phasehood.

Keywords. phases; allomorphy; allosemy; agreement; Bosnian/Croatian/Serbian

1. Introduction. Locality constraints in syntax have received a number of analyses since the inception of generative linguistics, with the most recent one being Phase Theory (Chomsky 2000, 2001, a.m.o.). Phase Theory was originally motivated by the complexity of so-called *Merge-over-Move* patterns; with certain additions (like the free addition of EPP features to phase heads), the theory was supposed to account for the properties of successive-cyclic movement in natural language more generally. Marantz (2001, 2007) argues that phases à la Chomsky can also be detected below the 'word' level, and much subsequent work in Distributed Morphology (DM) supports this idea (see e.g., Embick 2010, Embick 2021). In this paper, I adopt the hypothesis that phases above and below the word level constitute the same phenomenon.[1] Building on this, I argue that Bosnian/Croatian/Serbian (BCS) passive *v* is not phasal, even though it allows A'-movement through its specifier. This result supports the view that the ability to move through (or reconstruct in) a certain spec, XP is not a good phasehood diagnostic for X (see also Van Urk & Richards 2015, Keine 2016, 2017, Preminger 2019; contra Legate 2003, Van Urk 2020, a.o.).

1.1. BACKGROUND ON CHOMSKYAN & DM PHASES. Chomsky (2000, 2001) proposes that syntactic derivations are cyclic. A *phase* is a piece of structure whose derivation is encapsulated; it serves as a point at which an intermediate result of the derivation is transferred to and given an interpretation at the PF and LF interfaces. The formal mechanism that drives cyclicity is given in (1). With (1) in hand, postulating certain heads to be phasal is an attempt to derive (the constraints on) successive-cyclic movement. While Chomsky identifies *v** (*v* with an external argument) and C as phasal heads, proposals were subsequently made to both expand and reduce this inventory (e.g., Legate 2003 Bošković 2005, Keine 2017, a.o.), or to do away with phase heads completely (Richards 2011).

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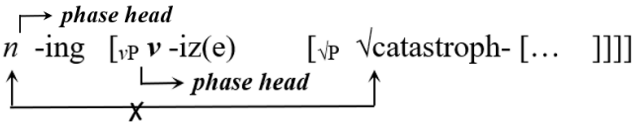
[1] However, see Bešlin in prep(b) for an empirical argument that the two types of phasehood should not be equated.

(1) **Phase Impenetrability Condition** (PIC2) (Chomsky 2001:14)
Given the structure [ZP Z . . . [HP α [H ' H YP]]], where H and Z are phase heads, the domain of H is not accessible to operations at ZP; only H and its edge are accessible to such operations.

I should clarify that I assume the relevant formal mechanism to be the amended version of the PIC, so-called PIC2, because it has been argued to be empirically necessary in both DM and classical syntax (see e.g., Sigurðsson 2002, Embick 2010). For DM phasehood in particular, Embick 2010 provides a compelling case that PIC2 is the only viable option. Since we are taking a stance that DM and Chomskyan phasehood is the same phenomenon, adopting PIC2 seems necessary. Note, however, that PIC2 does not itself enforce successive-cyclic movement to the specifier of a phase head; an additional stipulation–such as that all phase heads have an (optional) EPP feature–is required to achieve this. Hence, on the original formulation, C and *v** may have an EPP-feature, which provides a position for XP-movement.

Since Chomsky 2000, there has been interest in identifying spell-out domains below the word level (e.g., Marantz 2001, 2007, Embick 2010, 2021). There appear to be locality constrains on the contextual-conditioning of morphemes' form (allomorphy) and meaning (allosemy), which are best accounted for if lexical heads (*v*, *n*, *a*) are assumed to be phase heads. In accordance with PIC2, the merger of a phase head (P1) triggers spell-out at the next phase head (P2); P2 and the material merged above it are then not be able to influence the form or meaning of the material merged below P1 and vice versa. Illustrating with the deverbal noun *catastrophizing* in (2), the nominalizing morpheme, which is a phase-head by hypothesis, will not be able to influence the form or meaning of the root (or vice-versa) because there is another phase-head (*v)* that intervenes between the two, and spell-out of the root is therefore triggered by the merger of *n*.

(2) 

1.2. LEGATE'S 2003 CONTRIBUTION. For Chomsky, passive (and unaccusative) *v* are non-phasal; Legate (2003) argues, based on data like (3), that English passive *v* is a phase because reconstruction for binding purposes is allowed in its specifier. The only way to account for the acceptability of (3a) is to assume that the *wh*-phrase stops over in spec, *v*P, since a binding condition is violated in both the *wh*-'s base position and its surface position. The bracketed constituent contains the bound variable pronoun *he*, which must be bound by *every man*, and also the R-expression *Mary*, which mustn't be bound by the pronoun *she*. In (3a), the R-expression will be bound in the base position, and the bound variable pronoun will not have a binder in the surface position. However, the requirements of both elements can be satisfied in the intermediate spec, (passive) *v*P, leading Legate to argue that the *wh*-phrase stops over in this position. In (3b), ungrammaticality arises because there is a binding violation at every step of movement.[2]

[2] This argument assumes a cascade structure in which *at*-phrases are merged as the lowest argument in the VP; see Pesetsky 1995 (cf. *Every man was introduced to Mary at the first party he invited her to.*)

(3) a. [At which party he$_i$ invited Mary$_k$ to]$_1$ was every man$_i$ ✔$_1$ introduced to her$_k$ ✗$_1$?

b. *[At which party he$_i$ invited Mary$_k$ to]$_1$ was she$_k$ ✗$_1$ introduced to every man$_i$ ✗$_1$?

Legate presents an additional argument for passive *v*P phasehood from Quantifier Raising (QR) in Antecendent-Contained Deletion (ACD). The argument goes as follows. ACD is known to force QR (Bouton 1970, Sag 1976, May 1985, Chomsky & Lasnik 1993, Fox 1995). Then, we can use scope-bearing elements to ensure that QR is targeting the edge of *v*P instead of CP. In (4), ACD forces QR, but in order to obtain the most salient reading where the existential quantifier scopes over the universal, QR must be to a position lower than the subject: the edge of (passive) *v*P. The fact that spec, passive *v*P can serve as the target of (covert) movement in QR is for Legate another argument that English passive *v* is a phase head.

(4) Some woman was [VP$_1$ given [DP every message you were [VP$_2$ e]]]

There are some initial worries with the empirical base of Legate's argument, in particular the worry that the movement/reconstruction to an intermediate position may not be due to phasehood, but due to other considerations such as binding and scope. I will therefore probe the ideas explored by Legate further, using BCS as my tool. The paper is organized as follows. I present novel BCS data from theme vowel quality (section 2), apparent non-local allomorphy and allosemy (section 3), and agreement (section 4) to support the claim that passive *v*P is not phasal in this language. In section 5, I compare my findings with Legate's and I show that her diagnostics put BCS passive participles on a par with active verbs, thus patterning with the English data. More specifically, I show that reconstruction for binding and QR-to-spec-*v*P in ACD are both possible with BCS passive verbs. This, I argue, supports the view that Legate's diagnostics are not phasehood detectors at all as non-phasal elements can serve as (intermediate) stopping points for A'-movement.

2. Verbal theme vowels. Morphologically, active and passive *v* in BCS are often distinct. Namely, there are systematic active/passive differences in the exponence of the verbal theme vowel. As shown in (5), BCS passive participles, like active verbs, obligatorily contain verbal theme vowels, argued to be exponents of *v* (Svenonius 2004, Caha & Ziková 2016, Biskup 2019, Bešlin in press(a)).

(5)	(a)	gled-**a**-ti watch-V-INF	'watch'	gled-**a**-n watch-V-PASS	'watched'
	(b)	šut-**nu**-ti kick-V-INF	'kick'	šut-**nu**-t kick-V-PASS	'kicked'
	(c)	vol-**e**-ti love-V-INF	'love'	volj-**e**-n love-V-PASS	'loved'
	(d)	uč-**i**-ti study-V-INF	'study'	uč-**e**-n study-V-PASS	'studied'
	(e)	pas-∅-ti graze-V-INF	'graze'	paš-**e**-n graze-V-PASS	'grazed'

In (5), from Bešlin in press(a), we can observe that the theme vowel in the passive changes systematically to *-e* for over half of the verb classes (5c-e), while it remains the same for the classes in (5a-b). While this piece of evidence does not bear directly on the phasal status of passive *v*, the systematicity of the change does suggest that active and passive *v* are distinct in BCS.

This piece of information is not trivial and should be investigated, rather than assumed, for each language. Note also that I gloss BCS passive participles PASS throughout, to differentiate them from active participles (ACT), but both of these are (deverbal) adjectives (see Bešlin in press(a), Bešlin in prep(a)). This will be relevant throughout the paper, since the adjectivizer is a (DM) phase-head, by hypothesis, and as argued in Bešlin in prep(b).

2.1. A NOTE ON *v* AND *a* EXPONENCE IN BCS PASSIVE PARTICIPLES. I would like to discuss briefly my assumption that the vowel between the root and the adjectival suffix on the passive participle is an exponent of the (passive) verbalizing morpheme, *v*. This view was argued for in Bešlin in press(a), but is not the only conceivable option. In fact, it has been argued that the vowel I gloss as V in the passive participle is instead part of the adjectival suffix; the adjectival suffix would then be *-an/-en/-ut* and the verbalizer phonologically null. This idea is given initial plausibility by the fact, first observed by Jakobson (1948), that when two vowels in Slavic co-occur at either side of a morpheme boundary, the result is often the deletion of the first vowel. Hence, if the underlying form of the adjectivizer were *-an/-en/-ut* instead of *-n/-t*, we would expect the verbal theme vowel to disappear on the surface. The surface forms would then contain no overt exponents of *v*.

Indeed, BCS has adjectival suffixes *-en* and *-an*, in addition to *-n*.[3] However, I believe there is good reason to doubt that these suffixes are used to form the passive participle. First, while the suffix *-n* is productive and forms adjectives from stems of all categories (including verbs), the suffixes *-en* and *-an* are quite unproductive in modern BCS (Babić 2002:448). According to Babić (2002), there is only one verbal stem that forms an adjective with the suffix *-an* and no verbal stems that form adjective with the suffix *-en* (see Babić 2002:461-3). Second, there is in fact no adjectival suffix *-ut* in BCS. Finally, Simonović & Arsenijević (2020) observe that the adjectivizer *-an* imposes a rising accent to the resulting word, while the addition of the suffix *-en* can give rise to four different prosodic patterns (see Simonović & Arsenijević 2020:289). Importantly, passive participles surface with the accent pattern of the underlying verbal stem. This behavior is explained if the adjectivizing suffix of the passive participle is instead *-n* (or *-t*), which does not interact with the accentual pattern of the word it derives, possibly because it contains no uderlying vowel/syllable.[4] See Bešlin in press(a) for an additional argument from pairs of pure adjectives and passive participles which differ only in the obligatory presence of the theme vowel with passive participles. From all of this, I conclude that the passive participle has an overt verbalizer (the theme vowel), and that the adjectivizer which derives the passive participle is *-n/-t*.

The issue of the overt exponence of *v* is important because Marantz (2013) argues that domains for allomorphy and allosemy may be subject to interface-specific conditions, such that phonologically null items do not block adjacency for allomorphy in a given spell-out domain. If BCS passive *v* were null, we could explain its non-phasal behavior in terms of a general claim about what counts as intervention at the given interface. However, given what was said in this section, this route does not seem to be viable for BCS passive *v*. The grammar will have to contain the information that passive (but not active) *v* in BCS is non-phasal, even when it has a phono-

[3] The suffix *-n* is sometimes referred to as *-(a)n* because it surfaces with an epenthetic vowel in cases where its addition would create an otherwise illicit consonant cluster in the coda position; see Bešlin in press(a). It is different from the adjectival suffix *-an* which keeps the vowel regardless of any phonotactic considerations.

[4] Note also that the original passive participial suffixes in Proto-Slavic were **-n* and **-t* (Sussex & Cubberley 2006), though of course the language could have diverged from this initial picture.

logically overt exponent.

3. Apparent non-local allomorphy and allosemy. In this section, I look at BCS participles more closely, and show that the participial morpheme (*a*) is in the same spell-out domain as the root across passive *v*, but not across active *v*. More specifically, we observe root-conditioned allomorphy for the adjectivizer across passive, but not across active *v*. Furthermore, the the ROOT-V complex may exhibit contextual allosemy when it combines with the adjectivizer in the case of the passive participle, but not in the case of the active participle. These patterns can be explained if BCS active *v*, but not passive *v*, is a phase. I will first examine the allomorphy patterns in section 3.1, and then turn to allosemy in section 3.2.

3.1. ALLOMORPHY. As we saw in section 2, BCS passive participles contain verbal theme vowels, and they may also contain verbal (aspectual) prefixes (6)-(8). The participial suffix is attached above (at least) the verbalizer *v*. If categorizers are phasal heads, the form of the participial suffix–an adjectivizer–should not be influenced by the identity of a particular root. Nonetheless, there are two distinct exponents of the passive suffix: *-n* and *-t* (6a-b). While the *-n*/*-t* distinction is sometimes predictable based on verb class, each of the pairs in (6)-(8) belong to the same verb class, as witnessed by the identity of their theme vowels across the paradigm. Still, in each of the pairs, the (a) member forms the passive with the suffix *-t*, while the (b) member does so with *-n*. This suggests that the form of the adjectivizer in the passive is determined by the root (and not, e.g., by a particular *v* head), in apparent violation of locality.

(6)

	INFINITIVE	PASSIVE PARTICIPLE	ACTIVE PARTICIPLE	PRESENT
(a)	*priznati*	pri-zn-a-t	pri-zn-a-o	pri-zn-a-m
	admit.INF	PREF-admit-V-PASS	PREF-admit-V-ACT	PREF-admit-V-1SG
(b)	*naslikati*	na-slik-a-n	na-slik-a-o	na-slik-a-m
	paint.INF	PREF-paint-V-PASS	PREF-paint-V-ACT	PREF-paint-V-1SG

(7)

(a)	*poslati*	po-sl-a-t	po-sl-a-o	po-šalj-e-m
	send.INF	PREF-send-V-PASS	PREF-send-V-ACT	PREF-send-V-1SG
(b)	*zavezati*	za-vez-a-n	za-vez-a-o	za-vež-em
	tie.INF	PREF-tie-V-PASS	PREF-tie-V-ACT	PREF-tie-V-1SG

(8)

(a)	*doneti*	don-e-t	don-e-o	dones-e-m
	bring.INF	bring-V-PASS	bring-V-ACT	bring-V-1SG
(b)	*sneti*	snes-e-n	sn-e-o	snes-e-m
	lay.INF	lay-V-PASS	lay-V-ACT	lay-V-1SG

Furthermore, the passive participle in (8a) has an alternative form *dones-e-n* 'bring-V-PASS', which is parallel to the passive in (8b). This optionality between *-n* and *-t* in (8a) can be accounted for only if it is determined by the particular root; otherwise, we would expect it to extend at least to (8b), contrary to fact (cf. **snet*). Note that the form of the passive suffix does not depend in any way on the phonological form of the root/stem either. Homonymous verbs like *izdati* 'publish' and *izdati* 'betray' are formed with distinct passive suffixes: *izda-t* 'published' and *izda-n* 'betrayed', respectively.

On the other hand, the adjectivizer that forms the active participle shows no variability whatsoever when it attaches to the active verbal stem, as seen in the third column of (6)-(8). I argue that this contrast between active and passive participles stems from the fact that active *v*, but not passive *v*, is a phase head in BCS. Since passive *v* does not trigger spell-out, the material merged below it can communicate with the (phasal) material merged above it for the purpose of determining form, as well as meaning, which I turn to now.

3.2. ALLOSEMY. On the meaning side, we see in (9a-b) that roots like *bac* 'throw', *udar* 'hit' and *pomer* 'move' may acquire an idiomatic interpretation when they are used to derive passive participles, despite the intervention of verbal material. The idiomatic meaning is crucially dependent on the presence of the passive suffix; neither the finite future form nor the active participle of *(za)bac-* or *pomer-/udar-* can mean 'remotely locate' or '(be) crazy' (9c-d).

(9) a. Salaš je za-bač-e-n u dolini.
farm is PREF-throw-V-PASS in valley
'The farm is remotely located in the valley.'

b. Malo je pomer-e-n / udar-e-n otkad je došao.
little is move-V-PASS hit-V-PASS since AUX came
'He is a little crazy since he came.'

c. Za-bac-i-će udicu / #kuće u dolini.
PREF-throw-V-3.FUT hook houses in valley
'He will throw the hook/houses behind him in the valley.'

d. Malo je po-mer-i-o / udar-i-o (nešto) kad je došao.
little is PREF-move-V-ACT hit-V-ACT something when AUX came
'He hit /moved (something) a little when he came.'

Again, the existence of allosemy with passive deverbal adjectives, but not with active ones (or active finite verbs), can be explained if passive *v* is not phasal in BCS. The PIC2 then gives us a straighforward explanation for the observed pattern: The root in the passive construction is not spelled out when *a* is merged; they are both spelled out when the next higher phase-head is merged. This means that the root and *a* will be in the same spell-out domain, which allows *a* to influence the root's (and *v*'s) meaning.

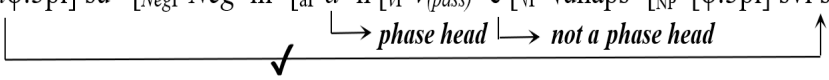
4. Agreement facts. Evidence for the non-phasal status of BCS passive *v* also comes from agreement licensing by in-situ passive arguments. First, I use scope of negation to show that the post-verbal argument in (10b) has not moved past negation (see also Potsdam & Polinsky 2011). Namely, while the preverbal subject in (10a) allows the universal quantifier to scope above or below negation, no such variability is observed with (10b): the quantifier unambiguously has low scope. Then fact that the agreement probe on the copula in (10b) is still able to 'see' the argument and agree with it provides evidence that BCS passive *v* is not a point of spell-out, i.e., it is not a phase; (10c) illustrates.[5]

[5] It is a stipulation at this point that BCS *a* is a (DM) phase head; I argue for this conclusion based on independent evidence in Bešlin in prep(b).

(10) a. Svi studenti ni-**su** uhapšeni.
all students not-are arrested
NEG>ALL; ALL>NEG

b. Ni-**su** uhapšeni svi studenti.
not-are arested all students
NEG>ALL; *ALL>NEG

c. [$_{CopP}$ *cop* [*u*φ:3pl] su [$_{NegP}$ *Neg* ni- [$_{aP}$ *a* -n [$_{vP}$ $v_{(pass)}$ -e [$_{\sqrt{P}}$ √uhaps- [$_{NP}$ [φ:3pl] svi studenti]]]]]



Note that, while similar on the surface, this is *not* the same configuration as the one that led Chomsky (2001) to postulate PIC2 in the first place. Looking at sentences like *There is expected to arrive a man*, Chomsky notes that the original formulation of the PIC, where the phase is spelled-out as soon as it is completed, is too strong, because the probe on the matrix auxiliary needs to cross at least one phase boundary to agree with the DP *a man*. However, in the BCS case, the agreement relation is crossing *two* categorizers, and hence two potential phase heads. Since Bešlin in prep(b) shows that *a* is a (DM) phase, we can accommodate the existence of agreement on the auxiliary if we allow passive *v* to be non-phasal.

There is a potential caveat here with (10), one that I think does not ultimately threaten the cogency of the argument. What if the passive argument moves to spec *v*P and the participle moves even higher? After all, this would give us the same linear order in (10b). On the view that passive *v is* a phase, spec *v*P counts as a phase edge; the agreement probe on the auxiliary would be able to see the passive argument in that position, and the scope facts would still be borne out. As a retort to this objection, first notice that while the movement option may be available, there is no evidence that it is obligatory in BCS (see e.g., Stjepanović 1999). Therefore, the real argument comes not from the fact that agreement with the low passive argument is *possible*, but from the fact that it is *obligatory*. If passive *v* were phasal and the argument stayed in situ, we would expect no agreement on T. Combining this with the movement option, we would expect surface-level optionality for agreement in (10b), contrary to fact.[6] These agreement facts, along with the allomorphy and allosemy facts from section 3, suggest that passive *v* is not phasal in BCS.

5. Legate's diagnostics applied to BCS. In this section I apply Legate's diagnostics to BCS passive participles and show that they return the same results as in English, suggesting that spec passive *v*P is a potential movement target. Let us start with reconstruction for binding. In the passive sentence in (11a), the idea is that the bracketed constituent cannot obey the relevant binding conditions in the surface position (no binder for the anaphor *svojoj* 'self.MASC') or in the base position (the R-expression *Marija* is bound by the pronoun *njom* 'her'). Given that the sentence is grammatical, there must be an intermediate stopping point for the bracketed constituent in spec, (passive) *v*P, where both binding conditions are obeyed at the same time. We can compare (11a) to the ungrammatical sentence in (11b) where there is a binding violation even in the in the intermediate position–this further suggests that (11a) is good because of the availability of the intermediate stopping point.

[6] Surface-level agreement optionality does exist in BCS, albeit very exceptionally (see Bešlin in press(b)).

(11) a. [Na kojoj svojoj$_i$ žurci na kojoj je bila Marija$_k$]$_1$ je svaki čovek$_i$ ✔$_1$
on which self.M party on which AUX was Mary AUX every man
upoznat s njom$_k$ ✗$_1$?
introduced with her
'At which of his parties Mary was at was every man introduced to her?'

b. ∗[Na kojoj svojoj$_i$ žurci na kojoj je bila Marija$_k$]$_1$ je ona ✗$_1$ upoznata
on which self.M party on which AUX was Mary AUX she introduced
sa svakim čovekom$_i$ ✗$_1$?
with every man
'At which of his parties Mary was at was she introduced to every man?'

We can make the same point with QR in ACD. Recall from section 1.2. that ACD forces QR, and that we can use scope-sensitive elements to force QR to remain below a certain position. We can use an existentially quantified subject for this purpose. In order to obtain the most salient reading, in which the existential scopes over the universal quantifier, QR must be to a position no higher than the subject. The perfect candidate for the landing site is spec, passive *v*P.

(12) Neka žena je [VP$_1$ predstavljena [svakom muškarcu kojem si i ti [VP$_2$ e]]].
some woman AUX intoduced every man which AUX EMPH you
'Some woman was introduced to every man you were.'

If Legate's tests conclusively diagnosed phasehood, we would find outselves in a clash, with the diagnostics from sections 3 and 4 identifying BCS passive *vP* as a non-phase, and Legate's tests suggesting that it is a phase. However, it is important that Legate's diagnostics identify *potential* stopping points for movement, while one of the goals of phase theory is derive successive-cyclic movement, which is arguably *obligatory*. Legate's diagnostics tell us nothing about obligatory stopping points; they tell us about a possible stopping point that is forced by binding or scope considerations. While diagnostics that invoke the locality of agreement and allomorphy/ allosemy are intuitive diagnostics for phasehood given its definition, possible stopping points in intermediate specifiers are not.

6. Discussion and conclusion. In this paper, I argued, based on data from allomorphy/allosemy and agreement that passive *v* is not a phase in BCS. On the other hand, I showed, that BCS passive *v*P is a potential stopping point for A'-movement, as evidenced by its ability to rescue potential binding violations and serve as a landing site for QR. A question that naturally arises from this discussion is the following: How can we reliably diagnose phases? What is clear is that we cannot identify phases by simply looking for evidence of movement through a specifier (contra e.g., Van Urk 2020) because some non-phases allow this kind of movement as well. Intermediate A'-movement does not diagnose phasehood if such movement is optional, or if it is driven by factors other than phasehood (e.g., binding or scope).

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