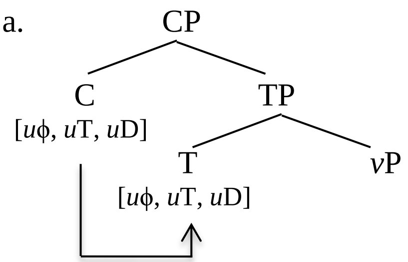
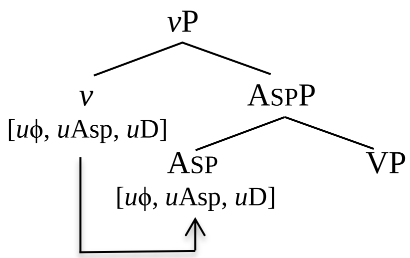
A Feature Inheritance Approach towards Head-final Languages

On the assumption that linguistic parameterization is attributed to the morphosyntactic contents of functional categories (Borer 1984; Chomsky 1995), the directionality parameter stated over a lexical head plays no role in the Minimalist syntax. Following Kayne (1994) in assuming that VO is the underlying order, Chomsky proposes that the contrast between OV languages (*e.g.,* Japanese, Korean) and VO languages (*e.g.,* English) is accounted for on the hypothesis that while the EPP feature or property on *v* triggers object shift in OV languages, the absence of the EPP property on *v* does not trigger object shift in VO languages. In his recent work, Chomsky (2008) further develops the fundamental ideas of the Minimalist Program and proposes that only phase heads, C and *v*, can be specified for probing features and EPP and T inherits its probing features and EPP from C via *feature inheritance* (FI henceforth). Chomsky (2011) also suggests that FI is a general property of all phase heads and should be at play in the domain of *v*-V, analogous to that of C-T. However, FI from C to T and FI from *v* to V do not seem to be parallel; T is a functional category and V is a lexical category. Thus, V cannot inherit the probing features from *v* and become a probe, unless it is assumed to be a functional category. Moreover, Chomsky does not discuss what happens when C's features are passed down to T: it is not clear whether all of C's features are inherited by T or features are selectively transmitted to T. Also it is not well-defined either whether these features disappear from C after they are discharged to T or they remain active on C. To fill in these blanks, I propose that the complement of *v* is not VP but ASPP, and that the functional head ASP is the beneficiary of FI from *v*, parallel to FI from C to T. In addition, I propose that FI in (1) is regulated by two principles in (2) and governed by three operational rules in (3).

(1) a.



b.



(2) Principles of Feature Inheritance
 a. *Feature Selection*: Features may be selectively inherited.
 b. *Feature Expiration*: Inherited features are only active on the heir (T, ASP) and lose their probing capability on the donor (C, *v*).

(3) Operational Rules of Feature Inheritance
 a. *Earliness*: Value features and satisfy EPP as early as possible
 b. *Economy*: Minimize the number of feature checking operations.
 c. *Multiple Agree under Antisymmetry*: Only one goal can be spelled out at the specifier of a probe in multiple agree relations.

Based on the FI system developed above, OV vs. VO order contrast between Japanese/Korean and English can be illustrated in the configuration in (4), in which the object first moves to Spec, ASPP, delivering OV order within ASPP and then the entire ASPP raises to Spec, *v*P in Japanese and Korean. Both object movement and ASPP raising are induced by the EPP specification on a feature on the probe C, [*u*D] (or [*u*Case]) and [*u*Asp], respectively.

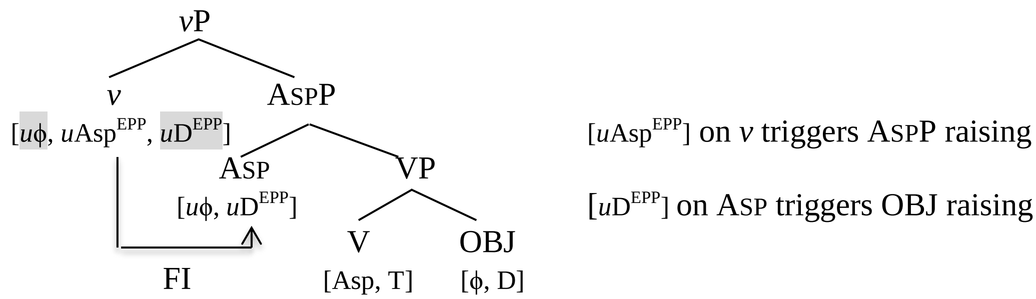
(4)	a.	$[_{vP}\ v\ [_{\text{AspP}}\ \text{Asp}\ [_{\text{VP}}\ \text{V OBJ}\ ]]]$	$v\ [u\phi,\ u\text{Asp},\ u\text{D}]$	EN
	b.	$[_{vP}\ \text{AspP}_k\ v\ [_{(\text{AspP})k}\ \text{OBJ}_i\ \text{Asp}\ [_{\text{VP}}\ \text{V}\ t_i\ ]]]$	$v\ [u\phi,\ u\text{Asp}^{\text{EPP}},\ u\text{D}^{\text{EPP}}]$	JP/KR

In English, none of *v*'s features are specified for EPP. According to the rule of *earliness* in (3a), *v* may transmit all of its features to ASP all at once, providing an opportunity for *v*'s features to be valued within ASPP. ASP can enter into Multiple Agree relations with V, which has [Asp, T] and also with the D head of the object, which has [ϕ, D]. Since none of the features on *v*, inherited by ASP, are EPP-specified, no goal raises to Spec, ASPP and the derivation converges, maintaining the underlying VO order on the surface.

In Japanese and Korean, on the other hand, *v* has [*u*ϕ, *u*Asp^{EPP}, *u*D^{EPP}], two of which are specified for EPP. Similarly to English, *v* tries to transmit all of its features to ASP all at once, in accordance with the *earliness* rule of FI. However, both [*u*Asp] and [*u*D] on ASP are specified for EPP, triggering the movement of the maximal projection of a goal with the matching features, both the DP-object and the VP, violating *multiple agree under antisymmetry* in (3c); both the VP and the object cannot be spelled out at Spec, ASPP. Asp can only inherit either [*u*Asp^{EPP}] or [*u*D^{EPP}] from *v*, not both, which results in a derivational crash.

Instead, ASP may inherit a subset of features of *v* following the principle of *feature selection* in (2a), including [*u*D^{EPP}], which triggers object shift to Spec, ASPP shown in (5). Due to *feature expiration* in (2b), [*u*D^{EPP}] on *v* no longer functions as a probing feature and remains inactive. On the other hand, [*u*Asp^{EPP}] on *v*, which has not been transmitted to ASP, probes for a goal with the matching feature and triggers ASPP raising to Spec, *v*P. But why does ASP inherit [*u*D^{EPP}] from *v*, not [*u*Asp^{EPP}] in Japanese and Korean? Which features are selectively inherited by ASP from *v*? It is the rule of *economy* in (3b) that plays a role.

(5)



Suppose that ASP inherits [*u*Asp^{EPP}, [*u*ϕ] from *v*. (Derivation A). FI of [*u*ϕ, *u*Asp^{EPP}] from *v* to ASP enables both features to be valued as early as possible and it does not violate *multiple agree under antisymmetry*; only the goal with Asp feature will raise to Spec, ASPP. To value [*u*ϕ, *u*Asp^{EPP}], ASP enters into two feature checking relationships, one with the DP-object and one with the V. In addition, *v* enters into feature matching with the object to value its [*u*D^{EPP}], which has not transferred to ASP and remains active as a probing feature on *v*. All in all, *v*'s features are valued via 3 rounds of feature matching.

Instead ASP may inherit [*u*ϕ, *u*D^{EPP}] from *v*, shown in (5) (Derivation B), in which both ϕ and D-features on ASP can be valued via a single probe-goal relationship with the object. And [*u*Asp^{EPP}] on *v* is valued against V. Although both derivations obey the rules of *earliness* and *multiple agree under antisymmetry*, Derivation B involves a smaller number of feature matching operations than A: A involves 3 rounds of feature matching, whereas B involves 2 steps. As a result, B wins over A according to the operational rule of *economy* in (3b). Hence, it provides an answer to the question why ASP inherit [*u*D^{EPP}] from *v*, not [*u*Asp^{EPP}], in Japanese and Korean.

If time permitted, I will show FI in the C-T domain in Japanese and Korean, in which TP is pied-pied and raises to Spec, CP. Not only is this proposal entirely parallel to ASPP pied-piping and raising in the *v*-ASP domain, but it also accounts for consistent head-final structure in these languages.