

**PRO-DROP AND SUBJECT (NON-)RECOVERABILITY:
THE CASE OF NEZ PERCE***

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We're special, me and you.

At least since Benveniste (1966), linguists have noticed an apparently fundamental referential difference between pronouns whose referents are involved in the discourse—aside concerns of generalized topicality, the 1st and 2nd persons—and all others. A discovery which must be credited to cross-linguistic investigation is that this difference seems to be encoded in some way in UG, showing its face in different ways under different circumstances and in different languages. In the study of linguistic universals, we come across reflexes of a person split in case-marking patterns in many ergative languages (Nash 1997), auxiliary selection in Italian dialects (Kayne 2000) and past participle agreement in standard Italian (Bianchi 2004), word order in Tongan (Nash 1997), and nominative objects in Icelandic (Sigurdsson 1996), to name just a few. Isolated cases varying across constructions and language families, these few examples show the broad range of effects person information seems to have—supporting its status as part of the UG-encoded universal situation of markedness.

This paper will zoom in on just one of these many attestations of person-sensitive syntax: partial *pro*-drop, or person sensitivity in pronominal subject expression, discussed among others by Vainikka and Levy (1999) and Kayne (2000). This phenomenon, attested in at least four unrelated language families, separates 1st and 2nd person subjects from 3rd person ones in terms of *pro*-drop; in some languages only 1st and 2nd person subjects may be omitted, while in others only 3rd person subjects may. Interestingly, these languages vary in the facts of their agreement in ways that can have consequences for the study of *pro*-drop in general and especially for the long-discussed thesis that rich agreement is necessary and sufficient to permit it. This paper provides new evidence from Nez Perce, a partial *pro*-drop language, and some new analyses of old problems in the hope that these can offer fresh perspectives on the decades-old questions of *pro*'s licensing and identification/recovery.

The paper is organized as follows. Following a general discussion and illustration of partial *pro*-drop, section 1 will lay out some previous analyses of this phenomenon and study the relationships between agreement and *pro* advocated by their various proponents. It will be seen that the three previous approaches to partial *pro*-drop all rely on a framework in which agreement is entirely correlated with *pro*-drop in terms of both licensing and recovery. In section 2 I will question this framework through an exploration of Nez Perce, a minimally person-inflected language which shows partial *pro*-drop combined with only minimal overt agreement. Based on an analysis of its person markers as clitics and some evidence that it might be polysynthetic in the sense of Baker (1996, 2002), I will use the Nez Perce data to motivate an

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entire dissociation between the licensing and recovery of *pro*. While the hypothesis remains tenable that agreement “licenses” *pro*, in terms of recovery I will propose that ultimately the relationship between rich inflection and *pro*-drop has to do with parametric choices concerning referent recovery in general. In section 3 I will consider systems in which agreement licenses but cannot recover *pro* and highlight three mechanisms that might rise to the task instead. A proposed decomposition of the *pro*-drop parameter based on a number of factors that can make languages require overt subjects is given in section 4, along with a discussion of parameter settings found in languages used in this paper. Section 5 is a brief conclusion.

1. PARTIAL *PRO*-DROP

1.1. The phenomenon

Examples (1-3) below illustrate a similar pattern in three different languages: 3rd-person verbs require overt subjects, while 1st- and 2nd-person verbs do not.

- (1) a. * Nousi junaan Finnish (Vainikka and Levy 1999)
 step-PAST.3SG train-into
 ‘He/she boarded the train’
 b. Nousin junaan
 step-PAST.1SG train-into
 ‘I boarded the train’
- (2) a. * Ala al ha-rakevet Hebrew (Vainikka and Levy 1999)
 step-PAST.3SG.MASC on the-train
 ‘He boarded the train’
 b. Aliti al ha-rakevet.
 step-PAST.1SG on the-train
 ‘I boarded the train’
- (3) a. * (hi-)tuuqí-se Nez Perce (Aoki 1994)
 3CL-smoke-ASP.SG
 ‘He/she smokes’
 b. tuuqí-se
 smoke-ASP.SG
 ‘I/you smoke’

Data from a fourth language, French, shows the reverse pattern: a stressed pronoun may replace a clitic subject *only* in the 3rd person (4a,b), and in absolutive constructions even a non-stressed 3rd person pronoun may do so (5a,b).

- (4) a. LUI rejette cette idée. French
 HIM rejects this idea
 b. MOI *(je) rejette cette idée.
 ME I reject this idea

- (5) a. Lui ayant rejeté son idée, Marie s'en va.
 Him having rejected her idea, Marie leaves
 b.* Moi ayant rejeté son idée, Marie s'en va.

Interestingly, this means the phenomenon of partial *pro*-drop is attested both ways: Hebrew, Finnish, and Nez Perce require overt subjects for the 3rd person only, while French can dispense with them in the 3rd person only. So, rather than motivate an implicational hierarchy for the two types of *pro*-drop (1/2 vs. 3, i.e.), these data indicate *prima facie* that 1st/2nd person *pro*-drop and 3rd person *pro*-drop are independently available UG options.

1.2. Previous analyses

This section will review the proposals of Vainikka and Levy (1999), Kayne (2000), and Bianchi (2003, 2004) for partial *pro*-drop. Following the traditional analysis of *pro*-drop as a sort of macroparameter regulating variables like richness of agreement, availability of expletives, and postponed subjects (Rizzi 1982), each of these analyses rests on an important underlying assumption: the possibility of *pro* subjects is strongly correlated with richness of agreement (see, *inter alia*, Jaeggli and Safir 1989: ch. 1). The encoding of such an assumption in cross-linguistic generalization in the generative tradition dates to Taraldsen 1978 (though the principle was known in traditional philology prior to this); a version holding not only with respect to a language's overall paradigm but also with respect to individual person/number inflections is given in (6).

- (6) Agreement Licensing and Recovery Assumption [Taraldsen's generalization]:
pro is licensed iff agreement is sufficiently rich to recover its features

Research over the years has uncovered an impressive repertoire of diachronic and synchronic effects attributed to Taraldsen's generalization. However, a number of critiques have been raised, particularly over the vagueness of the notion of "rich agreement"—how rich is rich enough? One inroad into this problem lies in a distinction made by Shlonsky (1989) concerning discrete, rather than overt, agreement:

- (7) Corollary to (6):
 Agreement is sufficiently rich to recover *pro*'s features iff it has a discrete paradigm; i.e., no more than one element in the paradigm may be non-overt.

Yet even this clarification does not entirely de-problematize Taraldsen's generalization, as empirical problems remain for languages like Chinese, Japanese, and Korean, where subject *pro*-drop is not correlated with rich agreement—or even any overt agreement at all (Huang 1984, 1989). So on one hand, the ability of Taraldsen's generalization to bring together all sorts of data from many different flavors of languages is still very attractive to the continuing research project of *pro*-drop; and on the other hand, the generalization is incomplete with respect to the sum of null subject languages, some of which seem to require other mechanisms or additional stipulations.

1.2.1. *Vainikka and Levy (1999)*

Working from facts of Hebrew and Finnish like those in (1-2) above, Vainikka and Levy (1999) propose an important cross-linguistic analysis of partial *pro*-drop, linking it to a differentiation of agreement positions as well as to certain morphological facts tying 1st and 2nd person pronouns to their corresponding verbal agreement suffixes in these two languages. In their theory, 1st and 2nd person pronouns (henceforth Speech Act Participant or SAP pronouns) are generated in Spec,VP as feature matrices essentially corresponding to *pro*. These then raise to Spec,AgrP for reasons unrelated to agreement but motivated by a theory of position licensing requiring all syntactic positions to be filled at some point in the derivation. This implies that the agreement between SAP subjects and verbs might take place “in the lexicon.” On the other hand, for 3rd person subjects the relevant features are generated only in Agr⁰, meaning a subject of some sort will have to be generated in Spec,VP in order to license this position, according to this theory of licensing. This subject then raises to Spec,AgrP if necessary (for licensing, following the same assumptions), or else to Spec,TP, in either case deriving its agreement properties from the syntax.

Vainikka and Levy take these analyses to mean that subjects will have to be phonologically overt in the 3rd person, because overt material will have to be merged in Spec,VP unless an SAP feature matrix is generated here. On closer examination, though, the link between this analysis and overt 3rd person subjects seems to only follow from a further assumption that 3rd person *pro* (*pro*₃) is not present in the Hebrew or Finnish lexicon—otherwise, whatever needs the overt subject responds to could be fulfilled by *pro*. But for Hebrew, postulating a lexical lack of *pro* doesn't seem justified, as even 3rd person subjects may be non-overt in situations which resemble control (Ur Shlonsky, p.c.). Interestingly, Vainikka and Levy note this point in Hebrew and also give evidence that a similar construction is found in Finnish, as exemplified below in (8) (Vainikka and Levy 1999 ex (31b)). Here, both a control-like reading and an anaphora-like reading are available for *pro*, depending on whether it is construed as masculine or feminine.

- (8) Pekka sanoo emännälle, että hakee ruusut kellarista
 Pekka-NOM say-3SG wife-ALL that get-3SG roses-ACC cellar-ELA
 ‘Pekka says to (his) wife that he/she will get the roses from the cellar’

These facts imply that *pro*₃ is in fact present in both Hebrew and Finnish, leaving the patterns of overt subjects in these languages mysterious.

Related to their notion of SAP subject agreement “in the lexicon,” Vainikka and Levy point out a further interesting point of similarity between Hebrew and Finnish with respect to phonological similarities between agreement and pronouns. In these languages, there seems to be a relation (whether synchronic or diachronic) between SAP verbal suffixes and pronouns, but this relationship does not hold for the 3rd person. Presuming the correlation is not arbitrary, their proposal (corresponding to Taraldsen's generalization) is that “the phonological relationship between the verb affix and the pronoun may reveal an instance of Spec-head agreement at an early level of derivation, perhaps even in the lexicon” (1999: 639). This presumably gives SAP pronouns a special edge in recoverability from agreement morphology.

There are two main problems with such an analysis. First, in terms of recent research, with the retreat from the Lexicalist Hypothesis in syntax and morphology (most vehemently

announced by Marantz 1997) the drawing power of the idea of generative processes in the lexicon is fading—in any rate, such proposed processes would require a good justification for why they couldn't instead be carried out in the syntax. Secondly, even outside a post-lexicalist framework, doubt may be cast on the synchronic meaningfulness of phonological similarities between elements in terms of pure Saussurian arbitrariness; a better explanation of the phonological relationship should probably be cast in terms of grammaticalization and diachronic factors, rather than seemingly ad hoc processes such as lexical agreement.

1.2.2. *Kayne (2000)*

Based on certain person-asymmetry effects in Romance, such as those given for French in examples (4-5), Kayne (2000) proposes that the *pro*₃ whose distribution is apparently subject to a number of restrictions in Hebrew and Finnish is in fact the only bona fide *pro*, null SAP subjects being better analyzed as “an agreement suffix having the properties of a pronoun” (2000: 176). This casts explanatory light on Vainikka and Levy's pronoun-affix correlation, as it might explain the relationship leading to the diachronic reanalysis, or even the synchronic reality of the thing, if the overt subjects that can occur with echoing verbal morphology are in a way doubling the affix-subject. It also presumably means that the rich verbal agreement often seen in *pro*-drop languages is *complementary* to a 3rd person subject (as considerations of reference alone would lead us to believe), but *equivalent* to a SAP subject (meaning perhaps that the verbal affix fulfills the EPP for SAP subjects). Following Taraldsen, this analysis rests overall on a significant interdependence between agreement and pronominal subjects.

There are a number of problems for such a theory, among which not least is the complaint that Kayne's formulation is awfully unclear; is the suffix a pronoun, or not? Is it agreement, or not? Based on Kayne's argumentation that all *pro*-drop is 3rd-person, presumably such a suffix is not a pronoun; but if it is not a pronoun, and the clause contains no other subject, it is not really agreeing with anything, either. In a certain sense such an approach is a return to the traditional pedagogy of null subjects, which teaches L2 learners of Spanish or Italian that subjects are not necessary because the verbal morphology is clear enough; but all the classic existential demonstrations of *pro* in anaphor-binding and the like can be levied against this approach in both its older and newer forms.

1.2.3. *Bianchi (2003, 2004)*

In a manuscript (2003) and two talks at the University of Geneva (2004), Bianchi pursues an analysis of person information in Romance and Plains Cree based on her proposal that Agr projections are person sensitive. Proposing that SAP projections may be combined into a hybrid 1/2 projection, or projected separately both from each other and from 3rd person, she builds an expanded clausal hierarchy to respond to person information in a way that allows parameters to refer specifically to *pro*-drop sensitive persons via the associated person projections. In correlating person information to Agr projections, Bianchi's account rests on the understanding that agreement and *pro*-drop go hand in hand, and may have the same syntactic or parametric *raison d'être*. Based on the analysis of Nez Perce in section 2, I will work to refine this correlation by relating *pro*'s licensing to Agr in general, regardless of richness, but making use of Bianchi's person-specific Agr nodes in order to state the parametric choices of partial *pro*-drop languages.

2. THE NEZ PERCE CASE AGAINST TARALDSEN'S GENERALIZATION

In this section I will lay out the facts of *pro*-drop and agreement in Nez Perce, a Penutian language of the northwestern United States. That Nez Perce manifests partial *pro*-drop in the first place, as I considered in section 1.1, is an assumption I will defend in section 2.1. I will then look at the status of agreement in this language (section 2.2) and consider if *pro* might be licensed by agreement that nonetheless cannot recover its features (section 2.3). This will lead to general considerations of what it means to be “licensed by agreement” in section 2.4.

2.1. Subject clitics and clitic clustering

Descriptively, person marking on Nez Perce verbs (or, more accurately, “verb-words”) is achieved through a series of word-initial prefixes. Traditional analyses of Nez Perce (Aoki 1970, 1994; Rude 1985, 1986a,b, 1991, 1997; Crook 1999) generally refer to these as person agreement, though Rude (1985: 30) notes that they may “function as pronouns.” This section will concern itself with showing that the approach to these markers in terms of (proclitic) pronouns is more promising than an approach in terms of agreement morphemes, primarily for reasons concerned with reflexives. In fact, once they are analyzed as clitics, the person markers of Nez Perce bear a strong resemblance to clitic systems of Romance languages.

Examples of transitive and intransitive Nez Perce verbs are given below. (For simplicity, all of these examples are singular; plurality is expressed through independent morphemes which generally do not interact with the clitics.) These examples show the clitics *hi*, *'e*, and *pée* and concern only non-reflexives.¹

- (9) Intransitive = (3a,b)
- a. hi-tuuqí-se
CL-smoke-ASP
'He/she smokes'
- b. tuuqí-se
smoke-ASP
'I/you smoke'
- (10) Transitive
- a. hekí-ce
see-ASP
'I see you' / 'You see me'
- b. 'e-hekí-ce
CL-see-ASP
'I/you see him/her/it'
- c. hi-hekí-ce
CL-see-ASP
'He/she/it sees me/you'

¹ Because the language has highly complex systems of allomorphy and vowel harmony, I am giving underlying forms in these glosses.

- d. pée-hekí-ce
 CL-see-ASP
 ‘He_i/she_i/it_i sees him_j/her_j/it_j’

Because all of these forms are grammatical sentences without lexical subjects, obviously the status of the elements I have glossed as ‘CL’ is decisive in determining whether Nez Perce is a full *pro*-drop language with person agreement, or a partial *pro*-drop language with no person agreement.

Crucial to this determination is a consideration of the reflexive paradigm. Nez Perce reflexives are formed with special prefixes that replace those seen in (10) (see Crook 1999: 133) and are sensitive to person itself, rather than just SAP vs. non-SAP status.

- (11) Reflexive prefixes²
- | | | | |
|---------|--------------------|----------|-------------------|
| 'inée- | <i>myself</i> | nemée- | <i>ourselves</i> |
| 'imée- | <i>yourself</i> | 'imemée- | <i>yourselves</i> |
| 'ipnée- | <i>him/herself</i> | 'imemée- | <i>themselves</i> |

To see why Nez Perce transitive prefixes should be considered clitic pronouns, consider the case of the 3/3 switch reference marker *pée* and the 3rd person reflexive marker '*ipnée*'. Because on any given verb only one of these may be felicitous, we may conclude that the choice between them is sensitive to reference or indexation. While a sensitivity to index is fully expected of pronominal elements (as formalized by classic BT), it is not expected of Agr heads. This follows from the generally understood nature of agreement in language:

- (12) Nature of agreement
 Agreement is in terms of features only.

Due to this underlying characteristic of agreement, there seems to be no way in which a system of agreement markers could display the kind of reflexive/non-reflexive alternation seen in Nez Perce verbal prefixes. So, instead of forcing agreement in Nez Perce to be sensitive to reference, it seems the better analysis is to take the reflexive prefixes and all elements that alternate with them to be pronouns. Thus, we can conclude that *pée* as well as a null prefix for SAP/SAP switch reference are pronominal clitics.

Having established thus that *pée* represents a portmanteau form of two 3rd person clitics (a special clitic cluster form), it seems logical to extend this analysis to the other transitive prefix, '*e*' (SAP subject, non-SAP object). The question of how to treat the final person marker, *hi*, is then opened up: is this a simple case of a 3rd person pronoun, or does it provide an exception to the previous generalizations?

The motivation for treating *hi* as a pronominal prefix comes yet again from a contrast which agreement morphemes should not be able to provide. This is the case of subject possessor raising in intransitives, illustrated in (13).

² As these markers encode both subject and object, they are perhaps better glossed as ‘I...myself’, ‘you...yourself’, etc.

- (13) a. hi-wihne-ne
3S-leave-ASP
'She left'
- b. 'e-wihne-ne
3S-leave-ASP
'Hers left'

Example (13b) uses the prefix *'e* to indicate that the subject is a possessor, here of a non-overt nominal.^{3,4} However, whether the subject is a possessor or not, it is still a 3rd person singular animate and still has the same ϕ -features; so, according to (12), this alternation should not be possible if *hi* and intransitive *'e* are agreement markers. I therefore assume that they are clitics and that their alternation is the result of syntactic differences external to pure featural makeup.

I have thus argued that the four subject/object person markers *hi*, *pée*, *'e* (intr.) and *'e* (trans.) (as well as the reflexive set) should be analyzed as clitics or clitic clusters. In the course of my analysis I have also assumed the existence of a null SAP object clitic which does not seem to have cluster allomorphy (hence *hi* is either transitive or intransitive, the former being actually *hi*+ \emptyset_{SAP}). The presence of portmanteau forms *'e* and *pée* should not be surprising in the world of clitics, given Romance portmanteaux like European Portuguese *mo*, used for a 1st person dative object with a 3rd person masculine singular accusative object (Luís and Salder 2003). In this sense the Nez Perce clitic system is quite like its Romance counterpart both in the placement of the clitics and in the stipulation that special situations call for special allomorphs. Furthermore, partial *pro*-drop is clearly seen in that only 3rd person clitics are overt (in intransitives), as generally in Romance cases of partial *pro*-drop like Paduan and Venetian (see Kayne 2000 ch. 9). However, a major difference between the two language groups is found in the corresponding properties of agreement. As the next section will make clear, Nez Perce is a far cry from the systems of rich agreement noted in Romance in general, especially in correlation with *pro*-drop.

2.2. Patterns of agreement

Because Nez Perce verbs contain no person morphemes besides the markers I have just classified as pronominal clitics, we have no a priori reason to assume its verbs inflect for person. They do agree in number, however, in one of two ways based on the verb's aspect; certain aspects use combined aspect/subject number marking (found in the normal location of aspect, as a suffix), while others use prefixed markers that fall just inside the pronominal clitics. (14) and (15) illustrate.⁵

³ While Crook (1999) and Rude (1985) have pursued a unified analysis of this morpheme *'e* and transitive *'e*, at the moment I do not think such a claim should be taken for granted, and thus analyze the two morphemes separately. Homophonous morphemes are attested elsewhere in the Nez Perce clitic system, if just in the case of the null clitic used both for SAP subject intransitives and SAP/SAP transitives.

⁴ Unlike the English construction I have used to translated (13b), facts of number agreement in Nez Perce clearly show that subject possessor raising makes a subject of the possessor, leaving the possessee (overt or not) *chômeur*. This is not the case in English, as evidenced by examples like *Theirs has just arrived* or *His are ready now*, in which a mismatch between the number of the possessor and the verb is explained by the fact that the non-overt possessee remains the subject.

⁵ As before, sentences like those in (14) and (15) should properly be glossed as ambiguous between 1st and 2nd person subjects. This examples are, again, underlying forms phonologically.

(14) Fused aspect/subject number marking

- | | | | |
|----|--|----|--|
| a. | 'e-haní-sa
CL-make-ASP.SG
'I am making it' | b. | 'e-haní-síix
CL-make-ASP.PL
'We are making it' |
| c. | 'e-nées-haní-sa
CL-O.PL-make-ASP.SG
'I am making them' | d. | 'e-nées-haní-síix
CL-O.PL-make-ASP.PL
'We are making them' |

(15) Prefixal number marking

- | | | | |
|----|---|----|---|
| a. | haní-ya
make-ASP
'I did' | b. | pe-haní-ya
S.PL-make-ASP
'We did' |
| c. | 'e-haní-ya
CL-make-ASP
'I made it' | d. | 'e-nées-haní-ya
CL-O.PL-make-ASP
'I made them' |
| e. | 'e-pe-haní-ya
CL-S.PL-made-ASP
'We made it' | f. | 'e-pe-nées-haní-ya
CL-S.PL-O.PL-made-ASP
'We made them' |

In the case of fused aspect/subject number marking, (14c,d) show that object number marking proceeds as normal using the prefix *nées*; (15f) shows the order clitics *pe-nées*, where *pe* is the prefixal subject plural marker. In aspects with fused subject number marking, *pe* does not occur.

In the framework of the kind of problems this paper addresses, the question to be asked of such a system is how well it allows for the recovery of referents which might be expressed by *pro*—and the answer, as I will argue, is “very poorly.” Especially notable is that while *pro*-drop is apparently sensitive to person, nothing in this paradigm of agreement betrays a trace of person marking; all Nez Perce verb agreement is in terms of number. Furthermore, as Crook (1999) mentions, plural verb inflection is optional both for subjects and objects (apparently without restrictions). Second, as both Crook and Rude (1992) note, plural subject inflection in any form is ungrammatical with the remote past tense morpheme *ne* (which would appear word-finally, following an aspect marker); Crook’s informants also claim that subject plural *pe* (but not fused subject number/aspect marking) is impossible following the clitic cluster *pée*, contra Rude’s earlier claim (Rude 1985). In short, it does not seem that either subject or object plural agreement is ever necessary, and in a number of circumstances it is dispreferred or disallowed. In general (aside the case of *?pée-pe*) these circumstances are independent of person considerations and so unlinked to *pro*-drop and the ensuing problems of identification and recoverability.

Typologically, this could lead to interesting consequences for the study of *pro*-drop, partial or otherwise. We have the examples of Chinese as a uniformly *pro*-drop language with no inflection (Huang 1984, 1989); Italian as uniformly *pro*-drop with rich inflection (Rizzi 1982); Russian or Icelandic as non *pro*-drop with rich inflection (Franks 1995, Bar-Shalom and Snyder 1997; Joan Maling, p.c.); and Swedish as non *pro*-drop with poor inflection (Vainikka and Levy 1999, Speas 1994). In terms of the hybrid *pro*-drop systems, a language like Hebrew, with no overt inflection for the 3rd person (masculine) singular and *pro*-drop except in this person, seems

to vary between a Swedish-like system and an Italian-like one. Finnish, in that its agreement paradigm is entirely overt and discrete, varies between Russian-like behavior and Italian-like behavior; and Nez Perce seems to vary between Chinese-like⁶ and Swedish-like. This would seem to be a strong demonstration that the correlation between rich agreement and *pro*-drop is not to be taken for granted, contra Taraldsen's generalization; rather, the cases where these two settings coincide seem to be one typological group among others, both within particular languages and cross-linguistically.

2.3. Recovery, licensing and polysynthesis

One option that might come to mind for languages with some (but not very much) agreement morphology would be to posit null agreement morphemes corresponding to material that is overt agreement in languages like Italian. That such null inflection could serve to recover null subjects seems counter-intuitive from the get-go; but due to the important distinction between licensing *pro* and recovering it, I will nonetheless consider it here. In a framework of macroparameters like that of Baker (2002), null agreement can be induced in acquisition in a top-down manner through indirect parametric evidence; a learner of a polysynthetic language (in Baker's technical sense; see Baker 1996, 2002) can somehow take a little bit of evidence (from verb inflection, say) to conclude in a macroparametric sense that she is learning a polysynthetic language, drawing out specific instantiations such as null morphemes and incorporation.

It is interesting to note that while Nez Perce overt argument marking on the verb is done through a system of clitics and not of agreement morphemes, the language does attest a number of behaviors associated with languages of an extreme head-marking sort, where every argument is correlated with agreement on the verb (polysynthetic languages, in Baker's terms)—an analysis that would seem to have a bearing on agreement facts involving *pro*. Such behaviors are seen in the areas of incorporation, causative formation, and CP complements, to use some of the tests found in Baker 2002. Object incorporation is shown in (16), and the cross-linguistically more rare case of subject incorporation in (17). Note that (16b) includes both an incorporated object and a portmanteau subject/object clitic, showing once again that the clitic is an independent element and not an agreement morpheme (which would be expected to occur in complementary distribution with incorporated objects; see Baker 1996).^{7,8}

- | | | |
|------|--|---|
| (16) | a. hi-hiyúum-wapciy'aw-n
CL-bear-kill-ASP
'I just killed a grizzly bear' | b. 'e-hiyúum-wapciy'aw-na
CL-bear-kill-ASP
'I just killed a grizzly bear' |
| (17) | 'e-hiyúum-hip-se
CL-bear-eat-ASP
'I, grizzly bear, eat it' | |

⁶ In that not even sentences with highly topical 3rd person subjects can forego a subject clitic in Nez Perce, this language provides an argument for the reality of subject *pro*-drop in Chinese and against its reduction to topic drop. Following the analysis above and this topicality-related fact, not all cases of *pro*-drop where *pro* is not recoverable from agreement can be reduced to "topic zap."

⁷ The difference between (16a) and (16b) has to do with differences in clause type beyond the scope of this paper; see Deal and O'Connor 2004 for a discussion of this alternation.

⁸ These examples are underlying forms of examples in Aoki 1994; the surface forms are (16a) *hiyóowapciy'awn*, (16b) *'ayóomwapciy'awna*, (17) *'eeyiumtipse*.

Other polysynthesis-like behaviors like avoidance of CP complements have more to do with negative evidence than positive; Nez Perce seems to deal with CP complements predominantly through quotative clauses, as in (18). No infinitival morphology is attested.

- (18) 'iin nekí-se 'e-ni-wihna-no' (Aoki 1994: 473)
 1sg-NOM think-ASP CL-leave-go-ASP
 'I am thinking of leaving her' (lit. 'I am thinking, "I will leave her."')

If, following Baker, we take this (admittedly rather anecdotal) evidence as pointing to the conclusion that Nez Perce belongs to a macroparametric (and so typological) class of languages in which all arguments are marked on the finite verb, we must conclude that it does indeed have a system of agreement on all verbs—it just happens to be universally silent with respect to person, and optionally silent with respect to number. Such a conclusion might seem rather forced given the utter lack of language-internal motivation for positing person agreement; but supposing we follow it for a moment, let us consider the ramifications for *pro*. Coming back to Taraldsen's generalization, repeated below from (6), we might be motivated to make the further refinement proposed in (20) in principle-parametric form.

- (19) Agreement Licensing and Recovery Assumption [Taraldsen's generalization]: = (6)
pro is licensed iff agreement is sufficiently rich to recover its features
- (20) Licensing and Recovery of *pro*, version II:
 PRINCIPLE: (thematic) *pro* must be both licensed and recoverable.
 a. Licensing: *pro* is licensed by agreement {yes, no}
 b. Recovery: *pro* is recovered from agreement {yes, no}

The parameters in (20) follow a long-standing tradition in the treatment of *pro*-drop in differentiating licensing factors from recovery factors, presuming null subjects must be both licensed and recoverable. They also account for the analysis under which entirely null person agreement in Nez Perce can sometimes license *pro*, even though a whole paradigm of null agreement is obviously useless to recover its features. If we are willing to suppose that Nez Perce possesses such agreement, we can maintain the generally held conclusion given in (20a), that agreement is responsible for licensing *pro*.

2.4. Licensing by Agr

A good twenty years into the discussion of *pro*-drop, I take it that the differentiation of licensing and recovery can stand on its own. The particular manner in which I have given the licensing condition, though, certainly merits comment: what does it mean to be licensed by Agr?

Of two important meanings I wish to attach to this formulation, the first is concomitance: any language that has *pro* has Agr. As we have seen in Nez Perce, this may be silent in some respects or even totally (as I am assuming is the case for Chinese). Nonetheless, if it is properties of agreement that fundamentally determine whether or not *pro* is legitimate in a given language or construction, *pro* comes not without Agr. This falls in support of proponents of a universal functional hierarchy including agreement, notably Cinque (1999).

A second meaning I attach to Agr licensing *pro* is that the kind of *pro*-drop in question is that of the subject—AgrS licenses *pro*, I should say. In the growing number of approaches that rely on differentiated subject positions within the clause (Poletto 2000, e.g.), even this refinement is probably not enough to capture the notion of subjecthood—perhaps the appropriate notion would be to say that *pro* is considered a legitimate subject (which might mean that it is Spec,VP or V that licenses *pro*, in this sense). So I am somewhat backing away from the most literal interpretation of the condition I have formulated in (20a)—what I mean is that *pro* implies Agr, and that *pro* is a possible subject.

3. GENERALIZED *PRO*-DROP: LICENSING AND RECOVERY

This section will work towards a generalization of the conclusion in section 2.3 that agreement may license *pro* even when it cannot itself recover *pro*'s features—essentially, the conclusion that Taraldsen's generalization is flawed not because it assumes a correlation between *pro*-drop and agreement, but because it links licensing and recovery too tightly. The seeming link between these two factors presumably has to do with the traditional emphasis in the study of *pro*-drop on languages like Spanish and Italian, where agreement seems to be responsible for both matters; but this represents only one parameter setting among others. Below I will consider (20b) a sub-parameter available when (20a) is set to YES, and investigate some of the goings-on in languages where (20b) is set to NO: agreement cannot recover *pro*'s features.

3.1. Who recovers *pro*?

It seems that there are approximately four groups of factors that can license *pro*: agreement, doubling, default interpretation, and discourse factors. The first should be pretty clear by now and I will discuss it no further, other than to remark that it alone represents a discrete parameter setting in (20b). But supposing (20b) is set to NO, we have systems like partial *pro*-drop in French where *pro* is recovered by doubling with a strong pronoun; systems like German or Russian expletive drop where *pro* is recovered through a default interpretation (in a certain sense, it is *not* recovered); and systems like topic drop or the person split in Nez Perce, where discourse factors seem to be behind the recovery of *pro*.

3.1.1. Doubling

Though on the surface French differs from other major European Romance varieties in requiring overt subjects, a number of researchers have taken it to be underlying *pro*-drop based on various analyses of its clitic system (e.g. Sportiche 1988). On these analyses, *pro* subjects and objects in French are recovered by the clitics, sometimes assimilated entirely to Agr projections (Roberge 1990, Auger 1995, inter alia). But even constraining our analysis to the unambiguous cases of French *pro*-drop like those in (4), repeated below, the strong pronoun doubler is obligatory and fully duplicates *pro*'s features.

- (21) a. LUI rejette cette idée. = (4)
 b. MOI *(je) rejette cette idée.

From these considerations, we can pretty clearly say that doubling is responsible for *pro*'s recovery in French. Overall in this language, then, *pro* is licensed only in the 3rd person (apart diary registers, as in English; see Haegeman 1990) and recovered only when doubled—so, since thematic *pro* has to be both licensed and recovered, null subjects are only grammatical in standard French in 3rd person doubling contexts (fancy analyses aside).

3.1.2. *Recovery by default*

Some languages fully require thematic referential subjects but allow *pro*-drop for non-thematic or non-referential ones; German and Russian are two examples. In German examples like (22), the recovery of *pro* is presumably done by default, if features are recovered at all. The dropped subjects of (22a,b) would be the non-thematic expletive *es*, and (22c) has a thematic, but generic, interpretation of object *pro*:

- (22) a. Es ist möglich, dass getanzt wurde (Jaeggli and Safir 1989)
 It is possible that danced was
 'It's possible that (there) was dancing'
- b. Er sagt, dass ihm scheint, dass... (Safir 1985)
 He said that him-DAT seems that
 'He said that (it) seems to him that...'
- c. Gute Musik versöhnt mit sich selbst (Cardinaletti 1990)
 Good music reconciles with oneself
 'Good music reconciles (one) with oneself'

This kind of default recovery is easily regroupable under generalized discourse recovery; expletive subjects are inferred in expletive contexts like (22a,b) and generic reference in thematic contexts like (22c). Perhaps the discourse element facilitating such recovery is the verb itself.

3.1.3. *Discourse recovery*

The inherently given status of discourse-old information seems to provide it with a special status, leading to a number of omission phenomena related to topicality. In colloquial German (Cardinaletti 1990) and French (Lambrecht and Lemoine in press) this is seen as topic drop. In German (23), but not in French (24), such omission is constrained to clause-initial position (Ross 1982, Rizzi 2002)⁹; in French, but not in German, only objects may be dropped.

- (23) a. Habe es gestern gekauft.
 have it yesterday bought
 '(I) bought it yesterday'
- b. Habe ich gestern gekauft.
 have I yesterday bought
 'I bought (it) yesterday'
- (24) Je lui fais manger.
 I him make eat
 'I make him eat (it)'

⁹ While I am discussing German topic drop here in light of recovery factors, it is also an important demonstration from a licensing point of view that *pro* may be permitted in certain positions but not others. This further clarifies the considerations about the meaning of licensing by Agr that I have laid out in section 2.4.

Returning to the theme of partial *pro*-drop, we could consider systems like Nez Perce as a sub-case of generalized topic drop. This should not be formulated (as in Huang 1984) in terms of operator binding by a null topic, though, but instead in terms of a recovery of *pro*'s featural content through the discourse assumption that it must be topical. In that SAP pronouns are always discourse-given, old information, their features should be in general easily recoverable from the discourse; that Nez Perce relies upon subject clitics in the 3rd person would seem to indicate that it is relying upon a general strategy of *pro* recovery via person-topicality considerations. Here we could assume that agreement licenses *pro* without regard to person information, but that since the language relies on a system of discourse referent recovery that can only reliably recover SAP subjects, recovery reasons produce partial *pro*-drop. On the other hand, the Hebrew and Finnish systems are less clearly marked in this regard, and may in fact rely on agreement both for licensing and for referent recovery.

3.2. Summary of section 3

This section has looked at a variety of phenomena through the lens of the recovery of *pro*: partial *pro*-drop with doubling in French, and without it in Nez Perce, Hebrew, and Finnish; expletive and generic omission in German; and topic drop in colloquial German and French. In all these languages we take it that agreement must be responsible for licensing *pro* (in certain persons and constructions), but the factors allowing the recovery of the omitted information vary; when Agr can't do the job, to the rescue come mechanisms of doubling, default, and discourse. In that these cases rely upon factors other than rich agreement to provide for full interpretation, they support the hypothesis that licensing and recovery (while both potentially related to Agr) are discrete problems *pro* is faced with, as understood in the parameters given in (20) but contra Taraldsen's generalization.

4. PARAMETRIC IMPLICATIONS FOR *PRO*-DROP

Having divided the question of licensing *pro* from that of recovering it, this section will consider the parametric choices taken by some of the languages discussed so far in this paper. It seems now that when we say that a language is not *pro*-drop we must specify why; for instance, does English require overt subjects because *pro* isn't licensed, or because it couldn't be recovered? Or, alternatively, could a language require overt subjects simply because *pro* is absent from its lexicon?

For the moment using only the parameters in (20), repeated in (25), the table below summarizes the distribution of languages across parameters (25a) and (25b). Because a positive setting for (25b) is dependent on a positive setting for (25a) (for logically, if *pro* is not licensed, it doesn't matter if it could have been recovered), I have shaded in the cell corresponding to the class of languages these parameters predict not to exist.

- (25) Licensing and Recovery of *pro*, version II = (20)
 PRINCIPLE: (thematic) *pro* must be both licensed and recoverable.
 a. Licensing: *pro* is licensed by agreement {yes, no}
 b. Recovery: *pro* is recovered from agreement {yes, no}

		Agr recovers <i>pro</i> (25b)	
		YES	NO
Agr licenses <i>pro</i> (25a)	YES	Italian, Spanish, Mohawk, Finnish	French, Nez Perce, Chinese
	NO		English, Swedish

Table 1. Parameter system (25).

Data from topic drop in colloquial Swedish (Rizzi 2002) and subject drop in English diary registers indicates that these languages can in fact recover *pro*'s features when they have to, whether from agreement or from discourse factors; the fact that in standard varieties they are nonetheless not null subject languages indicates therefore that Agr does not license *pro*, not that *pro* is banned for reasons of (un)recoverability. (I doubt that there could in principle be languages where Agr licenses *pro* in all persons but nothing is sufficient to recover it; how learners might make such a distinction is unclear—especially because as we have seen in section 2, the correlation between rich agreement and *pro* licensing is only part of the story.)

This illustration comes back to the fact that Table 1 does not clearly separate non-null subject languages from null subject ones; the mixed systems of French, Finnish and Nez Perce do not cluster together, but are rather intermixed with the unitary systems of languages like Italian and Chinese. This can only mean that partial *pro*-drop is due to different factors in different languages. As mentioned above, if Nez Perce recovers referents through discourse factors, its partial *pro*-drop system probably follows from the unrecoverability of nonetheless licensed 3rd person *pro*; but in Hebrew or Finnish, where discrete agreement paradigms mean 3rd person *pro* could be recovered through agreement just like any other person could, the systems of partial *pro*-drop might have to do with licensing factors only. (This produces the further prediction that particular constructions might license 3rd person *pro* in Hebrew or Finnish, but not in Nez Perce, which appears to be borne out by the data.) A similar situation obtains in French *pro*-drop with overt doubling; the recovery mechanism could in principle recover SAP subjects just as well as non-SAP ones, so possibilities of licensing alone must be responsible for partial *pro*-drop behavior.

These considerations motivate a differentiation between SAP *pro* and 3rd person *pro* in the domain of licensing, then, in order to account for systems like these.¹⁰ (26) elaborates.

- (26) Licensing and Recovery of *pro*, version III
- a. Licensing: *pro* is licensed by agreement
 - i. in 3rd person: {yes,no}
 - ii. elsewhere: {yes,no}
 - b. Recovery: *pro* is recovered from agreement {yes, no}

The table below shows how some languages under consideration here pan out across a parameter system like (26). Systems varying in *pro*-drop behavior (like Nez Perce and Chinese, as YES/YES/NO) would still be grouped together, as (26) does not elucidate whether factors other

¹⁰ In such a system the clausal hierarchy proposed by Bianchi (2003, 2004) and Poletto (2000) is attractive, in that if we can sort subject positions by subject person, (26ai,ii) are two distinct parameters and not an arbitrary-seeming divide of the same parameter.

than agreement are sufficient to recover *pro* in individual languages. In order to account for this, (27) proposes a parameter on discourse recovery, to be taken as a third clause of (26). (Recovery via doubling, as in French, is taken as a subcase of discourse recovery; shading results from parameters that are not relevant due to the settings of logically prior ones.)

- (27) Licensing and Recovery of *pro*, version III
 c. Discourse is sufficient to recover *pro*.
 i. in 3rd person: {yes,no}
 ii. elsewhere: {yes,no}

	26ai	26aii	26b	27i	27ii
Italian, Spanish	YES	YES	YES		
Chinese	YES	YES	NO	YES	YES
Nez Perce	YES	YES	NO	NO	YES
French	YES	NO	NO	YES	NO
English, Swedish	NO	NO			
Hebrew, Finnish	NO	YES	YES		

Table 2. Parameter system (26)/(27).

Properly taken, (27) is a pragmatic parameter. Such parameterization seems necessary to differentiate cases like English, where even highly topical pronouns must be overt, from French or Chinese, where these can be null to a varying degree. Insomuch as the respective systems of these three languages are stable, which we have no reason to doubt, children acquiring them must make pragmatic parameter settings as in (27).

I will now briefly consider a third factor besides licensing and recovery that could account for (non-)*pro*-drop: the lexical absence of *pro*, proposed among others by Kayne (2000) and explicit in a number of works on partial *pro*-drop. In a certain light, *pro* is a name for a bundle of ϕ -features, and insomuch as these are universal so is *pro*. One might argue that the universality of the features doesn't give the universality of the bundling; but any language with pronouns in the first place would have to have such a bundle in its functional lexicon. The decisive question might then be phonological, in terms of whether a language has an appropriate feature bundle with no overt exponent; in this light, it seems at least possible that a language might not have a null pronoun for reasons of phonological arbitrariness.

This means that languages requiring overt subjects might result from one of two factors (excluding, as above, the case where *pro* is licensed but never recoverable): a negative setting of parameter (26a) (such that agreement does not license *pro*), or a lexical lack of *pro*. Full or partially *pro*-drop languages, on the other hand, include *pro* and have positive settings for at least one of (26ai,ii). The constellation of these factors means that the learning situation with respect to *pro*-drop has to do with both parameter setting and lexical expansion, perhaps resulting (if the inventory of the lexicon can be parameterized for cross-linguistic entities like *pro*) in an overall parameter system like (28). This version is the final revision of the *pro*-drop parameter proposed in this paper, accounting for two factors that produce non *pro*-drop languages and the group of factors and choices that produce full or partial *pro*-drop.

- (28) Licensing and Recovery of *pro*, final version
- a. Lexicon: *pro* is in the lexicon {yes,no}
 - if yes:
 - a. Licensing: *pro* is licensed by agreement
 - i. in 3rd person: {yes,no}
 - ii. elsewhere: {yes,no}
 - if yes on either:
 - b. Recovery I: *pro* is recovered from agreement {yes, no}
 - if no:
 - c. Recovery II: *pro* is recovered from discourse.
 - i. in 3rd person: {yes,no}
 - ii. elsewhere: {yes,no}

5. CONCLUSION

This paper has looked at data showing a sensitivity to person information in the expression of null subjects and the challenge they pose for the simplest and perhaps most elegant formulations of the parameters of *pro*-drop. I have proposed that partial *pro*-drop systems, like full *pro*-drop ones, are split in their parametric choices; the main factors determining this split are licensing and recovery, which I have differentiated with cases like Nez Perce. In this language, a null person agreement paradigm might license *pro* but could not possibly recover its features. The terms on which I have made the differentiation between these two factors are highly unfavorable for any account based on Taraldsen's generalization, since although agreement is correlated with *pro* it need not be rich in any sense, nor need it do the work of recovering *pro*'s features. It is nonetheless a possible and very well attested strategy to use agreement to recover *pro*, giving languages of the sort Taraldsen and the long tradition following him claim to be universal; but as I have shown here, such a strategy is only one parametric option among (less attested) others.

Once we see licensing and recovery as separate problems null subject languages are faced with, we come to the expanded typological and parametric system of (28), where partial *pro*-drop can result from a parametric encoding of person in terms of licensing and discourse recovery. The resulting picture of the *pro*-drop parameter and of the phenomenon of null subjects in general is obviously not what we would get if we only compared Swedish and Italian. But in that the more articulated parametric system I have proposed accounts both for systems like Hebrew and Finnish, known in the literature for unusual *pro*-drop patterns that can (after some theoretical wrangling) be reduced to the Italian/Swedish picture of combined licensing and recovery, and for more exotic systems like that of Nez Perce, which seems to vary between Swedish-like and Chinese-like behavior, the overall picture of the *pro*-drop parameter advanced by this paper draws from the empirical richness of natural language to show that not all theoretical reductions and elegant formulations are in fact scientific advances.

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