MOVEMENT WITHOUT DIACRITICS: GETTING MAXIMAL USE OUT OF MINIMAL MEANS
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Roberts (2010) proposes that head-movement involves no movement diacritics (EPP, EF, etc.). This account relies exclusively on substantive formal features ([F]s), with head movement occurring where a Probe Agrees with a Defective Goal, as in (1):

(1) **Defective Goal:** A Goal G is defective iff G's [F]s are a proper subset of those of G's Probe P (Roberts 2010:62).

This gives a hybrid theory of movement: XP-movement is caused by an EPP-style diacritic, head-movement is not. EPP-features have various idiosyncratic formal properties (they cannot be valued, checked, deleted, etc.), so it is desirable to develop an approach to XP-movement which eliminates them. Extending the Defective-Goal approach seems attractive as it exploits the relations among independently needed [F]s. This is our objective here.

Our proposal is that XP-movement is *like* head-movement in not requiring EPP-features, but *unlike* head-movement in arising where the [F]s of the Probe are properly included in the Goal's, i.e. the inverse featural relationship holds compared to head-movement. We therefore introduce a notion of **Defective Probe**:

(2) **Defective Probe:** A Probe P is defective iff P's [F]s are a proper subset of those of P's Goal G.

A-movement. By (2), A-movement of EA to SpecTP will only arise where T's probing features are included in those of the EA. If T lacks certain φ-features, but probes for nominal features, we expect EAs, bearing a full set of interpretable features, to raise. So we make a link between raising of the external argument to SpecTP as in English and Mainland Scandinavian, and the φ-defectivity of T. Assuming *there*-type expletives to be [Person]-bearing D-elements, the behaviour of expletives in these systems follows if T's φ-defectivity centres on [Person]. A corollary of this idea is that in languages where T clearly is not φ-defective, e.g. canonical null-subject languages, (overt) EAs do not have to raise to SpecTP: this underlies "free inversion" and the extractability of the EA over a complementizer. We treat French as having defective T in the above sense as it patterns like English and not Italian; the overt morphophonological evidence available to acquirers is not sufficient to cause them to posit a fully φ-specified T. By contrast, the (paradigmatic) morphophonological evidence from TMA marking (Schifano 2014) indicates that French T is *non*-defective in V features, hence accounting for V-movement. It is important that T's features must be seen as consisting of distinct verbal and nominal "strands", i.e. bundles of features which probe independently of one another, with the nature of the probe determining the (N/V) subset of T-features that is evaluated for (non-)defectivity in relation to the Goal. **Wh-movement**. If *wh*-elements are visible to higher probes since they contain an unvalued feature (see below), and if elements bearing unvalued features must move to the edge of a phase in order to avoid Transfer/Spellout (Chomsky 2000), then it follows that EPP-features are not needed in order to trigger *wh*-movement to the lowest vP-edge. The same holds for all steps of *wh*-movement up to the last one. At the last step, the *wh*-D will raise to "*wh*-C" as long as "*wh*-C" is a Defective Probe. We analyse "*wh*-C" in English-type languages as bearing a valued/interpretable Polarity feature, [Pol:Q], which conveys interrogative force, and an unvalued [Wh]-feature. *Wh*-DPs, on the other hand, have the inverse properties: [Pol:_] and valued [wh], as well as quantificational features of D, which C lacks. DP thus has a superset of C's features; hence C is a Defective Probe in relation to the *wh*-DP. In *yes/no*-questions, C lacks the [wh]-feature. T-to-C movement is triggered in matrix interrogatives by the [Pol:Q] feature and C's [Tense]-feature, giving C a superset of the features of T. In relatives, C has the [wh]-feature, but lacks the [Pol:Q] feature, while (assuming a raising approach) the nominal lacks unvalued [Pol], a feature we take to be associated with the DP-edge/outer

phase. The unvalued feature causing a relative DP to raise is associated with the inner nP-phase, corresponding to the nominal-internal variable which requires binding in order for the nominal to refer.

***Wh*-in-situ.** Here the counterparts of *wh*-DPs are indefinites, lacking both a [wh]-feature and [Pol:_], while C has both valued [Pol] and valued [wh] (often realised by particles on separate C-heads; Cheng 1997). So D does not have a superset of C's features and movement does not take place. Building on work pointing to the role of the internal (vP) phase-edge in licensing operations (Rackowski&Richards 2005), we assume these *wh*-DPs are bound under existential closure from the vP-edge. In some languages (e.g. varieties of Quechua, Cable 2010), an extra *wh*-particle can be added to an otherwise in-situ indefinite DP, making it move. These particles can be treated as introducing an unvalued [wh]-feature; as noted above, movement to the CP-edge, via the vP-edge, follows, given our approach. This system predicts that in cases of **optional movement**, either the moving XP has an additional feature, making the Probe defective, or the attracting head has an additional feature, making an otherwise defective Probe non-defective. In differential object-marking (López 2012), the XP has an extra feature, making it move an extra step; the same holds for topicalisation (see below). The strong islandhood of definite vs indefinite DPs (Fiengo&Higginbotham 1977) is a case of an extra feature on D rendering the DP-edge inaccessible to XP-movement, creating an island.

Canonical topicalisation and scrambling can be explained similarly. Topicalised elements have an extra "shell" with unvalued φ-features (in clitic-doubling languages, this is realised as a clitic; Uriagereka 1988); this causes movement to the nearest phase edge, as described above. At the left periphery of the root, features are valued by Speech-Act heads which are universally present (Kratzer 2009). So no movement trigger/special [F] is needed. Scrambling is the same, except scrambled categories are valued at the vP-edge by φ-valuing heads (Belletti 2004; see Sportiche 1996 on the scrambling-cliticisation link). The difference between topicalisation/scrambling and *wh*-movement lies in the latter, but not the former involving quantificational DPs requiring a left-peripheral root licensing head. Contrastive topicalisation requires a special licensor and so behaves like canonical *wh*-movement.

Word order. The movement type not treated yet is that creating head-final orders (Kayne 1994). Some OV orders (e.g. Vata; Koopman 1984) seem to require short A-movement of the object, accounted for as above. Rigidly head-final languages are problematic, however. Generally, V and its complement do not share formal features and so Defective Goals and Probes as defined above do not play a role here. Nonetheless, we want to account for "roll-up" movement in featural terms. We know languages vary in the morphological complexity of lexical verbs and nouns. Suppose that this follows from the structural point at which a categorising head (v,n) is added, i.e. that categorising heads effectively instantiate a "morphological-closure" feature whose position may vary. In rigidly head-final languages, it is located at the top of extended projections, with 2 consequences: (i) all heads in the clausal spine are defective in relation to their complements, triggering roll-up; (ii) morphology is agglutinating (2 central aspects of Haider's 2012 *OV syndrome*). But if the feature is on the lexical head, no suffixation is permitted and VO order results, accounting for the cross-linguistic tendency for analyticity in head-initial languages. OV languages with morphologically unmarked verbs and analytic verbal systems are not excluded; these are predicted to have A-movement-type O-movement, accounting for the OVX languages discussed in Hawkins (2009). Inflectionally richer VO-systems are also not ruled out; these are predicted to exhibit head-movement. Further, given that the categorising feature necessarily requires all heads defining the spine it "closes off" to behave identically, we have an account of the Final-over-Final Constraint. We thus **reduce all movement** to **inclusion relations among independently needed formal features**. If correct, this would allow us to understand movement as one respect in which syntax seeks to make maximal use of minimal means, in line with a general principle of Feature Economy.