

## *pro* as a minimal NP

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1. In recent years, there has been a return to Perlmutter's (1971) insight that the implicit subject in the Null Subject Languages (NSL) is a fully specified pronoun that is deleted in PF (cf. Holmberg 2005 and Roberts 2010). This view has been motivated by the observation that the classic GB theory of *pro* according to which *pro* is a minimally specified nominal whose features are supplied by Infl is incompatible with the approach to feature theory developed in the Minimalist Program. In this framework, the  $\phi$ -features in T are assumed to be uninterpretable, hence unvalued. This raises a problem for the idea that subject *pro* is inherently unspecified for  $\phi$ -features. Concomitantly, recent theories of the nature of pronouns have posited a phonologically null NP as a complement of D in every pronoun. Elbourne (2005), in particular, argues that non E-type pronouns are determiners that take a kind of default null NP, the meaning of which is 'entity' or 'individual', translated as  $[\lambda x: x \in D_e . x \in D_e]$  (a property that is trivially true of any individual in the domain). Elbourne raises the question whether this null noun would be available in other places too, not just as the complement of pronouns. Here, we wish to suggest that *pro* is an instantiation of this item.

2. It is possible to isolate at least four typological patterns of NSL: **1.** Languages with rich subject agreement morphology (*consistent* NSLs), such as Italian. **2.** Languages that have agreement and referential null subjects whose distribution is restricted (*partial* NSLs), such as Hebrew, Finnish, Russian, Brazilian Portuguese (BP). **3.** Languages that lack agreement, such as Chinese or Japanese, which allow for any argument to be dropped (*discourse pro-drop* languages). **4.** Languages that only have impersonal and expletive NSs (semi *pro-drop*): a range of Creoles, Icelandic. One key property that distinguishes Types 2, 3 and 4 NSLs from Type 1 NSLs (Holmberg 2005) is that in the former a plain (3Person) NS can have a generic interpretation equivalent to English 'one'; Type 1 NSLs, by contrast, must resort to some overt strategy in order to convey this reading. One way to capture this difference is to posit that the head bearing agreement features in Type 1 languages has a [+D] specification and interpretable  $\phi$ -features (the pronominal-Agr hypothesis of Barbosa 1995, Alexiadou and Anagnostopoulou 1998, Ordoñez and Treviño 1998, a.o.). Assuming that the person features 1, 2, 3, are to be decomposed into combinations of the more primitive features  $[\pm 1]$ ,  $[\pm 2]$  (Noyer 1992), the feature composition of 3rd person is  $[-1, -2]$ . If this feature make-up is what gets interpreted, then the prediction is that 3rd person agreement in a consistent NSL will always entail exclusion of the speaker and the addressee; this is why some overt strategy must be used in order to convey the generic inclusive reading. On the other hand, the fact that Types 2, 3 and 4 of NSL pattern together in this respect suggests a common approach. Among the analyses that have been proposed in the literature on discourse *pro-drop* is the hypothesis that it reduces to *null-NP anaphora* (Tomioka 2003). Tomioka observes that all of the languages that allow discourse *pro-drop* allow (robust) bare NP arguments (cf. also Boskovic for a similar generalization based on Slavik). He shows that the interpretation of full-fledged NPs in Japanese is derived from one basic meaning, property anaphora (type  $\langle e, t \rangle$ ) and that their differences are the result of two independently needed semantic operations: Existential Closure and Type Shifting to an individual. He argues that the semantic tools used to interpret full NPs are used to interpret *pro* in Japanese and proposes that what underlies discourse *pro-drop* is the fact that languages (almost) universally allow phonologically null NP anaphora. In a language that lacks determiners, this operation will give rise to phonologically unrealized arguments. In languages in which DPs are necessarily projected, a remnant D will always show up and so this process will never give rise to a silent argument.

Barbosa (2010) proposes to extend this approach to Type 2 NSLs. In effect, Finnish, Russian and Marathi lack articles, and BP as well as Hebrew allow bare nouns in argument

position (cf. Doron 2003, Schmidt & Munn 1999). All of these languages have (definite) object drop.

Vainnikka and Levy (1999:648) discuss data from Finnish that indicate that the definite null subject (NS) raises to a high position in the clause whereas the impersonal, non-anaphoric NS must stay inside the  $\nu$ P. Under the hypothesis that the NS is a minimally specified nominal, the correlation between the two different positions and the available readings would follow from the different configurations that serve as input to semantics: when the null NP (a property) stays inside the  $\nu$ P, the variable it introduces is bound under Existential Closure yielding the impersonal interpretation; when it raises to preverbal position, type-shifting to an individual (*iota*) applies.

In impersonal, non-anaphoric NS constructions, BP and Finnish show singular verbal agreement whereas Russian and Hebrew show plural agreement. Crucially, in the cases in which the non-anaphoric NS is syntactically singular, it is not semantically singular, given that it may be used to refer to a plural entity. Semantic number neutrality is a stable crosslinguistic property of *semantic incorporation* (Van Geenhoven 1996, Dayal 2003, Farkas and Swart 2003, Chung and Ladusaw 2004). There are different approaches to semantic incorporation, but all of them share the basic insight that semantically incorporated nouns denote properties that combine with the verbal predicate so that the relevant variable of the predicate is restricted by the property in question. This operation doesn't saturate the predicate, hence the variable ends up bound by event level Existential Closure. In view of the properties of the 3PSG non-anaphoric NS in Finnish and BP — restriction to post-verbal position; number neutrality — we suggest that the minimal NP in post-verbal position is semantically incorporated. Since the NP lacks a restriction, the effect of combining it with the verbal predicate is nearly semantically vacuous: what we get is a predicate that is restricted to apply to human beings. The semantic incorporation analysis extends to the non-anaphoric plural NS in Russian and Hebrew,

When the minimal NP raises to preverbal position, type-shifting to an individual (*iota*) applies and the anaphorically anchored reading obtains. Holmberg and Nikane (2002) show that the position that hosts the definite NS in Finnish can host other categories besides subjects and is associated with topics. Modesto argues that the null subject in BP occupies a topic position; thus, it is conceivable that *iota* type-shifting is associated with topicality. We claim that covert *iota* type-shifting is available to the preverbal NS in the languages that lack articles and in BP, a topic prominent language. In Hebrew, type-shifting to an individual is contingent upon the presence of person agreement and hence is unavailable in the present tense, which lacks person agreement and licenses impersonal NSs only. Curiously, the pattern of subject drop found in Hebrew present tense is that of Type 4 languages. Cape-Verdian creole and Papiamentu have bare nouns (cf. Baptista and Guéron 2009) in argument position. Icelandic lacks an indefinite article. We propose that the semi *pro*-drop languages (CVC, Icelandic) lack the resources required for *iota* to apply.

Coming back to the consistent NSLs, one longstanding problem with the pronominal-Agr hypothesis has been the status of the argument, first merge, subject position. Positing an *ec* in Spec- $\nu$ P is required in a theory that assumes that theta-roles are assigned configurationally (Chomsky 1995). Now suppose that the *ec* in question is our minimally specified NP, and that what characterizes the consistent NSLs is that T merges with a D head bearing interpretable  $\phi$ -features. When D binds the variable introduced by the null NP subject, we get the pronominal interpretation characteristic of subject *pro* in Type 1 NSLs. Variable binding by D is insured by the principle of Full Interpretation (the null NP is not of the right type to combine with the VP unless the variable it introduces is bound by D). This allows us to reduce *pro* to  $[_{NP} e]$  quite generally.