A binary features approach to person and number asymmetry

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Abstract

Much syntactic research addresses the asymmetry between person features and number features. Notably, many languages exhibit a Person Case Constraint, while no languages exhibit a Number Case Constraint. In addition, some languages demonstrate Omnivorous Number, while no languages demonstrate Omnivorous Person. Nevins (2011) identifies a relationship between these phenomena, arguing that the conditions of Matched Values and Contiguous Agree fully explain the data. Nevins assumes that person features are fully specified binary features, whereas number features are privative with the unmarked value syntactically underspecified. I argue that there is sufficient evidence of the unmarked value of number, namely singular, being active in the syntax that it is inaccurate to represent number with privative feature specification. By assuming binary features for both person and number, it is possible to derive the relationships that Nevins addresses. Specifically, I suggest that the condition of Matched Values is an optional condition on the already relativized probe.

Keywords: features, person complementarity, omnivorous number, underspecification

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1. Introduction

The syntactic difference between person features and number features has been widely discussed in the literature (Preminger, 2011; Baker, 2011; Nevins, 2011; Wechsler, 2011, *inter alia*). The Person Case Constraint (Bonet, 1991) prohibits unmarked (third) person values from dominating marked (first or second) person values. However, there is no equivalent phenomenon for the number feature. Additionally, several languages exhibit Omnivorous Number (Nevins, 2011), in which the presence of a plural feature on either subject or object (or both) will result in the presence of the plural agreement morpheme, causing potential ambiguity. However, there is no equivalent phenomenon for the person feature. In addition, Baker (2011) identifies that adjective agreement occurs for number and gender, but not for person.

Nevins (2007, 2011) argues that the conditions of Matched Values and Contiguous Agree account for phenomena such as the Person Case Constraint and Omnivorous Number, as long as one assumes that person features are fully specified in the syntax, and that number features are privative. I argue that number must also be fully specified in the syntax, and that the syntactic difference between person and number features can be attributed to Nevins' Matched Values principle, which I suggest is an optional condition on the probe.

In this paper, I begin by reviewing Nevins' (2007, 2011) conditions of Matched Values and Contiguous Agree (section 2). Then I show that number cannot be syntactically underspecified (section 3). Finally, I attempt to explain the asymmetry between person and number features, assuming only binary feature specification (section 4).

2. Matched Values and Contiguous Agree

Nevins (2011) invokes feature specification to explain the difference in syntactic behavior between person features and number features. Person features are binary, meaning that they are fully specified in the syntax using the features [±participant] and [±author]. On the other hand, number features are privative, meaning that the number value [plural] is specified in the syntax but that singular is not. Nevins' system (2007, 2011) is based on two conditions: Matched Values and Contiguous Agree. Nevins (2007) defines Matched Values as a condition that requires that all elements in the domain of relativization contain the same value for whatever feature is being agreed with. Contiguous Agree is a constraint prohibiting intervening elements in an agree domain. Nevins argues that these two conditions, along with the underspecification of number features, yield the attested linguistic results.

The Person Case Constraint (Bonet, 1991) prohibits unmarked (third) person values from dominating marked (first or second) person values. For example, in a language such as French that has pronominal clitics for direct and indirect objects, it is not possible to have a third person indirect object with a first person direct object. There does not exist a comparable rule for number values.

In order to rule out the possibility of a Number Case Constraint, Nevins relies on the number feature being syntactically privative. As he explains, plural number is marked [plural] in the syntax, but singular number is underspecified. A Number Case Constraint would prohibit an unmarked value for number dominating a marked value. For instance, a singular subject with a plural object would be prohibited. The principle of Matched Values explains the Person Case Constraint: violations of the PCC are also violations of Matched Values (3a). There is no Number Case Constraint because an unmarked number value does not appear overtly in the syntax, thus avoiding the problem of violating Matched Values (3b). Nevins makes a distinction between weak PCC, strong PCC, and ultrastrong PCC. For explanatory purposes, I will explain how Nevins' method addresses the weak PCC. The method is the same for the other two versions of the PCC; the difference is in the relativization of the probe.

(1) a. *Person Case Constraint*: the probe is relativized to the marked value of the participant feature [part], in this case βF. NP1 violates Matched Values so the probe cannot agree with NP2. The probe does not show simple agree with NP1 because NP1 has a value of αF rather than βF. Agreement fails.

__________X__________

P	NP1	NP2
[uF]	[αF]	[βF]

b. *no Number Case Constraint*: The probe does not agree with NP1 because its underspecified features make it invisible to the probe; therefore, it does not violate Matched Values. The probe agrees with NP2.

__________X__________

P	NP1	NP2
[uF]	Ø [βF]	

Matched Values also explains the presence of Omnivorous Number and the absence of Omnivorous Person. Omnivorous Person would violate Matched Values, as shown in (2a); this is not a problem for number because unmarked number is underspecified, as shown in (2b).

(2) a. no Omnivorous Person: the probe is relativized to marked[part], in this case βF. The outcome is the same as (1a).

__________X__________

P	NP1	NP2
[uF]	[αF]	[βF]

b. *Omnivorous Number*: three possible scenarios can result in omnivorous number. NP1 can be underspecified while NP2 is [plural], NP1 can be [plural] while NP2 is underspecified, or both can be [plural]. In the first two cases, one NP is invisible to the probe; therefore, there is no violation of Matched Values. In the third case, the feature values are the same.

__________X__________

P	NP1	NP2
[uF]	Ø [βF]	
[uF]	[βF]	Ø
[uF]	[βF]	[βF]

The fact that three different scenarios all result in the same feature values on each NP means that each of these scenarios is potentially ambiguous.

Although Nevins' system accounts for the attested data, there are some problems with assuming privative number features, which I will address in the following section.

3. Problems with privative number

Nevins (2011) presents several phenomena suggesting that singular number must be underspecified, each of which I will address in section 4. However, it is necessary to address one before I continue. Nevins points to attraction effects as an indication that singular number must be invisible in the syntax. Attraction effects occur when a verb shows spurious plural agreement due to the presence of a nearby DP marked with the plural feature. Nevins argues that attraction effects occur for plural number, but not singular, because singular number, being underspecified, is not visible to the probe. He cites the following examples on page 945.

(3) The key to the cabinets are missing.

(4) *The keys to the cabinet is missing.

(5) *The story about me am interesting.

According to Nevins, the first example is attested in casual speech because the presence of [plural] on the DP *cabinets* causes the presence of [plural] on the verb, despite the fact that the verb should agree with *key*, which is singular. This is an example of Omnivorous Number. The ungrammaticality of (4) suggests that [singular] is not specified in the syntax, and therefore cannot be "attracted" to the agreement probe. The ungrammaticality of (5) suggests that attraction effects happen only with number, not with person.

There are occasional productions in English that do not follow Nevins' claims; there are attested examples of attraction effects occurring with singular number. For instance, consider the following.

(6) The views of the Potomac from the house is just perfect.[1]

Example (6) shows what Nevins claims to be impossible; the feature [singular] is attracted to the verb from a DP modifier. The sentence in (6) suggests that number features are not underspecified in the syntax. Bock and Miller (1991) sought to induce agreement attraction effects in an experimental setting, and their results show a significantly greater number of agreement errors with plural number, but they do find a small number of errors with singular number. In order for this type of attraction effect to occur, the feature [±singular] must be a binary feature that is overtly specified. It may be more likely that the value

[1] http://www.yelp.com/biz/george-washington-memorial-parkway-mclean

[-singular] results in attraction effects because this is the marked value of the feature (Preminger, 2011; Nevins, 2007), and some probes prefer to value themselves with a marked feature. However, since it is possible for [+singular] to participate in attraction effects, it must be fully specified in the syntax.

An additional problem for Nevins' account of number, as Béjar (2011) points out, is that Nevins' system does not account for dual number. Béjar (2011) reworks some of Nevins' examples, assuming a privative system for number including relative underspecification, which allows for singular, dual, and plural number. Béjar points out that under Nevins' system, Number Case Constraint effects in dual and plural contexts is predicted to arise even though these effects are not attested. Because privative number specification that includes dual number does not rule out NCC effects with a complex probe, and because attraction effects can occur for singular number, I assume a fully binary specification of both person and number features. Following Harbour (2006), I use the features [±singular], [±augmented] to specify binary number features. Singular number is specified as [+sing] [-aug]. Dual number is represented by [-sing] [-aug], and plural number is [-sing] [+aug]. I will use these binary features to explore the asymmetry in person and number.

4. Person and number asymmetry

Nevins (2011) identifies several instances of asymmetry in the syntactic behavior of person features and number features. He uses the conditions of Matched Values and Contiguous Agree, along with the assumption of underspecification of number, to explain these asymmetries. I will address each of the points that Nevins raises and attempt to show that a binary specification of both person and number features will result in the same behaviors. I assert, additionally, that the condition of Matched Values is a condition on the probe, and need not always apply.

Nevins identifies the presence of a Person Case Constraint, alongside the absence of a Number Case Constraint, as evidence of privative number features. I argue that a binary specification of number allows for the same predictions. A Person Case Constraint arises in the same situation that Nevins describes, shown in (1a), repeated below as (7).

(7) *Person Case Constraint*: the probe is relativized to marked[part], in this case βF. NP1 violates Matched Values; the probe does not show simple agree with NP1 because NP1 does not have the correct feature value to match the relativized probe. Agreement fails.

___________X___________		
P	NP1	NP2
[uF]	[αF]	[βF]

My system does not alter Nevins' analysis of the PCC.

Under my system of binary specification of number, it seems at first glance that a Number Case Constraint would be predicted to occur. However, by relativizing the probe in a particular way, this can be avoided. In her response to Nevins (2011), Bejar (2011) states, "no conclusions can be drawn independently of one's assumptions about the feature structure of the probe [F]," (p.988). Nevins' system relies on probes being relativized to different features in different situations. Probes can be relativized to look for all features, for marked features only, or for contrastive features only (Nevins, 2007). He suggests that different probe relativization partly accounts for the parametric variation between languages. My system adds a condition to certain probes, which is well within the scope of probe relativization. I suggest that on certain probes, Matched Values does not apply.

Matched Values applies quite rigidly to person features; hence the PCC and the lack of Omnivorous Person. However, in some situations, Matched Values does not apply to number features. This explains the lack of Number Case Constraint as well as the presence of Omnivorous Number. There is theoretical backing for treating person features differently from other features. Baker (2011) derives the Structural Constraint on Person Agreement (SCOPA) to address the ways in which person features behave differently from number and gender. Preminger (2011) argues that person and number have separate probes. Restricting Matched Values only to person features is a principled theoretical move.

Consider (8), which illustrates the lack of Number Case Constraint.

(8) *no Number Case Constraint*: the probe is relativized to marked[sing], in this case βF. Additionally, Matched Values is not a condition on the probe.

___	X	___
P	NP1	NP2
[uF]	[αF]	[βF]

The probe does not agree with NP1 because the probe is seeking the feature value βF. NP1 does not violate Matched Values because Matched Values is not a condition on the probe. Ignoring Matched Values results in the mismatching feature value on NP1 being invisible to the probe. The result is simple agree with NP2. This is an instance of Omnivorous Number.

By the same condition on the probe, I am able to explain all three examples of Omnivorous Number discussed in (2b).

(9) *Omnivorous Number*: the probe is relativized to marked[sing], in this case βF. Matched Values is not a condition on the probe.

___	X	___
P	NP1	NP2
[uF]	[αF]	[βF]
[uF]	[βF]	[αF]
[uF]	[βF]	[βF]

The first instance is the same situation as the example discussed in (8). In the second instance, simple agree occurs for the same reason as in the first: the probe searches for the feature value βF and is not concerned with Matched Values. In the third instance, both NP1 and NP2 agree with the probe. All three occurrences result in Omnivorous Number and, consequently, in potential ambiguity.

Restrictions on Omnivorous Person are the same under my system as under Nevins' system, discussed in (2a) and repeated here in (10).

(10) *Omnivorous Person*: the probe is relativized to marked[part], in this case βF. The probe also has the condition Matched Values. NP1 violates Matched Values; therefore, agreement fails.

___	X	___
P	NP1	NP2
[uF]	[αF]	[βF]

By assuming that Matched Values is an optional condition on the probe, I am able to account for the presence of the PCC and Omnivorous Number as well as the lack of a Number Case Constraint or Omnivorous Person.

Although Nevins (2011) focuses much of his paper on the PCC and Omnivorous Number, he also cites three additional examples illustrating the asymmetrical behavior of person and number features. He identifies attraction effects, which I addressed in section 3, predicate adjective agreement, and the expressive use of number agreement as examples of asymmetrical syntactic behavior. He suggests that these examples illustrate the need to underspecify number. I will address each of these in turn to show how specifying number with binary features does not yield a different result from Nevins' system.

As I discussed in section 3, Nevins asserts that attraction effects occur only for plural number. I have shown that singular number can also show attraction effects, indicating that it is syntactically specified. Nevins also demonstrates that attraction effects occur only for number features, not for person features. The condition of Matched Values operates on the probe relative to person features, prohibiting attraction effects for person. It is not a condition on the probe relative to number features, allowing attraction effects to occur for number.

Nevins identifies partial agreement on predicate adjectives as demonstrating further evidence that person and number features must be specified differently. Nevins references Baker's (2011) observation that adjectives show number agreement but not person agreement. Baker observes that gender features tend to behave the same way as number features, in that adjectives often show gender agreement as well as number agreement. Person agreement is specifically blocked, suggesting that something about person features is different from other features. Consider Baker's (6) from p.879, repeated here as (11). The predicate adjective 'fat' can agree in gender and number, but not in person.

(11). a.	Est-as	mujer-es	<u>son</u>	gord-*as*.	(Spanish)
	these-F.PL	women(F)-PL	are.3pS	fat-*F.PL*	
	'These women are fat.'				
b.	El	hombre	*<u>es</u>*	gord-*o*.	
	the.M.SG	man(M.SG)	is.3pS	fat-*M.SG*	

	'The man is fat.'			
c.	(Nosotras)	<u>somos</u>	gord-*as* /	*gord-*amos*
	we.F.PL	are.1pS	fat-*F.PL* /	*fat-*1p*
	'We (a group of females) are fat.			

Wechsler (2011) attributes the difference between person agreement and number agreement on adjectives not to the features, but to the goals. He suggests that adjectives show agreement with concord phi features, while nouns show agreement with index phi features. Person is only part of the index feature bundle, not the concord feature bundle. Although the feature bundles are different, the two types of features need not be specified differently. Using binary features instead of privative features does not affect this analysis.

Lastly, Nevins addresses the issue of expressive use of agreement. Plural number can be used on a verb expressively along with a syntactically singular but semantically plural subject (Reid, 2011). For example, a collective noun can be used with a plural verb, as in (12).

(12) The team are thrilled to be in the championship.

According to Nevins, "Arguably, this sort of mechanism is allowed precisely because there is no "overwriting" of a singular feature. The [plural] feature may be added or subtracted without the need to manipulate or specify singular in the syntax" (p.945). This phenomenon can also be accounted for under my system. In the case of expressive agreement, the probe is relativized to the marked value of singular, [-sing]. Failing to find that value on the NP, the probe matches *features* with the NP, but does not match values. Instead, the probe, which is relativized to the marked value, becomes valued with the marked value.

5. Conclusion

Nevins (2011) identifies several phenomena that illustrate an asymmetry between person and number features. He relies on the underspecification of number, along with the binary specification of person, to account for these phenomena. In this paper, I have shown that number features cannot be underspecified and must be binary. However, assuming that both person and number features are fully specified in the syntax, I am able to achieve the same predictive results as Nevins. I achieve this by assuming an additional property of the already relativized probe; namely, that Matched Values is an optional condition of the probe and need not apply for number features.

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