Problems of 'Problems of Projection': Breaking a conceptual tie*

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Abstract

The exocentric labelling model of Chomsky's (2013, 2015) *Problems of Projection* renders projection rather more problematic than it was previously, giving rise to numerous technical and conceptual complications, redundancies and inconsistencies. Of particular concern is the reversibility of the assumptions that are made with respect to the relation between labelling and Search, such that the opposite theory is equally coherent and delivers the same empirical results. After reviewing these concerns, a simpler conception of exocentric labelling is sketched in which all labels are uniformly added via external Merge of categorizing phase heads, turning unlabelled (uninterpreted) nonphase syntactic objects into labelled (interpreted) phases. Some conceptual and empirical advantages of the simpler system are finally considered.

Keywords: phases; labels; categories; transfer; islands

Resum. *Problemes de* Problemes de projecció. *Trencar un empat conceptual*

El model d'etiquetatge exocèntric de Chomsky (2013, 2015), *Problemes de projecció*, fa que la projecció sigui més problemàtica que abans i que doni lloc a nombroses complicacions tècniques i conceptuals, redundàncies i incoherències. És particularment preocupant la reversibilitat de les hipòtesis que es fan respecte de la relació entre l'etiquetatge i la cerca, de manera que la teoria contrària és igualment coherent i proporciona els mateixos resultats empírics. Després de revisar aquestes preocupacions, es dibuixa una concepció més senzilla de l'etiquetatge exocèntric en què totes les etiquetes s'afegeixen uniformement mitjançant la fusió externa de nuclis de fase categoritzadors, que converteixen objectes sintàctics no marcats (sense interpretar) en fases etiquetades (interpretades). Es consideren finalment alguns avantatges conceptuals i empírics del sistema més senzill.

Paraules clau: fases; etiquetes; categories; transferència; illes

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1. Introduction

This paper raises the methodological question of how we should proceed in the case of a conceptual tie, as can sometimes arise when pursuing the minimalist research program. In cases where there appear to be multiple principled solutions to a theoretical problem that conform equally well to Chomsky's *Strong Minimalist Thesis* (SMT), and which make identical empirical predictions and account for all the same facts, how can we decide which solution, if any, is to be preferred? I argue that the exocentric, projection-free syntactic model of *Problems of Projection* (POP; Chomsky 2013, 2015) has led to exactly such an impasse, in which two opposing but equally plausible and coherent sets of assumptions about the relation between labelling and Search have been claimed by different researchers to yield the same results (namely, opacity/freezing effects). In such cases, where we have contradictory assumptions that cannot both be right, it may well be that both are wrong, indicating perhaps a deeper conceptual flaw common to the general approach. We therefore need to identify and clarify where this 'wrong turn' might lie, in order to make progress again. To this end, I suggest in this paper a minor course correction which charts an alternative path towards a syntax-external, phase-level labelling algorithm (LA) of the POP kind, i.e. one which shares the same objectives of eliminating theory-internal notions of projection and endocentricity under the SMT. This alternative approach accounts for the same freezing/opacity facts as the POP-LA whilst avoiding and resolving the aforesaid conceptual stalemate. We proceed, briefly, as follows: Section 2 reviews some of the conceptual and technical problems inherent in the POP approach; the resulting impasse is outlined in section 3. Section 4 then sketches a possible way to break the tie by pursuing a Merge-based approach to phase-level labelling that equates labels with phase heads and allows us to sidestep and possibly even reconcile the conflicting viewpoints of the Search-based POP-LA.

2. Problematic projection

Taking labelling to be necessary (only) at the interface in order to determine the appropriate interpretation of a syntactic object (SO), Chomsky 2013 (POP), 2015 (POP+) proposes a Search-based algorithm which operates at the phase level and identifies the "designated element" that provides the relevant information to the interface. In the simplest case, i.e. SO = {LI, XP}, *minimal search* immediately detects and identifies the head (LI) as the label. However, as is well known, this labelling algorithm (LA) breaks down when a symmetrical structure is encountered, such as {XP, YP}. In such cases, the symmetrical SO is made interpretable (labellable) in one of two ways: either (i) by creating an asymmetry through internal

Merge (IM) of XP or YP, or (ii) by seeking a tolerable symmetry via a shared label common to both X(P) and Y(P). Let us accept the premises and the kind of LA they entail (i.e. syntax-external labelling, divorced from the operation Merge itself, with the latter producing exocentric structures).[1] Setting aside some minor technical questions that arise when this system is pursued in greater detail,[2] it seems to me at a more fundamental level that both (i) and (ii) rely on additional assumptions that require nontrivial departures from the SMT (i.e. departures from minimal expectations) and are thus on rather shaky ground, conceptually speaking.

Firstly, route (i) necessitates the assumption that IM creates "discontinuous elements" (DEs) that are "invisible to LA" (POP: 44). The idea that lower copies do not 'count' or are invisible to syntactic operations is, of course, not a new one, and goes back at least to the *trace invisibility* of Chomsky (2001), in which lower copies would not induce intervention effects, i.e. they were invisible to Agree. Insofar as LA is itself a kind of Search procedure, like Agree, this invisibility might seem perfectly consistent and plausible – Search of any kind (Agree or LA) only seems to detect the head of a chain. Although we can of course define chains, terms and occurrences in the way we need to ensure this result (as POP: 44 does), it seems counter to the minimalist spirit, as any such legalistic definitions are surely exactly the kind of "descriptive technology" (Chomsky 2008) that add to the "first factor" (in terms of Chomsky 2005) and thereby take us further from the SMT. As far as the syntax is concerned, the minimal assumption is surely that copies are just that: identical copies of the self-same element; what holds of one copy should hold of them all. Each copy contains the same set of features, and since intervention and labelling both operate on features, then if a higher copy can intervene or value a probe or return a label to LA then a lower copy should equally be able to do so. Anything else is a stipulation and a departure from the SMT, requiring careful justification (and in terms of empirical justification, there are well-known cases of Agree with lower copies in the literature, most notably in Holmberg & Hróarsdóttir 2003).[3]

1. I'm not entirely convinced that this *is* the only possibility under the "simplest" conception of Merge as bare set-formation. Given the undeletable Edge Features (EFs) of Chomsky 2008 as a property of LIs, we could still retain an inherent asymmetry to Merge itself (i.e. Merge is always *to* something) without Merge(α,β) changing any properties on either α or β, in line with the No Tampering Condition: EF on α (or β) does not delete and remains unchanged. The 'selector' is thus always identifiable as the *currently accessible head*, i.e. the LI whose EF is currently driving the computation – essentially the 'locus' of Collins's (2002) label-free system. Indeed, this is claimed to be the "simplest assumption" for detecting the current probe in Chomsky (2007: 23). In this way, EFs could plausibly act as labels (e.g. by identifying the "designated element" that provides the relevant information to LA); see Cecchetto & Donati (2010, 2015) for such an EF-based, 'internal' approach to labelling. Since the label only changes when a new LI ('selector') is merged, it is clear that cases like {XP, YP} pose no particular problem for such approaches.

2. For example, the question of which features belong to the set of "prominent features" (POP: 45), i.e. potential labellers, for the purposes of the LA, as well as other attendant complications (such as "weak" variants of these features, as claimed for English φ on T in POP+, requiring 'strengthening' via a shared label for labelling to succeed; see Goto 2017 for a critical discussion of the strong/weak-labels hypothesis).

3. See also Takita, Goto & Shibata (2016) and Stockwell (2016) on this point. Several of the arguments and criticisms made in this section are also made by these authors.

Even at a conceptual level, the DE stipulation is surely to be excluded on the grounds that it seems to require the properties of an embedded SO to be altered (to render the lower copy invisible), in violation of the No Tampering Condition (NTC). In effect, the DE assumption exceptionally allows IM to turn (1a) into (1b) – in this case, we have raising of IA out of v*P as one of the ways of desymmetrizing {EA, v*P} for LA purposes, discussed in POP: 44 (17), footnote 34.

(1) a. IA … {EA, {v* {V, IA}}}   → IA … {EA, {v* {V, ~~IA~~}}} →

    b. IA … {EA, {$\underline{v}$*}}   → label = v*

Whilst other operations, such as Transfer, might well be able to remove structure in this way and thus render it invisible to the syntax (as captured, for example, under the *Phase Impenetrability Condition* (PIC) of Chomsky 2000, 2001),[4] simplest Merge conforms to the NTC. In tampering with structure in this way, IM in (1) seems to blatantly flout the NTC. Following Chomsky (2008, 2013 and elsewhere), I take the NTC to be a deep, third-factor computational principle. As such, it takes precedence over an FL-specific stipulation like DE – that is, it would be preferable to do without DE than renounce or weaken the NTC.[5] An alternative LA that does not rely on DE would therefore seem desirable.

Secondly, route (ii) does not resemble other instances of Search, such as those involving Probe-Goal Agree. The latter – minimal search under Probe-Goal – is *not* confounded by {XP, YP} structures, unlike Label-Search, and there is no similar condition on Probe-Goal Agree such that 'deep search' into an XP is only possible if a parallel search takes place into YP, its sister. Rather, the Agree-probe just keeps searching deeper and deeper until it finds the kind of thing it's looking for (up to PIC), whether that goal be located inside XP or YP, with no equivalent arbitrary requirement that searching into non-heads yield two goals that share the same feature. Quite why minimal search has these unexpected and anomalous additional properties just in the case of labelling but not in the case of Probe-Goal needs some kind of justification instead of its current stipulation; otherwise, this again seems to take us further from the SMT, not closer.[6]

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4.   Indeed, the use of Transfer in the service of labelling/LA to achieve precisely this effect has been proposed by Narita (2014). See also the more general point discussed below.
5.   Alternatively, we could keep DE and seek to eliminate the NTC, which is what Gallego (2017) opts for.
6.   Let's also not forget that the starting point in POP – the initial 'problem of projection' from which the labelling discussion and the development of LA proceeds – is the question of how and why [NP, TP] is labelled T and not N, i.e. why NP is interpreted as the specifier of TP and not vice versa (cf. POP: 42 (16)). The shared label for this SO which the LA ultimately arrives at, *viz.* <φ, φ>, does not solve this problem. It implies that this SO is interpreted as a nominal after all (interpretable φ being a property of NPs/DPs) – surely the wrong result. Worse, T's φ is *un*interpretable, being a φ-probe inherited from C, and thus will never reach the interface (indeed, the only reason it is inherited from C at all is to enable its immediate deletion, if the rationale in Richards 2007 is correct). If labels are needed at the interface for coherent interpretation, then <uφ, iφ> seems a pretty dysfunctional label for TP.

Thirdly, and more generally, the motivation for POP's external LA (i.e. the need for SOs to receive the proper interpretation at the interface in a projection-free syntax) sits awkwardly with the use to which it has most widely been put in the literature – *viz*. as a local, syntax-internal trigger for (successive-cyclic) movement, via route (i). Thus labelling symmetries of the {XP, YP} kind necessitate, and trigger, an immediate resolution in the syntax (even though the labelling issue only arises and should only be detectable at the phase level, when the LA finally applies[7]). Interestingly, whereas POP: 44 makes a virtue of how successive-cyclic movement is now "forced" by the need to resolve a labelling ambiguity at each intermediate step (i.e. each phase edge, all having the symmetrical form {$_\alpha$ XP, YP}), this is no longer the case under the revised perspective of POP+, which makes it clear that there is in fact no need to "force" (i.e. trigger) *any* movement or instance of Merge under the simplest system of free Merge.[8] As such, the intermediate movement steps are just *one* derivational option (the one that happens to yield labellable structures by LA, perhaps, but still, they are not *forced*). Therefore, even without the LA-based assumptions underlying route (i) that provide a need to create asymmetric structures via IM (cf. above), these intermediate movements would still be possible, given that "Merge applies freely, including IM" (POP+: 10).

Conceptually, however, it seems odd to create an artificial problem just in order to force or ensure its resolution,[9] as there is then always an even simpler way to resolve it (and thus one that comes closer to the SMT), which is not to create the problem in the first place. In this case, the labelling ambiguity that arises at each phase edge would be equally well resolved by not moving to each phase edge in the first place (and thus not creating each symmetrical {$_\alpha$ XP, YP} structure at all). That is, one-fell-swoop movements (i.e. *non*-successive-cyclic derivations), skipping the intermediate positions entirely, would be equally good (i.e. labellable) under the LA (indeed, they'd conform even more straightforwardly to the LA, as neither route (i) nor route (ii) would be required: we'd just have the simplest case of {H, XP} at each phase edge instead) – so really, it turns out that successive-cyclicity isn't forced *at all* by LA. The latter wants to label each phase edge as if the raised XP was not there, so why put it there at all? There must, then, be some independent factor that forces these intermediate movements to just these positions (i.e. phase edges), and indeed we already have such a thing: cyclic Transfer (/PIC), which not only necessitates these periodic stop-overs *at*

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7. The implied lookahead here is unfortunate, though not real, as we can simply view the choice of *not* moving further as a derivational option that is filtered out at the interface (by LA). See also the following discussion and footnote 8.

8. Chomsky (2015: 10-11) explicitly rejects "the lingering idea, carried over from earlier work, that each operation has to be motivated by satisfying some demand. But there is no reason to retain this condition. Operations can be free, with the outcome evaluated at the phase level for transfer and interpretation at the interfaces."

9. Such moves were of course commonplace in earlier minimalism, in which imperfections such as 'viral' uFs would be introduced into a derivation in order to trigger particular operations that would check or delete them. As with all such movement triggers, including the use of LA-based symmetries at issue above, the derivation would converge equally well if these imperfections were not introduced to begin with.

the positions where we find them (which the LA does not do) but also accounts for the *initial* movement step too (e.g. of a *wh*-object from its base position in the complement of a verbal head), something which the LA does not do. The latter thus seems doubly redundant as a way of motivating movement, as it is at most just a part of the picture (the 'movement *from*' part, but not the 'movement *to*' part), and an unnecessary part at that.

   In fact, it's triply redundant. As noted above, if we're to assume that IM can violate the NTC in the manner implied by the DE stipulation, as in (1), then we should certainly also assume that Transfer can do this too (not least as Transfer stands outside the purview of the NTC, which holds only of Merge). In that case, the very points at which the unlabellable intermediate steps of the form $\{_\alpha$ XP, YP$\}$ arise, i.e. phase edges, are precisely those which Transfer will alter through the spelling-out of the phase head's complement, turning YP into, effectively, Y (no less plausibly than IM/DE would). That is, Transfer will always turn (2a) into (2b), which is labellable at the phase level via minimal search, with LA identifying Y (the phase head) as the label without any need for XP to move.

(2)   a. $\{_\alpha$ XP, YP$\} = \{_\alpha$ XP, $\{$Y, ZP$\}\}$ $\rightarrow$ Transfer ZP: $\{_\alpha$ XP, $\{$Y, $\cancel{ZP}\}\} \rightarrow$
       b. $\{_\alpha$ XP, $\{\underline{Y}\}\}$ $\rightarrow$ label = Y

   Essentially, what this means is that a Narita (2014)-style labelling through Transfer will always arise at precisely the points in the derivation where the movement-triggering symmetry is meant to arise. This has not gone unnoticed in the literature; indeed, Takita, Goto & Shibata (2016) gamely exploit (2) as a possible alternative way to label these structures, with some interesting consequences for the analysis of existential constructions. However, there comes a point when you have to ask if the game is still worth the candles. The numerous redundancies, inconsistencies and other conceptual concerns raised above lead one to suspect that there might be an even simpler way of going about phase-level labelling under the "simplest conception of Merge" (POP: 42) and a projection-free UG.

3. Searching down the rabbit hole

This suspicion is reinforced in light of a conceptual stand-off that arises when LA failures are not repaired (or reparable) by either route (i) or route (ii) and are thus claimed to underlie illegitimate or nonconvergent derivations, i.e. to be a source of deviance or uninterpretability at the interface. In such cases, mutually incompatible sets of assumptions have been brought to bear on the same empirical problem(s), yet they seem to offer equally coherent and plausible theoretical accounts of the same phenomena. More specifically, when it comes to deciding on the relation between labelling and islands (opaque domains, freezing effects, etc.), it seems that no matter which way we turn, we get the same answer. In striving for the SMT, we've lost our conceptual footing.

   Of specific concern here is the existence of two compelling, but competing, lines of research into LA-derived islands. On the one hand, a lack of label has been

claimed to underlie opacity, most notably by Goto (2015, 2016); relevant here are also Hornstein & Nunes's (2008) claim that adjuncts may go unlabelled and Blümel's (2017a) treatment of root/V2 clauses as labelless, as the island status of both of these (adjuncts and V2 clauses) can then be derived from the LA on the assumption that unlabelled structures are opaque – for Goto, they are "invisible to Search". Goto (2015) makes the case that all the familiar kinds of islands, including CED domains, coordinate structures, CNPC, etc., involve unlabelled SOs. Once labelled, an SO becomes visible to Search.[10]

By contrast, the opposite state of affairs has also been proposed, i.e. that it is labelling that freezes an SO and renders it (internally) opaque for (sub)extraction. An SO is then transparent *until* it is labelled, at which point it becomes, effectively, *in*visible to Search. On such approaches, symmetrical structures – those with a shared label, by route (ii) above – are inherently "stable" and resist any further manipulation: this is the stance defended by Narita (2015) (based on his and Naoki Fukui's "symmetry-driven" model of the syntax), and it is the one which POP+ comes closest to embracing in its approach to criterial freezing and Rizzi's "halting problem" (i.e., movement beyond the shared-label position would result in the wrong label at CI, and thus the wrong interpretation, though this relies on the problematic DE supposition reviewed above). Blümel's (2012, 2017b) system likewise derives freezing effects from symmetrical (shared) labelling and thus falls within this camp.

When it comes to labelling and its relation to (sub)extraction, then, it seems we're damned if we do (Narita), and damned if we don't (Goto). Both conceptions seem equally plausible. Goto's contention that unlabelled SOs are 'invisible', perhaps not (just) at the interface but within the narrow syntax too for certain operations, and that they are opened up to such operations through labelling, has intuitive appeal, and there are credible precursors in the cyclic expansion of search space (Rezac 2003 comes to mind; Rackowski & Richards 2005 is another clear antecedent in terms of rendering phases internally accessible via prior Agree/Search). Likewise, the opposite contention that labels 'seal off' an SO and mark it as complete and inaccessible for further manipulation, possibly as part of the general packaging of SOs that goes on at the phase level (Transfer, LA, etc.), makes plenty of sense from the phase-cyclic computational perspective. Neither approach is without its conceptual problems, too (whether it be DE or those raised in footnote 10). When faced with such an empirical, theoretical and conceptual tie, with no obvious arguments to tip the balance one way or another, we run the risk of stalemate and theoretical stagnation. How do we decide on the road ahead?

10. Conceptually, this sits uneasily with POP's claim that LA is itself a Search-based procedure, as then it is unclear how LA could ever label anything – in order to be visible to LA/Search and thus receive a label, an SO would already have to have a label. The Goto approach also has to allow certain SOs to remain unlabelled at the interface, departing from POP. I see the former issue as more problematic than the latter; indeed, the latter is potentially quite desirable (see section 4 below), as many of the problems with the POP-LA system stem from it trying to label *too much*. For an 'internal' approach to labelling that likewise reduces islands to lack of label, see Cecchetto & Donati (2012, 2015).

Given the other issues surrounding the POP-LA framework touched on in section 2, it seems to me that the best way to get our bearings back and reset our conceptual compass is to retrace our steps a little and venture down a slightly different path.

4. Another phase–label fable

One way to break the deadlock and dig ourselves out of the apparent hole is to go back and ask ourselves if the POP-LA really is the simplest approach to labelling that we could imagine under the SMT. The best possible scenario – i.e., the LA that comes closest to the SMT – would be not to need an LA at all. From the minimalist perspective, this is perhaps where we should have started, to first see how far we could get without assuming a special LA of any kind, only opting for more complicated solutions when this simplest system, without an LA, breaks down or proves inadequate. After all, why do we need an LA? Why search for labels at all? If the reason is to render SOs interpretable at the interface (in terms of their categorial type), then a Search-based algorithm (with all its attendant complications) looks like overkill. It's doing too much; it's *labelling* too much. As Hornstein & Pietrowski (2009) and others have argued, it is not clear that every SO needs to be labelled at the interface, for the purposes of interpretation. This is especially true from the perspective of phase theory (Chomsky 2000 *et seq*.). Phases just are the units of interpretation. They are transferred as units and show semantic, phonological and syntactic integrity as interpretive units (see especially Chomsky 2001 on this). It is unclear that anything smaller than a phase is interpreted at the interface. Labelling anything smaller than the phase is then redundant. Part of why phases exist, then, might be precisely to provide labels to the SOs that *do* get interpreted. If we minimally (and maximally) assume that we just label what we need to label, i.e. just those SOs which are actually interpreted, then labels can simply be added, uniformly, by external merge of categorizing phase heads.[11]

This is already widely assumed for lexical/event structure. As POP+ also notes, in the *Distributed Morphology* tradition of roots and categorizers, a root is inherently unspecified for its label, and receives this information externally, from the structural context, via heads like v – i.e., via phase heads (see, e.g., Embick 2010; Marantz 2013). If at least *some* phase heads act as labels (i.e. the 'categorizers' of DM and other exocentric approaches, such as Borer 2003, 2014), then maybe we should try just equating the two – i.e. all labels are phase heads, and vice versa. A Merge-based approach to labelling thus emerges, based on the simplest conception of Merge (i.e. without projection), in which nonphase heads and their SOs are labelled by phase heads (hence the alternating P-N-P-N-… sequence of phase heads

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11. As Juan Uriagereka points out (p.c.), this is as expected from a physical perspective: not everything in physics is visible, detectable or measurable. Unlabelled SOs would then count among the class of theoretical entities that are in principle unobservable; they would be inaccessible to the conscious mind. (This would also seem to chime with Chomsky's 2017 recent speculations on related matters regarding externalization, inner speech and the language of thought.)

and nonphase heads which seems to characterize the clausal spine; cf. Richards 2007). As long as the phase head is detectable at the phase level (as presumably it must be, quite independently of labelling, as the trigger of Transfer and the driver of phase-level operations), then identifying the label at the phase level is trivial – it's just the phase head.

The idea, then, is that we simply generalize the DM roots-and-labels approach to all cases, i.e. from roots and heads to all labelless XPs. Then, just as a category-less root (R) receives its label externally, structurally, by merging with a categorizing functional head (K) such as *v*, *n*, etc., so an unlabelled (nonphase) XP receives its label externally, structurally, by merging with a phase head. The basic cases seem easy enough to capture, and are given in (3).[12]

(3)   {R, DP}   (= nonphase, not labelled/interpreted)

       {$\underline{v}$, {R, DP}}   (= phase, interpreted with label *v*)

       {EA, {$\underline{v}$, {R, DP}}}   (= same phase, same label)

       {T, *v*P}   (= nonphase, not labelled/interpreted)

       {DP, TP}   (= nonphase, not labelled/interpreted)

       {$\underline{C}$, {EA, TP}}   (= phase, interpreted with label C)

Following POP: 47, the base pair of every tree, involving merger of two heads (LIs), consists of a root and its categorizer: only one of these two items thus provides a label. For Merge{X, Y}, with X the phase head (categorizer) and Y the root, X is therefore the label. Suppose the root (R, a nonphase head) first combines with an internal argument, yielding e.g. {R, DP}. This will then be labelled, externally, by merger of the phase head (e.g. *v*), so that {*v*, {R, DP}} is the minimal labelled (and thus interpreted) SO. Since {R, DP} is smaller than a phase, it is not interpreted anyway, and so it does not need a label. For {EA, *v*P}, the detectable phase head (i.e. the one triggering Transfer and other phase-level operations) is *v*, hence *v* is also detectable as the label (at least in the usual case; see below). Following POP+, the head T is essentially like a root (it is too "weak" to label on its own); it is feature-less, inheriting its properties from C (cf. Chomsky 2007, 2008). Thus {T, *v*P} is the same as {R, DP}: it is labelled externally, by the phase head (C).[13] Assuming a cyclic construction of the CP, with IM of the subject preceding Merge-C under Free Merge (following POP+: 10), the SO {SPEC, TP} is likewise labelled by the phase head C via merge of the latter, yielding the minimal labelled

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12. Following Chomsky (2007 *et seq.*), I take phase heads to be the locus of uninterpretable (unvalued) features. Valuation of these features (via Agree) renders the phase head inactive and triggers Transfer.

13. Feature inheritance might equally well provide the SOs {T, *v*P} and {R, DP} with a label; they could simply inherit the label of the phase head that selects them (i.e. C or *v*, etc., respectively). It is unclear that 'TP' is categorially distinct from CP, any more than 'RootP' is categorially distinct from *v*P, etc. Note a possible prediction here: if T is essentially a root, categorized and labelled by C, then lexical roots might themselves be directly categorized by C, a potential source for prepositions and the well-known parallels between C and P.

SO = {C, {SPEC, TP}}. Again, the smaller SO ({SPEC, TP}) does not need its own label, as it is sub-phasal and thus never interpreted as such. Finally, DP (or nP) is likewise a labelled root, labelled by a phase head (D or n^*), following suggestions for the treatment of nominal phases in POP and Chomsky (2007: 25).

Insofar as we can get away with just labelling what we actually need to label (i.e. the minimal phase-label story sketched above), no additional LA is required. Furthermore, this 'simplest' approach to labelling under the SMT has the further advantage of deriving the same island/opacity effects that led to the conceptual impasse under POP-LA that we saw in section 3 above. Freezing effects will arise as 'wrong label' effects, just as POP+ proposes for these, but without the inherent uncertainties (reversible assumptions) of the latter approach. Essentially, the problem of Merge{X, Y} under POP-LA, where both heads would yield a label (resulting in a conflict or ambiguity at the interface), now obtains in the specific case of Merge{XP, YP} where both XP and YP are phases (and in particular, phases with active edges). That is, the only place where a labelling symmetry will arise under the alternative phase-label approach outlined above is where two phase heads come together at the same time, in a single SO, with both phase heads then offering a label for that SO at the interface. Islands, then, are not due to a lack of label (the Goto approach) or to a shared label (the Narita/POP approach); rather, they are due to there being *two* labels (leading to an anomalous, ambiguous or gibberish interpretation at CI).

The technical implementation of this could be achieved by means of undeletable Edge Features on phase heads, with each such EF providing a label (cf. footnote 1; see Richards 2014 for an implementation along these lines). It might also be possible to reduce it to the integration of separate workspaces (thus reinventing Uriagereka 1999 yet again, with left-branch compression and its resultant CED effects now reconceived in terms of labelling rather than the LCA). Left branches (such as the EA DP), as separate phases of the derivation, would be constructed in parallel and then integrated into the clausal spine. In the normal case (with no subextraction), the DP (EA) phase is constructed, transferred and labelled by its phase head (D/n). This labelled SO can then be added to the workspace of the v^* phase for merger with v^*P. However, in order to extract something out of the DP/ EA, the latter's workspace must be kept open: there are then two active or open workspaces – the phase we're moving out of (the DP/EA) and the phase we're moving into (v^*P). The result is an SO at the v^*P phase level, {DP, v^*P}, which contains two active phase heads, and therefore two potential labels. Whatever the technical implementation, the essential idea is that island SOs result from a non-uniform composite label, such as <D, v^*> for subject islands, which confuses the interface (and/or leads to a deviant interpretation).

Islands are thus predicted to emerge just where two phases (i.e. two phase-labelled XPs), of different categories,[14] are merged together and must both remain

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14. The Coordinate Structure Constraint seems harder to capture, but its resolution via Across-The-Board movement follows naturally as, in such cases, both active phase heads would provide the same label, yielding a shared, uniform composite label equivalent to that obtained by route (ii) under the POP-LA.

'active' (i.e. both the *source phase* and the *target phase* for subextraction), and indeed this configuration is implicated in at least the following familiar island types:

(4) a. Subject islands (CED): $*\{\underline{n}P, \underline{v}*P\}$

b. Adjunct islands (CED): $*<\underline{v}P, \underline{CP}>$

c. Free-relative islands: $*\{\underline{n}P, \underline{CP}\}$

d. CNPC: $*\{\underline{n}P, \underline{CP}\}$

The case of (4d) warrants further comment. The CNPC is arguably much more general than usually thought, as persuasively argued by Bošković (2015). The exceptionality of verbs (with respect to other lexical categories) in allowing extraction out of their complements now follows if the categorizing phase head in the case of *n, a* merges directly with the root, severing the root from its internal argument, so that the dependent (complement XP) of a noun is sister to $\{n, R\}$, as in (5a), whereas the root merges directly with the dependent/complement in the case of verbalization, as in (5b).[15]

(5) a. $\{\{n, R\}, XP\}$

b. $\{v, \{R, XP\}\}$

This structural difference in turn follows independently from the presence of a φ-probe on *v* (which enters into φ-Agree and Case-valuation with the dependent object), thus requiring a Probe-Goal configuration (i.e., Search-sister) to obtain between the phase head/categorizer and the object just in the case of verbs, which is not possible if the phase head merges directly with the root, as in (5a).[16] If the nominalized root $\{n, R\}$ merges with the noun's complement (e.g. CP), we have the configuration in (4d), hence the island effect *qua* labelling conflict. Thus CNPC effects obtain where (5a) instantiates (4d), with XP = CP, yielding the nonuniform composite label $*<n, C>$. The exceptional extractability out of verbal complements is then the direct, structural result of the categorizing phase head *v* merging higher, above the extraction site, yielding an SO of the form in (5b). As such, verbs do not instantiate an SO of the (4d) kind, involving the merger of two phases, unlike the other categories.

For the same reasons, we can immediately see why *phase sliding* (and similar ideas) will have a 'melting' effect on islands (cf. Gallego 2006, 2010): raising of the phase head (such as obtains under *v*-to-T movement) places the categorizing

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15. POP: 46, footnote 43, proposes (5a) for *v* + Root combinations. I suspect on the above grounds that it holds for all categories *apart* from *v*. See Alexiadou (2014) for relevant discussion and a different take on the severing of arguments from roots.

16. Gallego (2014) exploits the presence of this φ-probe on *v* (versus its absence on *n, a*) in order to account for another highly salient difference between verbs and other categories, namely why arguments are obligatorily present only with verbs.

head, and thus a singleton/uniform label, above the extraction site, re-establishing (5b), so that the lower labelling failure is rescued at the phase level; cf. (6).

(6)   *'Melting' via head movement:*

$$P_1 \ldots \{\{P_2, XP\}, \{P_1, YP\}\}$$
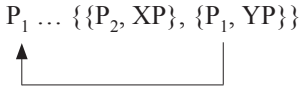
More radically, and perhaps tentatively, the basic configurational difference between (5a) and (5b) reveals a further redundancy that might now be eliminated. The categorial distinction between verbs and nouns (or non-verbs) is duplicated in (5): it is specified both on the categorial type of the phase head (v, n) as well as via the structural difference itself. The fact that human language involves two basic categorial types (nouns and verbs; or rather, [+N] and [-N]) may reduce to the two logical possibilities for combining roots with their categorizers and complements, allowing us to speak of a generalized lexical categorizer, K:

(7)   a. $\{\{K, R\}, \{XP\}\}$ = "[+N]"

     b. $\{K, \{R, XP\}\}$ = "[-N]"

This further derives the fact that derivations terminate in nouns (or rather, in a [+N] category): this is what emerges from base-Merge of two heads/terminals, i.e. $\{K, R\}$, as in (7a).

5. Conclusion

I leave a more extensive elaboration of the details of this proposal to further research. My intention here has simply been to enunciate the argument that recent developments in minimalist generative syntax, in particular the POP-LA, might be leading us down something of a conceptual blind path (albeit an undoubtedly productive and inspiring one), and that the simplest LA under SMT – the ideal scenario in which there is *no* LA per se, with phase heads providing the external labels for nonphasal SOs (as already widely assumed for roots in DM and other constructionist/exocentric approaches to categorization) – is at least worth exploring before we abandon it in favour of more complex, Search-based solutions.

References

Alexiadou, A. (2014). Roots don't take complements. *Theoretical Linguistics* 40: 287-298.

Blümel, A. (2012). Successive-cyclic movement as recursive symmetry-breaking. *Proceedings of WCCFL* 30: 87-97.

Blümel, A. (2017a). Exocentric Root Declaratives. Evidence from V2. To appear in L. Bauke & A. Blümel (eds.). *Labels and Roots*. Berlin: De Gruyter.

Blümel, A. (2017b). *Symmetry, Shared Labels and Movement in Syntax*. Berlin: De Gruyter.

Borer, H. (2003). Exo-skeletal vs. endo-skeletal explanations: syntactic projections and the lexicon. In J. Moore & M. Polinsky (eds.). *The Nature of Explanation in Linguistic Theory*. Chicago: CSLI/University of Chicago Press, 31-67.

Borer, H. (2014). The category of roots. In A. Alexiadou, H. Borer & F. Schäfer (eds.). *The Syntax of Roots and the Roots of Syntax*. Oxford: OUP.

Bošković, Ž. (2015). From the Complex NP Constraint to everything: On deep extractions across categories. *The Linguistic Review* 32: 603-669.

Cecchetto, C. & C. Donati (2010). On labeling: Principle C and head movement. *Syntax* 13: 241-278.

Cecchetto, C. & C. Donati (2012). Relative Structures (and other strong islands) reduced to relabelling. Ms., Universities of Milan and Rome.

Cecchetto, C. & C. Donati (2015). *(Re)Labeling*. Cambridge, MA: MIT Press.

Chomsky, N. (2000). Minimalist inquiries: the framework. In R. Martin, D. Michaels & J. Uriagereka (eds.). *Step by step: Essays on minimalist syntax in honor of Howard Lasnik*, 89-156. Cambridge, MA: MIT Press.

Chomsky, N. (2001). Derivation by phase. In M. Kenstowicz (ed.). *Ken Hale: a life in language*, 1-50. Cambridge, Mass.: MIT Press.

Chomsky, N. (2005). Three Factors in Language Design. *Linguistic Inquiry* 36: 1-22.

Chomsky, N. (2007). Approaching UG from below. In U. Sauerland & H.-M. Gärtner (eds.). *Interfaces + Recursion = Language? Chomsky's Minimalism and the View from Syntax-Semantics*, 1-30. Berlin: De Gruyter.

Chomsky, N. (2008). On phases. In R. Freidin, C. P. Otero & M.-L. Zubizarreta (eds.). *Foundational Issues in Linguistic Theory*, 133-166. Cambridge, MA: MIT Press.

Chomsky, N. (2013). Problems of Projection. *Lingua* 130: 33-49.

Chomsky, N. (2015). Problems of Projection: Extensions. In E. Di Domenico, C. Hamann & S. Matteini (eds.). *Structures, strategies and beyond: Studies in honour of Adriana Belletti*. Amsterdam: Benjamins, 1-16.

Chomsky, N. (2017). Untitled talk. *Generative Syntax: Questions, Crossroads and Challenges*. Barcelona, June 23, 2017.

Collins, C. (2002). Eliminating labels. In S. D. Epstein & T. D. Seely (eds.). *Derivation and Explanation in the Minimalist Program*, 42-64. Oxford: Blackwell.

Embick, D. (2010). *Localism and globalism in morphology and phonology*. Cambridge: MIT Press.

Gallego, Á. (2006). Phase Sliding. Ms., UAB and UMD.

Gallego, Á. (2010). *Phase Theory*. Amsterdam: Benjamins.

Gallego, Á. (2014). Roots and phases. In A. Alexiadou, H. Borer & F. Schäfer (eds.). *The Syntax of Roots and the Roots of Syntax*. Oxford: Oxford University Press.

Gallego, Á. (2017). Strong and weak "strict cyclicity" in phase theory. Ms., Universitat Autònoma de Barcelona.

Goto, N. (2015). On Labeling: In Search of Unconstrained Merge. Paper presented at the *English Linguistic Society of Japan, Workshop on Unconstrained Merge*, Osaka, November 2015.

Goto, N. (2016). Labelability = extractability: Its theoretical implications for the Free Merge hypothesis. *Proceedings of NELS 46*, vol. 1: 335-348.

Goto, N. (2017). Eliminating strong/weak parameter on T. *Proceedings of GLOW in Asia XI*.

Holmberg, A. & H. Hróarsdóttir (2003). Agreement and movement in Icelandic raising constructions. *Lingua* 113: 997-1019.

Hornstein, N. & J. Nunes (2008). Adjunction, labeling, and bare phrase structure. *Biolinguistics* 2: 57-86.

Hornstein, N. & P. Pietroski (2009). Basic Operations: Minimal Syntax-Semantics. *Catalan Journal of Linguistics* 8: 113-139.
<https://doi.org/10.5565/rev/catjl.148>

Marantz, A. (2013). Locality Domains for Contextual Allomorphy across the Interfaces. In O. Matushansky & A. Marantz (eds.). *Distributed Morphology Today: Morphemes for Morris Halle*. Cambridge, MA: MIT Press, 95-115.

Narita, H. (2014). *Endocentric structuring of projection-free syntax: Phasing in Full Interpretation*. Amsterdam: Benjamins.

Narita, H. (2015). Conditions on Symmetry-Breaking in Syntax. Paper presented at the *English Linguistic Society of Japan, Workshop on Unconstrained Merge*, Osaka, November 2015.

Rackowski, A. & N. Richards (2005). Phase Edge and Extraction: A Tagalog Case Study. *Linguistic Inquiry* 36: 565-599.

Rezac, M. (2003). The Fine Structure of Cyclic Agree. *Syntax* 6: 156-182.

Richards, M. (2007). On feature inheritance: An argument from the phase impenetrability condition. *Linguistic Inquiry* 38: 563-572.

Richards, M. (2014). Wrong path, wrong label. On the relation between labelling and left-branch opacity. Paper presented at DGfS Marburg, March 2014.

Stockwell, R. (2016). Labelling in Syntax. *Cambridge Occasional Papers in Linguistics* 9: 130-155.

Takita, K., N. Goto & Y. Shibata (2016). Labeling through Spell-Out. *The Linguistic Review* 33: 177-198.

Uriagereka, J. (1999). Multiple Spell-Out. In S. D. Epstein & N. Hornstein (eds.). *Working Minimalism*. Cambridge, MA: MIT Press, 251-282.