

Feature gluttony*

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Draft: July 12, 2019

This paper develops a new approach to a family of hierarchy effect-inducing configurations, with a focus on Person Case Constraint (PCC) effects, dative-nominative configurations, and copula constructions. The main line of approach in the recent literature is to attribute these hierarchy effects to failures of φ -Agree or, more specifically, failures of nominal licensing or case checking. We propose that the problem in these configurations is unrelated to nominal licensing, but is instead the result of a probe participating in more than one Agree dependency. Building on Béjar & Rezac (2009), according to which an articulated probe continues probing if at least some features are left unvalued after an Agree relation, we propose that what characterizes hierarchy configurations is that a probe agrees with multiple DPs, a configuration that we refer to as *feature gluttony*. Feature gluttony does not in and of itself lead to ungrammaticality, but rather can create conflicting requirements for subsequent operations. In the case of clitic configurations, a probe which agrees with more than one DP creates an intervention problem for clitic-doubling. In violations involving morphological agreement, gluttony in features may result in a configuration with no available morphological output. Important empirical motivation for this account includes (i) the different rescue strategies available, and (ii) the fact that hierarchy effects commonly disappear in the absence of an agreeing probe, as predicted under an account which attributes the problem to the probe.

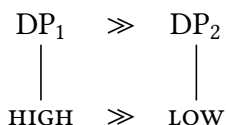
1 Introduction

This paper develops a new model of syntactic *hierarchy effects*, including those found in Person Case Constraint (PCC) effects (Perlmutter 1971, Bonet 1991, Anagnostopoulou 2003, Nevins 2007), Icelandic dative–nominative constructions (Sigurðsson 1996, Sigurðsson & Holmberg 2008), and German copula constructions (Coon et al. 2017, Keine et al. 2018). The distinguishing feature of hierarchy effects is that a configuration containing two DPs is grammatical or ungrammatical depending on the relative ranking of the two DPs with respect to some grammatical hierarchy—for example, 1>2>3 for person, or PL>SG for number. We follow previous work in taking these

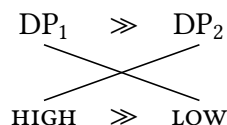
* This project grew out of collaborative work with Michael Wagner, who suggested putting the problem in the probe. Thanks to Jon Ander Mendia for Basque judgments and data help, to Rajesh Bhatt for help with Hindi-Urdu, and to Filipe Hisao Kobayashi for help with Brazilian Portuguese. For comments, feedback, and discussions, we are grateful to David Adger, Nico Baier, Mark Baker, Kenyon Branagan, Clarissa Forbes, Laura Kalin, Martha McGinnis, Roumi Pancheva, Ethan Poole, Omer Preminger, Betsy Ritter, and Carson Schütze. Special thanks are due to Amy Rose Deal, as well as to two anonymous reviewers, who provided extensive comments on an earlier draft. Versions of this work have been presented at the Manitoba Workshop on Person (University of Manitoba), the Workshop on Comparative Syntax and the Workshop on Approaches to Wh-Intervention (National University Singapore), McGill, Cornell, UCLA, Princeton, Maryland, UC Berkeley, Calgary, MIT, and to students in the 2019 McGill Syntax Seminar. We thank the audiences for their questions and feedback. Authors' names are listed in alphabetical order.

hierarchies to be not encoded directly in the grammar, but rather to emerge from the feature specifications of the DPs involved, discussed further below. Such configurations are grammatical if the structurally higher DP is ranked higher on these hierarchies than the structurally lower DP (as in (1); e.g. 1>3); but these configurations are ungrammatical if the structurally higher DP is ranked lower on these hierarchies than the structurally lower DP (as in (2); e.g. 3>1), a configuration that may be termed *inverse*. Hierarchy-violating inverse configurations commonly require a special form or rescue construction to obviate the violation.

(1) *Direct*



(2) *Inverse*



One of most well-studied instances of a hierarchy effect is the PCC, an example of which is provided in (3), from Basque.¹ Basque displays what is known as the Strong PCC. The Strong PCC rules out configurations in which a 1st or 2nd person direct object cooccurs with an indirect object (with some important qualifications to be discussed in section 2.3). In the ditransitive constructions in (3), the indirect object (*italicized*) structurally c-commands the direct object (*boldfaced*). The 3>3 and 1>3 configurations in (3a) and (3b) are grammatical, while the 3>1 combination in (3c) or the 1>2 combination in (3d) result in ungrammaticality.²

(3) *Basque ditransitives*

- a. Zu-k *harakina-ri* **liburua** saldu d-i-o-zu.
 you-ERG butcher-DAT book.ABS sold 3ABS-AUX-3DAT-2ERG
 ‘You have sold the book to the butcher.’ (✓ 3DAT > 3ABS)
- b. Zu-k *ni-ri* **liburua** saldu d-i-da-zu.
 you-ERG me-DAT book.ABS sold 3ABS-AUX-1DAT-2ERG
 ‘You have sold the book to me.’ (✓ 1DAT > 3ABS)
- c. *Zu-k *harakina-ri* **ni** saldu n-(a)i-o-zu.
 you-ERG butcher-DAT me.ABS sold 1ABS-AUX-3DAT-2ERG
 intended: ‘You have sold me to the butcher.’ (*3DAT > 1ABS)
- d. *Haiek *ni-ri* **zu** saldu z-ai-da-te.
 they.ERG me-DAT you.ABS sold 2ABS-AUX-1DAT-3ERG
 intended: ‘They have sold you to me.’ (*1DAT > 2ABS)

¹ Abbreviations in glosses follow Leipzig glossing conventions, with the following additions: ADDR – addressee; CL – clitic; DO – direct object; IO – indirect object; PART – participant; SPKR – speaker. In some cases, glosses have been modified from the original sources for consistency.

² The examples in (3a,d) are due to Jon Ander Mendia (p.c.); (3b,c) are from Laka (1993: 27). Below, Basque examples not otherwise attributed are due to Jon Ander Mendia (p.c.).

Much previous work on hierarchy effects has argued that these and other hierarchy-inducing configurations arise in environments in which two accessible DPs are found in the same domain as a single agreeing verbal head (e.g. Anagnostopoulou 2003, 2005, Béjar & Rezac 2003, Nevins 2007, Preminger 2014, 2019, Pancheva & Zubizarreta 2018, Oxford to appear, Stegovec 2019, among many others). This is schematized in (4). Descriptively, hierarchy violations emerge when the lower DP is featurally more highly specified or marked than the higher DP, as in (2) above.

$$(4) \quad [\text{Probe}^0 [\dots \text{DP}_1 \dots [\dots \text{DP}_2 \dots]]]$$

While such hierarchy effects have been productively approached from a considerable range of perspectives (see, e.g., Anagnostopoulou 2017 for an overview of approaches to the PCC), many accounts share the basic analytical intuition that these effects are the result of *failed agreement*, whereby an obligatory Agree or movement dependency between DP_2 and a verbal head (Probe^0 in (4)) is rendered impossible due to the presence of the higher DP_1 (Anagnostopoulou 2003, 2005, Béjar & Rezac 2003, Adger & Harbour 2007, Nevins 2007, Baker 2008, 2011, Richards 2008, Preminger 2019, Stegovec 2019). The necessity for this Agree or movement dependency can be framed in terms of case assignment and/or nominal licensing (Anagnostopoulou 2003, 2005, Béjar & Rezac 2003, Adger & Harbour 2007, Baker 2008, 2011, Richards 2008, Kalin 2019, Preminger 2019) or in the need of the DP/clitic to acquire interpretable φ -features (Stegovec 2019). Despite significant differences in their technical underpinnings, scope, and execution, what these approaches share is the intuition that the PCC is due to the disruption of this Agree or movement dependency with DP_2 by the intervening DP_1 .

In this paper, we explore a new take on hierarchy effects which does not view them as resulting from failed Agree or failures of nominal licensing. Rather, we propose that hierarchy effects are the result of having *too much Agree*. Specifically, we argue that in hierarchy-violating structures, a probe participates in more than one valuation relation, effectively “biting off more than it can chew,” a configuration that we refer to as *feature gluttony*. For example, in the structure in (4), feature gluttony (and hence hierarchy effects) arises when the probe enters into Agree with *both* DP_1 and DP_2 .

$$(5) \quad [\text{Probe}^0 [\dots \text{DP}_1 \dots [\dots \text{DP}_2 \dots]]] \quad \rightarrow \text{feature gluttony}$$

The diagram shows the structure from (4) with a dashed line connecting the Probe^0 to both DP_1 and DP_2 . A dashed arrow points from the probe to DP_1 , and another dashed arrow points from the probe to DP_2 . A horizontal dashed line connects the two arrows, indicating that the probe is involved in two separate valuation relations.

Feature gluttony—i.e. Agree between a single probe and multiple DPs—does not in and of itself cause ungrammaticality, but can create irresolvably conflicting requirements for subsequent operations, which gives rise to ineffability. The view that we are proposing thus amounts to a reversal of the standard explanation for hierarchy effects like the PCC: hierarchy effects do not arise if Agree between a probe and a DP is blocked by a higher DP; rather, they arise when such Agree takes place *in addition* to Agree with a higher DP.

In order to characterize the configurations in which double Agree takes place, as in (5), we draw on recent work on *Cyclic Agree* by Béjar (2003) and Béjar & Rezac (2009) (also see the distinction

between *interaction* and *satisfaction* in Deal 2015). From these works, we adopt the idea that probes may consist of hierarchies of subfeatures (or ‘segments’), which can agree independently and with distinct DPs. On our account, gluttony configurations such as (5) are characterized by DP_2 being *featurally more specified than DP_1* relative to the specification of the probe. In such configurations, some segments of the probe will agree with DP_1 , while others will agree with DP_2 , giving rise to feature gluttony as in (5).

An important motivation for this shift in perspective on the syntax of hierarchy effects comes from the observation that hierarchy effects (including PCC effects) frequently disappear in configurations in which no agreement or cliticization takes place (e.g., certain nonfinite clauses), and are wholly absent in languages which lack agreement or clitics altogether (Preminger 2019). In a nutshell, if hierarchy effects are due to failed Agree with a verbal head, then it is unexpected that they should disappear in configurations in which no Agree at all takes place with a verbal head. By contrast, on our proposal that hierarchy effects are the result of too much Agree with a verbal head, it follows directly that configurations that lack such Agree should not display hierarchy effects. Additional motivation comes from variation in the different possible effects of feature gluttony and the corresponding repair strategies used to circumvent them.

The rest of this paper is organized as follows. We begin in section 2 with an overview of licensing-based accounts of the PCC. This section provides necessary empirical and theoretical background, and also highlights some of the concerns raised by this family of accounts. Section 3 introduces our notion of feature gluttony. In PCC configurations, also discussed in section 3, a probe which interacts with more than one DP creates an intervention problem for clitic-doubling. In violations involving agreement, examined for German copula constructions and Icelandic dative–nominative configurations in section 4, feature gluttony results in a configuration with no available morphological output. Section 5 concludes with a summary and possible extensions.

2 Against the PCC as failed Agree

As mentioned in section 1, many current accounts analyze the PCC in terms of failed Agree: an obligatory Agree relationship between a DP/clitic and a verbal head cannot be established, leading to ungrammaticality. Our goal here is not to give a comprehensive overview or assessment of such accounts, but rather to examine some of their core properties, and then to highlight a class of challenges to the broad view that PCC effects are due to failed Agree. We show that PCC effects (and, as we will see, hierarchy effects more generally) disappear in environments that lack agreement or clitics, such as certain nonfinite clauses (Preminger 2011, 2019). This observation is surprising on a failed-Agree account.

To facilitate discussion, we will illustrate the challenge on the basis of highly influential licensing-based approaches to the PCC. On these approaches, failed Agree between a verbal head and a DP leads to ungrammaticality because it leaves the DP unlicensed/caseless (Anagnostopoulou 2003, 2005, Béjar & Rezac 2003, Adger & Harbour 2007, Baker 2008, 2011, Kalin 2019, Preminger

2019). In section 2.1, we present some additional background on PCC effects; section 2.2 illustrates how a licensing-based account derives the core effects. Section 2.3 lays out various empirical challenges for the view that PCC effects result from failures of nominal licensing or failed Agree more generally. These challenges then pave the way for our proposal in section 3 that PCC effects are the result of *too much* Agree, or in our terms, feature gluttony.

2.1 Some background on the PCC

The PCC bans certain combinations of person features across multiple phonologically-weak arguments, most commonly pronominal clitics (though we will see examples from other multiple-DP constructions below; see also Béjar & Rezac 2009 and Kalin & van Urk 2015 for extensions of a licensing account to transitive configurations in certain languages).³ In the Basque example in (3) above, for example, a 1st or 2nd person direct object is banned in the presence of an indirect object. PCC effects have been documented in a wide range of unrelated languages, including Greek, Spanish, Basque, Passamaquoddy, Walpiri, Slovenian, Kiowa, French, Sambia, Yimas, Georgian, and Albanian, to name a few (e.g., Perlmutter 1971, Bonet 1991, Laka 1993, Anagnostopoulou 2003, Haspelmath 2004, Adger & Harbour 2007, Nevins 2007, Ormazabal & Romero 2007, Riedel 2009, Doliana 2013, Pancheva & Zubizarreta 2018, Stegovec 2019); see Anagnostopoulou (2017: 6) for an extensive list of languages and references.

Despite cross-linguistic commonalities, different “strengths” of PCC have been observed (e.g., Perlmutter 1971, Bonet 1991, 1994, Anagnostopoulou 2005, 2017, Bianchi 2006, Nevins 2007, Doliana 2013, Pancheva & Zubizarreta 2018, Stegovec 2019). The Strong PCC, instantiated, for example, by Basque in (3), bans any clitic combination in which the lower direct object is 1st or 2nd person. By contrast, the Weak PCC bans 1st or 2nd person direct objects only if the indirect object is 3rd person. Varieties of the PCC are represented in Table 1. Despite this variability, what they share in common is that violations arise when the lower direct object is 1st or 2nd person.⁴

While some accounts focus on only one version of PCC, a common desideratum in the recent

³ The PCC is frequently stated as a restriction on certain *combinations* of phonologically weak φ -exponents, but Albizu (1997: fn. 8) notes that Tsotsil presents an apparent exception. As in other Strong-PCC patterns seen below, Tsotsil prohibits 1st or 2nd person direct objects in all ditransitives, even though there is no morphological exponent for a 3rd person indirect object (Aissen 1987; see also Shklovsky 2012 on related Tselal). An analogous pattern is found in Mohawk, which only permits 3rd person *inanimate neuter* themes in ditransitive direct object position (not feminine, masculine, or zoic), even if the indirect object is not marked overtly (Baker 1996). What these languages share in common is (i) only a single φ -exponent is ever possible for internal arguments, and it always targets the highest object (i.e. these are primary/secondary object languages in the sense of Dryer 1986); and (ii) a lower direct object is only possible if it is a DP which does not trigger overt φ -morphology in the language—this includes all 3rd persons in Tsotsil and 3rd person inanimate neuter DPs in Mohawk. If overt vs. null φ -agreement can be shown to be behind such patterns more broadly, neither licensing accounts nor the gluttony account proposed below offers an immediate solution. We set these patterns aside for future work, suggesting for now that the fact that these language are robustly pro-drop may play some role in bans on DPs which require overt agreement in a non-agreeing position; see Baker 2006 for relevant discussion.

⁴ Here we set aside what Doliana (2013) labels the “Super-Strong PCC” and the “Giga PCC,” reported for Kambara (Malayo-Polynesian) and Cairene Arabic, respectively. The former is reported to rule out 3>3 in addition to 3>1/2, and the latter rules out *all* combinations of weak pronouns. Following others, we suggest that these less-common

Table 1. Types of the PCC

	IO	>	DO	Examples
<i>Strong:</i>	*X	>	1/2	e.g., Basque (Laka 1993), Greek (Anagnostopoulou 2003), Kiowa (Adger & Harbour 2007)
<i>Weak:</i>	*3	>	1/2	e.g., varieties of Catalan (Bonet 1991) and Italian (Bianchi 2006), Sambiaa (Riedel 2009)
<i>Me-First:</i>	*X	>	1	e.g., Romanian (Nevins 2007), Bulgarian (Pancheva & Zubizarreta 2018)
<i>Ultra-Strong:</i>	$\left\{ \begin{array}{l} *3 > 1/2 \\ *2 > 1 \end{array} \right\}$			e.g., Classical Arabic (Fassi Fehri 1988, Nevins 2007)

literature has been to attribute the different flavors of the PCC in Table 1 to a unified account that incorporates suitable parametrization (see, e.g., Nevins 2007, Walkow 2013, and Pancheva & Zubizarreta 2018). The account that we propose below also subscribes to this desideratum.

2.2 PCC effects as licensing failures

Many current accounts of the PCC attribute the restriction to failed Agree and in particular failures of nominal licensing (see Rezac 2008b for an argument from Basque that the PCC is syntactic in nature, not morphological). We illustrate this line of approach with the Person Licensing Condition (PLC) from Béjar & Rezac (2003), which is stated in (6) (also see Béjar & Rezac 2009). It is possible to analyze (6) in terms of the Case Filter (Anagnostopoulou 2003), but we will abstract away from the relationship between the two here (see also Baker 2008, 2011 and Preminger 2014).

(6) *Person Licensing Condition (PLC; adapted from Béjar & Rezac 2003: 53)*

An interpretable [PART(ICIPANT)] feature must be licensed by entering into an *Agree* relation with a functional category.

The feature [PART] is borne by 1st and 2nd person DPs, but not by 3rd person DPs. Individual analyses differ as to whether only 1st and 2nd person DPs need to be licensed (Béjar & Rezac 2003, also see Ormazabal & Romero 1998), or whether all DPs require licensing (i.e. abstract Case), but 1st/2nd person DPs must receive it in a special way (Baker 1996, Anagnostopoulou 2003); see Rezac (2008b) for discussion. What licensing accounts of the PCC share in common is the proposal that there is something special about 1st and 2nd person DPs, to the exclusion of 3rd (see

bans which do not involve reference to hierarchies may be better suited to a morphophonological explanation (see e.g. Nevins 2007 on Spanish “spurious *se*” and Preminger 2019 for discussion).

We also do not discuss here PCC effects related to animacy, as discussed for example in Ormazabal & Romero (1998) for certain dialects of Spanish. Following Richards (2008) and Adger & Harbour (2007), these may plausibly be connected to variation in specification of person features, and thus compatible with our feature-based account; see also Stegovec (2019). See section 3.4.3 and fn. 26 for more on gender.

also for example Nichols 2001 and work discussed there), and that this property requires special licensing through φ -Agree. This is what (6) encodes.

Abstracting away from specific proposals, the general idea underlying this line of account is that PCC violations arise when the higher DP *intervenes* between the probe and a lower [PART] DP, preventing licensing of the [PART] DP. This is schematized for a PCC-violating 3>1 configuration in (7) (such as the Basque example in (3c) above), with the object-licensing probe located on ν . Here, ν first matches the 3rd person indirect object, but due to intervention, ν cannot agree with the lower 1st person direct object, which hence remains unlicensed. This violates the PLC (6), leading to ungrammaticality.

$$(7) \quad * [{}_{\nu P} \nu [\dots DP_{[3SG]} [\dots DP_{[1SG]}]]] \quad \rightarrow \text{licensing failure for } DP_{[1SG]}$$

By contrast, the structure for a PCC-obeying 1>3 configuration, like (3b) above, is shown in (8). As before, ν matches the indirect object, but it cannot agree with the direct object. In this case, however, because the direct object is 3rd person and hence does not bear a [PART] feature, it is not dependent on licensing by ν . this lack of Agree is therefore harmless, and the structure converges.

$$(8) \quad [{}_{\nu P} \nu [\dots DP_{[1SG]} [\dots DP_{[3SG]}]]]$$

As a result, on this general line of analysis, 1st and 2nd person DPs remain unlicensed if they are separated from ν by an indirect object. This derives the Strong PCC. For other varieties of PCC, more needs to be said (see, e.g., Anagnostopoulou 2005 and Nevins 2007 for relevant proposals and discussion). Because we will ultimately argue against a licensing account of the PCC, we will not review its extensions to varieties other than the Strong PCC.

2.3 Caveats for licensing accounts

While a licensing-based approach elegantly captures many of the special properties of [PART] DPs in hierarchy-violating configurations, recent work has shown that it can't be the case that *all* [PART] DPs need licensing through φ -Agree, as in the original formulation in (6) above. Instead, additional caveats are required, and these caveats pose an analytical challenge to licensing-based accounts of the PCC. The most explicit exploration of such caveats is Preminger (2011, 2019), who argues that the PLC does not apply to all DPs, but only to those DPs that occur in a clause that contains a φ -probe. This revised version of PLC is stated in (9); also see Preminger (2019: 7) for a more detailed formulation that is also compatible with our proposal here.⁵

⁵ Preminger (2019) adds an additional caveat, namely that DPs which are in case forms inaccessible to Agree, must also be exempt from the requirement that they be licensed by a φ -probe.

(9) *Person Licensing Condition* (PLC; adapted from Preminger 2011: 931)

A [PARTICIPANT] feature on a DP in the same clause as a person φ -probe must be agreed with by that φ -probe.

(9) is weaker than the original PLC in (6) as it includes an additional caveat: Licensing of [PART] through Agree is required only for those DPs that appear in a clause that also hosts a φ -probe. DPs in clauses that do not contain a φ -probe do *not* need to be licensed by Agree even if they bear [PART]. (9) thus amounts to the claim that the licensing need of a [PART] DP is not absolute, but relative to the syntactic context of this DP.

Crucial evidence for the need for this caveat comes from Basque (Preminger 2011, 2019). Here, PCC effects disappear in nonfinite (i.e. probeless) environments (Laka 1993: 27, Albizu 1997: 5, Arregi & Nevins 2012: 65–69). Recall from (3) above that Basque exhibits PCC effects in ditransitive constructions, such that inverse ‘indirect object>direct object’ combinations such as 3>1 are ruled out (see (10a)). Surprisingly, if the same argument configuration appears in a nonfinite clause, no PCC effect obtains, as shown for case-marked infinitival clauses in (10b) (based on Laka 1993: 27; using Preminger’s 2009 terminology), and for adpositional clauses in (10c).

(10) *Basque PCC effects disappear in nonfinite clauses*

- a. *Zu-k *harakina-ri ni* saldu n-(a)i-o-zu.
you-ERG butcher-DAT me.ABS sold 1ABS-AUX-3DAT-2ERG
‘You have sold me to the butcher.’ (*3DAT > 1ABS)
- b. Gaizki iruditzen \emptyset -zai-t [zu-k *harakina-ri ni* sal-tze-a].
wrong look.IPFV 3ABS-AUX-1DAT you-ERG butcher-DAT me.ABS sell-NMLZ-ART.ABS
‘It seems wrong to me for you to sell me to the butcher.’ (✓3DAT > 1ABS)
- c. Zu-k [*harakina-ri ni* sal-tze-n] probatu d-u-zu.
you-ERG butcher-DAT me.ABS sell-NMLZ-LOC attempted 3ABS-AUX-2ERG
‘You have attempted to sell me to the butcher.’ (✓3DAT > 1ABS)

Why is it that the same combination of verb, indirect object, and direct object results in a PCC violation in finite clauses (10a), but not in nonfinite clauses (10b,c)? An important difference between (10a) on the one hand and (10b,c) on the other is that the direct and indirect objects in (10b,c) are not clitic-doubled or agreed with in either the embedded clause or the matrix clause. Following Preminger (2019), we take this to mean that no φ -Agree with these objects has taken place (also see Anagnostopoulou 2003: 315, 320 on Greek). It seems to be the absence of this φ -Agree that underlies the absence of PCC effects in these configurations.

Effects like those in (10) are not limited to Basque. The disappearance of hierarchy effects in environments that lack φ -agreement or cliticization has also been documented for nominalized clauses in Georgian (Bonet 1991: 189–191, Béjar & Rezac 2003: 50; Léa Nash, p.c.), and—as we will see in section 4 below—in nonfinite clauses in Icelandic (Sigurðsson & Holmberg 2008, Preminger

2011), and German (Keine et al. 2018). In a similar vein, repairs to the PCC in languages like Greek and Spanish involve the absence of cliticization, discussed in section 3.5.

The observation that hierarchy effects like the PCC disappear in configurations in which no Agree takes place should find an explanation in the analysis of hierarchy effects. But as Preminger (2011, 2019) points out, a blanket licensing requirement on [PART] DPs such as the PLC in (6) does not lend itself to such an explanation. Recall that the standard PLC in (6), which requires all [PART] DPs to be licensed through φ -Agree, explains the ungrammaticality of (10a) as a licensing failure because the direct object *ni* cannot be agreed with. However, given that the direct object is not agreed with in (10b,c) either, the original PLC in (6) would predict (10b,c) to also give rise to a licensing failure, contrary to fact.⁶ Conversely, given that the direct object is clearly licensed in (10b,c), whatever licensing mechanism applies in (10b,c) should also be available in (10a). But this would undermine the licensing-based account of the ungrammaticality of (10a). The original PLC in (6) therefore leaves the crucial contrast in (10) unaccounted for.

Preminger's (2011, 2019) revised PLC in (9) is designed to resolve this paradox within the confines of a licensing account. It does so by stipulating that only [PART] DPs that have a clausemate φ -probe need to be licensed through φ -Agree. Because the direct object in (10b,c) does not have a clausemate φ -probe, it is exempted from the licensing requirement, and no PCC effect arises. A related proposal is advanced by Anagnostopoulou (2003, 2005), who appeals to a default licensing mechanism to account for grammatical Greek configurations which lack clitic-doubling. Applied to the Basque facts in (10), her proposal would require that such default licensing be available in nonfinite clauses, but not in finite clauses. Another related suggestion is made by Pancheva & Zubizarreta (2018: 31–32), who stipulate that their “P-Constraint” only targets agreeing DPs, exempting the object in (10b,c).

We conclude with Preminger (2011, 2019) that facts like (10) cast doubt on the original version of the PLC in (6)—or any account that attributes the PCC to failed obligatory φ -Agree with a DP. Preminger's (2011, 2019) weakened version of the PLC is empirically more adequate because it stipulates that DPs that occur in a clause without a φ -probe are exempt from the licensing requirement. While this stipulation derives the facts in (10), it raises important new questions. As it stands, this caveat is successful because it effectively restates the empirical puzzle as part of the analytical constraint. As such, it does not provide an explanation for *why* a nominal's licensing needs should be suspended in contexts in which a licensing probe is absent.

Rather than supplementing the PLC with these caveats, we take the empirical evidence to suggest that a different approach is warranted, one that severs PCC effects from nominal licensing altogether. Specifically, we take the discovery that PCC effects disappear in the absence of φ -Agree to suggest that *the problem lies with the probe*. We propose a significant shift in perspective on hierarchy effects. Rather than attributing them to failures of nominal licensing or failed Agree more generally, we explore the view that these effects arise from a problem *created by* the φ -probe.

⁶ In fact, in (10b,c), neither the direct nor the indirect object is agreed with. To the extent that we might expect a contrast between the two cases, a PLC account might lead one to expect the licensing problem to be *worse* in (10b,c) than in (10a), exactly the opposite of what we find.

3 Gluttony and clitics

In this section, we lay out an alternative means of deriving the PCC effects examined in section 2. We attribute PCC and other hierarchy effects to what we term *feature gluttony*. Because our account is not based on nominal licensing, the caveat described above are not necessary. We begin by developing our account for clitic doubling and the PCC in this section; section 4 then applies the proposal to hierarchy effects in the domain of agreement.

3.1 Proposal: Probe gluttony

3.1.1 Feature geometries. We take person and number features to be arranged in feature geometries (Harley & Ritter 2002, Béjar 2003, among many others), shown in (11) and (12) for person and number, respectively.



These geometries encode entailment relations among features, such that features on lower nodes entail the features on higher nodes. For example, the specification for 1st person is internally complex, containing not only the feature [SPKR], but the full set of entailed features, [PERS [PART [SPKR]]]. A 2nd person DP is specified as [PERS [PART [ADDR]]], while 3rd person DPs are specified simply as [PERS] (i.e., they are characterized by the absence of the three other features; see Nevins 2007 for arguments that 3rd person does not simply correspond to the wholesale absence of person features). The situation is analogous for number: singular is characterized by the feature [NUM], whereas plural consists of [NUM [PL]]. More complex specifications are possible, but not discussed here.⁷

We furthermore assume that φ -probes too may vary as to the degree to which they are articulated in a way analogous to the hierarchies in (11) and (12). In Deal’s (2015) terms, they may vary as to what kinds of features they are *satisfied by*, in other words what kinds of features have to be matched in order for the probe to stop searching for a goal (Béjar 2003, Béjar & Rezac 2009, Preminger 2014, Oxford to appear). Specifically, we assume that probes may consist of hierarchically organized *segments* (adopting terminology from Béjar & Rezac 2009). Examples are provided in (13). The probe in (13a), for instance, is fully satisfied by any DP with person features. The probes in (13b) and (13c) are pickier: the probe in (13b) is fully satisfied by 1st and 2nd person DPs, while the probe shown in (13c) is fully satisfied only by 1st person DPs.

⁷ Because these feature structures determine the application of the syntactic operation Agree, they must be syntactically represented, not part of PF or morphology. We assume that these structures are universally constrained in that they represent semantic entailments, though cross-linguistic variation may exist in the number of contrasts present in a given system, discussed in detail in Harley & Ritter (2002). They could either be part of UG or assembled in a pre-syntactic generative lexicon; see also fn. 19 below. We thank a reviewer for raising this question.

- (13) a. $[uPERS]_{\pi}$ – fully satisfied by any person-bearing DP
- b. $\begin{bmatrix} uPERS \\ | \\ uPART \end{bmatrix}_{\pi}$ – fully satisfied by 1st and 2nd person DPs
- c. $\begin{bmatrix} uPERS \\ | \\ uPART \\ | \\ uSPKR \end{bmatrix}_{\pi}$ – fully satisfied by 1st person DPs

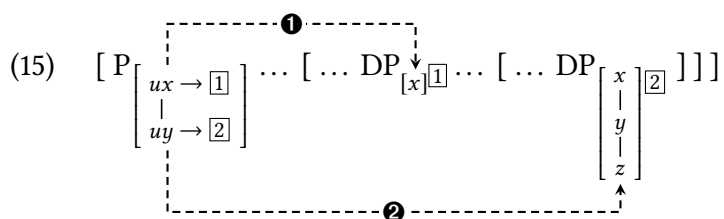
3.1.2 Agree. Against this background, we adopt the definition of Agree in (14). In a nutshell, a probe will agree with the closest accessible DP which matches some of its segments. If there are remaining segments that are not matched, the probe is not satisfied, in Deal’s (2015) terms, and the remaining segments continue probing. As in Béjar & Rezac’s (2009) Cyclic Agree, whether a probe conducts multiple search operations is directly determined by whether it has remaining unvalued segments after Agree.

- (14) *Agree*
- Given a probe P with a hierarchy of unchecked feature segments $[uF]$,
- P searches the closest accessible DP in its domain such that this DP contains feature set $[G]$, with $[G] \cap [F] \neq \emptyset$;
 - the feature hierarchy containing $[G]$ is copied to P;
 - $[G]$ is removed from $[uF]$;
 - iterate over steps a.–c. until $[uF] = \emptyset$ or search fails.

We walk through each step in (14) in turn. First, (14a) specifies that Agree is triggered by the presence of unchecked feature segments on a probe, and that it targets a DP whose features match these unchecked segments. Note that (14a) only requires that there be some overlap between the unchecked segments on the probe and the corresponding segments on the goal. In principle, either can be a superset of the other. When Agree is established, the entire feature geometry that contains the matched segment on the DP is copied over to the probe (14b), and the matching segments on the probe are deleted (14c). As will become important in section 4, the feature copying step in (14b) is *coarse* in the sense that the entire feature geometry of a DP is copied, even if only a segment of it undergoes Agree (see Béjar & Rezac 2009: 45–46 for a similar view). In Deal’s (2015) terminology, a probe interacts with the entire feature geometry on the goal, even if not all segments are matched. Finally, if Agree between a probe and a DP leaves some featural residue on the probe (because not all segments were matched by the DP), the remaining segments continue probing (14d).

3.1.3 A dry run. We begin by illustrating how the system works schematically, since it will be employed in our accounts of hierarchy effects involving both pronominal clitics (the remainder of

this section) and morphological agreement (§4), where different aspects of the overall proposal will be relevant. The goal at this point is to illustrate the mechanics of the system and introduce the notation to be used in what follows. A detailed application to specific empirical cases will follow. Specifically, we show how the Agree system in (14) operates with derivations representing the three types of possible configurations found between two goal DPs with respect to the unvalued features of a higher probe: (i) the lower DP has *more* features than the higher DP (as in 3>1 for person features); (ii) the lower DP has *fewer* features than the higher DP (1>3); and (iii) the two DPs have *identical* features (3>3). The first type of configuration corresponds to an inverse configuration (see (2) above), and it is only this configuration which results in gluttony. Consider the abstract structure in (15).



Here, an articulated probe P comprising the unchecked segments $[ux [uy]]$ probes a structure that contains two DPs. The higher DP contains only the feature $[x]$; the lower DP contains the feature hierarchy $[x [y [z]]]$; as noted above, for person features, this could correspond to a 3>1 configuration. In accordance with (14a), P agrees with the higher DP, as this DP matches some of its unchecked segments (namely, $[ux]$). This is step ❶. As a result of this Agree relationship, the feature hierarchy containing $[x]$ —which, in this case, is just $[x]$ —is copied over to the probe (see (14b)), deleting $[ux]$ (see (14c)). For ease of notation, we depict feature copying by means of the identifiers $\boxed{1}$ and $\boxed{2}$. For example, “ $ux \rightarrow \boxed{1}$ ” in (15) expresses that Agree for segment $[ux]$ leads to copying of the feature hierarchy $\boxed{1}$ (which in this case is just $[x]$) and to deletion of $[ux]$. Crucially, because the DP lacks $[y]$, the segment $[uy]$ on the probe is not deleted, and in accordance with (14d), it continues probing. The closest DP that matches $[uy]$ is the lower DP, whose feature structure is $[x [y [z]]]$. Accordingly, $[uy]$ agrees with this DP (❷). This Agree relationship leads to the entire feature geometry $[x [y [z]]]$ being copied over to the probe, and to deletion of $[uy]$ (notated as “ $uy \rightarrow \boxed{2}$ ”).

As a result of the derivation in (15), the probe P has agreed with both DPs, and as a result, the feature geometries of both DPs have been copied over to the probe. The content of the probe after both Agree relations have been established is given in (16). P in (16) is *gluttonous* because it has agreed with, and hence acquired values from, two DPs.

$$(16) \quad P = \left\{ [x] \boxed{1}, \left[\begin{array}{l} x \\ | \\ y \\ | \\ z \end{array} \right] \boxed{2} \right\}$$

As a second example, consider the structure in (17). Here the higher DP is featurally more

specified than the lower DP (as would be the case, for example, with a 1>3 configuration). The higher DP matches both $[ux]$ and $[uy]$ on the probe, leading to Agree. As a result, the DP's entire feature geometry containing $[x[y[z]]]$ is copied over onto the probe. Because both $[ux]$ and $[uy]$ have been matched, both are deleted. No residual segments remain on the probe, and consequently, no second Agree relation is established.

$$(17) \quad [P \left[\begin{array}{c} ux \\ | \\ uy \end{array} \right] \rightarrow \boxed{1}] \dots [\dots DP \left[\begin{array}{c} x \\ | \\ y \\ | \\ z \end{array} \right] \boxed{1}] \dots [\dots DP \left[\begin{array}{c} x \\ | \\ y \end{array} \right]]]]$$

The content of P that results from (17) is given in (18). In this case, P is not gluttonous, as it has only agreed with a single DP.

$$(18) \quad P = \left\{ \left[\begin{array}{c} x \\ | \\ y \\ | \\ z \end{array} \right] \boxed{1} \right\}$$

Finally, gluttony also does not arise if the two DPs are equally specified, as in a 3>3 configuration. This is illustrated in (19), where both DPs bear only $[x]$. The probe hence agrees with the higher DP, leading to copying of $[x]$ and deletion of $[ux]$. While $[uy]$ remains on the probe, neither DP contains a matching feature $[y]$, and so search fails and no further Agree is established. The resulting probe bears the specification in (20).

$$(19) \quad [P \left[\begin{array}{c} ux \\ | \\ uy \end{array} \right] \rightarrow \boxed{1}] \dots [\dots DP \left[\begin{array}{c} x \\ | \\ x \end{array} \right] \boxed{1}] \dots [\dots DP \left[\begin{array}{c} x \\ | \\ x \end{array} \right]]]]$$

$$(20) \quad P = \left\{ [x] \boxed{1} \right\}$$

We assume, following Preminger (2014), that a probe with unvalued features must initiate a search operation, but failure to enter into Agree does not cause the derivation to crash. Consequently, the fact that $[uy]$ is left over in (19) is not fatal.

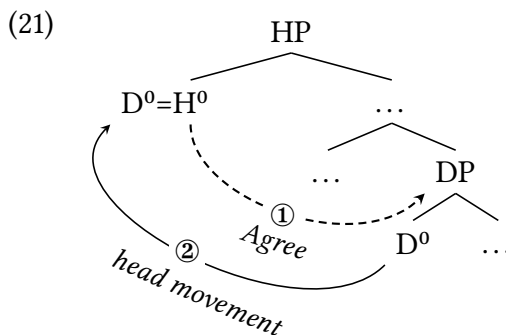
A general consequence of this system is that because unchecked feature segments instigate probing, and because segments are deleted when matched under Agree, a probe which has already entered into Agree with one DP will only agree with a subsequent DP that possesses *more* features than the higher DP relative to the probe (assuming that the relevant features are hierarchically organized and thus not entirely disjoint). This is the case in (15), but not in (17) or (19). As noted above, the result is that such “double Agree” will only arise in inverse configurations, for principled reasons.⁸

⁸ Note that while our account may appear to bear some resemblance to Multiple Agree (Hiraiwa 2001, 2005,

Finally, as will become clear as we proceed, gluttony also does not, in and of itself, cause the derivation to crash. In sections 4 and 5 we will encounter specific cases in which gluttonous configurations converge. Nonetheless, a probe which has entered into multiple Agree relationships may precipitate other independently motivated problems, to which we turn next.

3.2 The syntax of cliticization: Auxiliary assumptions

In order to apply this abstract system to the PCC, we adopt a few additional assumptions, which have been argued for independently in the recent literature on the PCC and cliticization. First, because the PCC most commonly involve clitics, we need to make explicit our assumptions about cliticization. While morphological agreement (discussed further in section 4) is the morphological spell-out of valued φ -features, we follow much previous work which takes pronominal cliticization to be an instance of long head movement of a D^0 head, triggered by an underlying φ -Agree relationship between the probe (clitic host) and goal DP (e.g., Anagnostopoulou 2003), as shown in (21). Here the probe on the head H^0 enters into Agree with the DP, triggering movement of the D^0 head. The clitic is the realization of this D^0 head. The relevant agreeing probes are typically finite T^0/Infl^0 and v^0 . A number of specific implementations are conceivable, and the choice will not matter for our purposes here.⁹



Second, we adopt from Béjar & Rezac (2003) that the functional heads responsible for licensing DPs (v^0 and T^0) are made up of distinct probes, at least person (π) and number ($\#$), which probe separately (Laka 1993, Taraldsen 1995, Béjar 2003, Rezac 2003, Sigurðsson 2004a, Sigurðsson & Holmberg 2008, Kalin 2019). Furthermore, these two probes are universally ordered such that π probes before $\#$ (Béjar & Rezac 2003, Preminger 2011).

Third, with Anagnostopoulou (2003), Béjar & Rezac (2003), and Preminger (2009) we assume

Anagnostopoulou 2005, Nevins 2007), in the system proposed here every individual Agree operation is strictly limited insofar as each *segment* of a complex probe agrees with (at most) one DP. As such, our proposal is much closer to the segment-based theory of Agree in Béjar & Rezac (2009) than to traditional Multiple-Agree accounts. Multiple Agree in this traditional sense is ruled out on our account.

⁹ One option is the *big-DP* analysis (Uriagereka 1995, Cecchetto 2000, Belletti 2005, Arregi & Nevins 2008, 2012, van Craenenbroeck & van Koppen 2008, Roberts 2010). Other examples of accounts that involve both Agree and movement in the derivation of clitic doubling include Harizanov (2014) and Preminger (2019).

that that pronominal cliticization of a DP removes that DP as an intervener for subsequent operations because it makes this DP behave like the trace of A-movement.

3.3 How this works for the PCC

With these assumptions in place, we now turn to our account of PCC effects. The core difference between our proposal and standard licensing-based approaches is that that these approaches attribute hierarchy violations to a failure of Agree and hence failed nominal licensing, while on our account the problem results instead from an *overapplication* of Agree.

Our initial illustration of the system will focus on the Weak PCC, as found for example in Catalan, which bans [PART] DPs from appearing in direct object position when the indirect object is 3rd person (*3>[PART]); all other combinations are grammatical, as shown in (22).

- (22) *Weak PCC:*
- a. *3 > 1/2
 - b. 1/2/3 > 3
 - c. 1/2 > 1/2

Unlike in the Strong PCC, combinations of [PART] DPs are grammatical (22c). To account for the Weak PCC, we propose that v^0 contains a person probe π and a number probe #, specified as in (23). Crucially, π is articulated as [*uPERS* [*uPART*]]. For the sake of concreteness, we depict # as articulated to [*uNUM* [*uPL*]], on the assumption that split probes of this type are always internally articulated, though nothing hinges on this (see also the discussion in §3.4.3). As noted in the previous section, we assume that π universally probes before #, which we indicate with the notation “[$\pi \triangleright \#$]”.¹⁰

$$(23) \quad v^0 \left[\left[\begin{array}{c} uPERS \\ | \\ uPART \end{array} \right]_{\pi} \triangleright \left[\begin{array}{c} uNUM \\ | \\ uPL \end{array} \right]_{\#} \right]$$

We now illustrate how our account derives the Weak PCC in (22), illustrated with examples from Catalan. We first demonstrate a PCC-compliant 2>3 configuration such as (24).

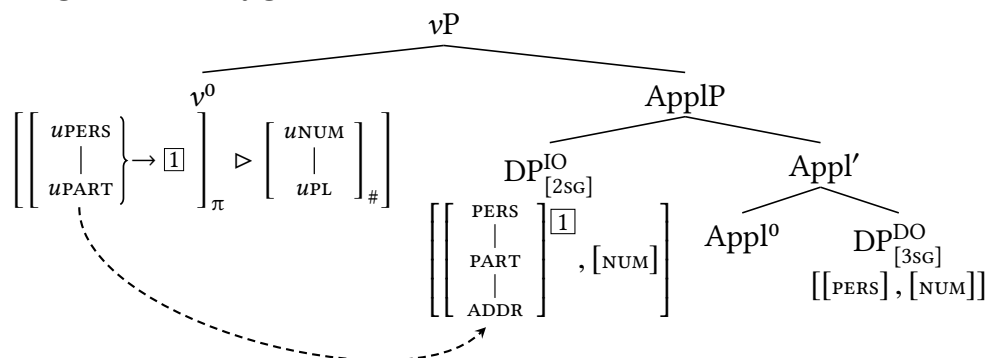
- (24) *Catalan* (Bonet 1991:179)
- En Josep, **te** '1 va recomenar la Mireia.
 the Josep, 2CL 3CL recommended the Mireia
 ‘Mireia recommended him (Josep) to you.’ (✓ 2 > 3)

In this derivation, the π -probe probes first and enters into Agree with the 2nd person indirect object DP; the indirect object’s full set of person features ($\bar{1}$) are copied back to the probe, and

¹⁰ This might be implemented as extrinsic ordering of features on a head. See, e.g., Müller (2010) and Georgi (2017) for proposals in a variety of domains.

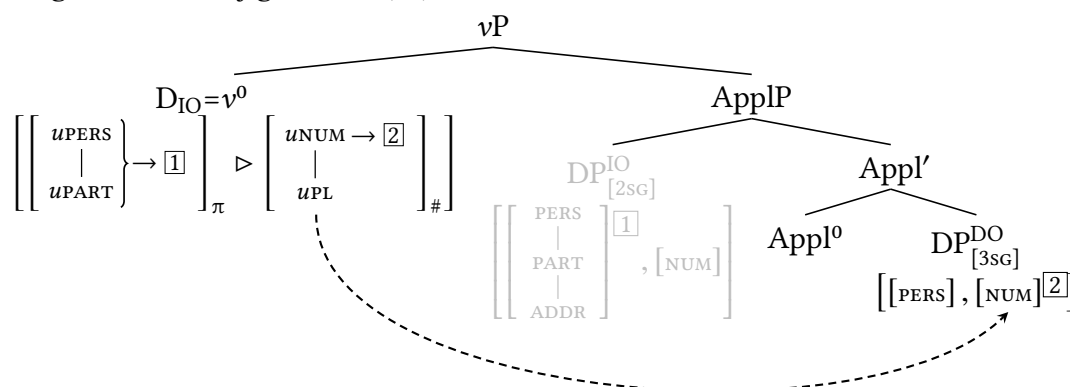
[*uPERS*] and [*uPART*] on the probe are deleted under matching. As a result of this Agree, the indirect object is clitic-doubled, creating the 2nd person *te* in (24). This step is shown in (25).

(25) π -Agree in 2>3 configuration (24)



In the next step, shown in (26), # probes. As noted above, we assume following Anagnostopoulou (2003), Béjar & Rezac (2003), and Preminger (2009) that clitic-doubling of a DP removes that DP as an intervener for subsequent operations. Because the indirect object has been clitic-doubled as a result of π -Agree, it thus no longer intervenes for #-probing; # locates the lower direct object, agrees with its [*NUM*] feature, and creates the 3rd person direct object clitic double (*'l* in (24)).

(26) #-Agree in 2>3 configurations (24)



Because the probe on v^0 has thus agreed with both objects and both have been clitic-doubled, the resulting configuration contains two clitics on v^0 ; setting aside possible language-specific morphological ordering restrictions on clitic combinations, this is shown in (27).

(27) $D_{DO}=D_{IO}=v^0$

Our proposal inherits from Béjar & Rezac (2003) the idea that the direct-object clitic is the result of #-Agree, whereas the indirect-object clitic results from π -Agree. Because clitic doubling involves movement of a D^0 head (see section 2.1 above), both clitics nonetheless express person and number features. On this “featural coarseness of clitic doubling,” see Preminger (2014: 50–54).

Next, we consider a PCC-violating 3>2 configuration, an example of which is provided in (28).

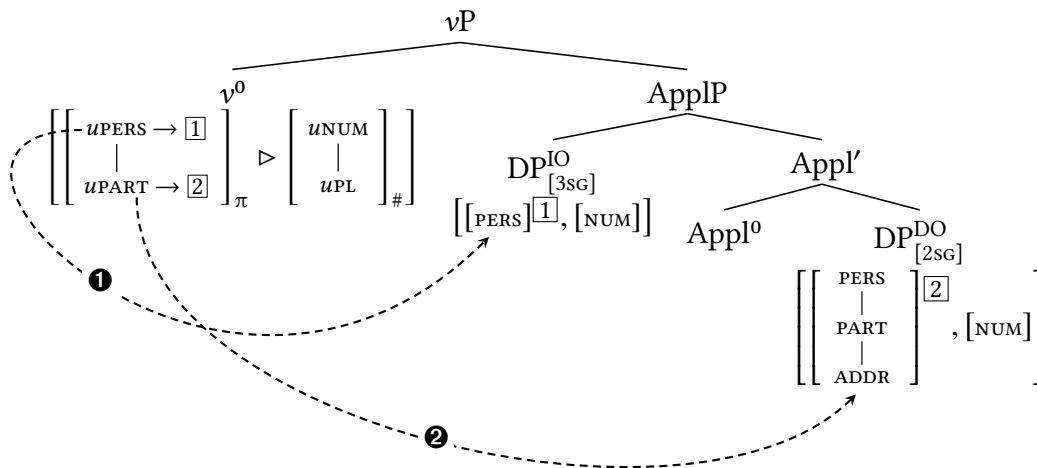
(28) *Catalan* (Bonet 1991: 179)

*A en Josep, **te** **li** va recomanar la Mireia.
 to the Josep, 2ACC.CL 3DAT.CL recommended the Mireia
 intended: ‘Mireia recommended you to him (Josep).’

(*3 > 2)

The schematic structure of π -Agree in (28) is shown in (29). The articulated π -probe first reaches the indirect object DP, which—being 3rd person—bears only a [PERS] specification. This [PERS] feature matches [*u*PERS] on the probe, leading to Agree and deletion of [*u*PERS] (❶). At this point, the probe still retains [*u*PART], which is not matched by the indirect object. [*u*PART] initiates a second search, agreeing with the 2nd person direct object (❷).

(29) π -Agree in 3>2 configuration (28)



The two Agree steps in (29) give rise to gluttony: a single probe (i.e., π) has agreed with two DPs. After these Agree relations have been established, clitic doubling must take place. Taking clitic-doubling to be an instance of movement, we propose the ungrammaticality of gluttonous PCC configurations like the one in (29) results from conflicting requirements on movement brought about by the fact that π has agreed with two DPs. Specifically, we invoke two independently-motivated general constraints on movement, namely *Best Match* and the *Attract Closest*. *Best Match* requires movement of the DP with the most specific (that is, richly articulated) feature structure. Precedents for this constraint include van Urk & Richards’ (2015) *Multitasking*, Coon & Bale’s (2014), van Urk’s (2015) and Oxford’s (to appear) *Best Match*, and Lahne’s (2012) *Maximize Matching* (building on Chomsky 2000, 2001). The second constraint *Attract Closest* (also known as the *Minimal Link Condition* or *Shortest*) dictates that the probe move the highest or *closest* eligible DP (e.g., Chomsky 1995, Kitahara 1997, Müller 1998, Fitzpatrick 2002, Rackowski & Richards 2005).

These two constraints apply in tandem when a probe agrees with only a single goal. But in feature-gluttony configurations, where a single probe agrees with two DPs, they give rise to a conflict. On the one hand, *Best Match* requires clitic doubling of the lower DP, whose person segments are a proper superset of that of the higher DP. On the other hand, *Attract Closest* requires clitic doubling of the higher DP. We propose that these two constraints are *unranked*

and *inviolable*. This gives rise an irresolvable conflict: First, clitic-doubling the higher DP satisfies Attract Closest, but it violates Best Match. Second, doubling the lower DP satisfies Best Match, but it violates Attract Closest. Third, doubling neither DP violates both constraints. Fourth, assuming a Markovian syntax without simultaneous syntactic operations, doubling both DPs would require doubling one of them first. But this would likewise violate one of the two constraint (depending on which one is doubled first). In a Markovian system without look-ahead, where every step of the derivation must be well-formed, this is sufficient to exclude such a derivation. As a consequence, every potential clitic-doubling operation (including the absence of clitic doubling) leads to a fatal violation of at least one of the two constraints. In other words, the two constraints impose mutually incompatible requirements on clitic doubling. Both constraints being inviolable, there is simply no way to proceed from the structure in (29). This renders the structure ineffable, and hence ungrammatical.¹¹

One final possibility that we need to consider is to initiate clitic doubling of the indirect object *before* π enters into Agree with the direct object (hence, after step ❶ in (29)). This option is ruled out due to the granularity of Agree (14). Specifically, while the definition of Agree in (14) is defined in terms of sub-procedures, (14) as a whole qualifies as a single syntactic operation. It is consequently impossible to intersperse parts of it with clitic doubling. Put differently, because ❶ and ❷ in (29) are sub-steps of a single operation, it is impossible to apply clitic doubling after step ❶ but before step ❷.

We next consider combinations of two [PART] DPs—i.e., 1>2 and 2>1—which are grammatical in Weak-PCC languages, as illustrated in (30).

(30) *Catalan* (Bonet 1991: 179)

Te'm van recomanar per a la feina.

2CL.1CL recommended for the job

'They recommended me to you for the job.'

(✓ 2 > 1)

'They recommended you to me for the job.'

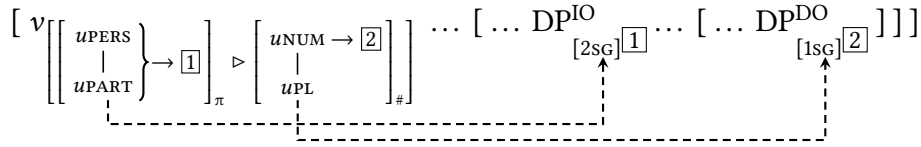
(✓ 1 > 2)

As shown in (31), π is fully matched by the indirect object, leading to deletion of both [*u*PERS] and [*u*PART]. Thus, no second Agree between π and the direct object takes place, and clitic doubling of the higher DP proceeds as in (25). Subsequently, # agrees with and clitic-doubles the direct object, ignoring the already clitic-doubled higher DP, as in (26).¹²

¹¹ We do not have anything new to add to the question of why clitic-doubling should be required in certain languages or configurations in the first place. However, given the independently-attested requirement of clitic-doubling in certain contexts, our account explains why inverse configurations result in ungrammaticality. We correctly predict that where clitic-doubling is *optional*, ungrammaticality should not arise if clitic-doubling does not take place, discussed in section 3.5.

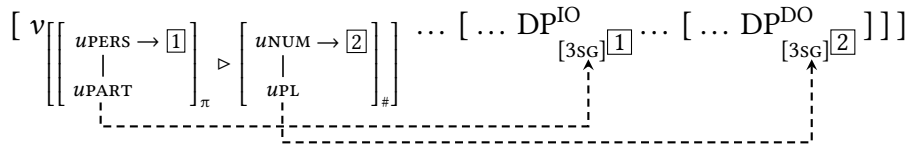
¹² In the interest of space, we will not show φ -features on DPs as full-blown feature structures from now on, though this is a notational simplification. Thus, [2SG] in (31) is an abbreviation for a [PERS [PART [ADDR]]] feature structure for person and a [NUM] feature structure for number.

(31) *Agree in 2SG>1SG (30)*



Finally, the structure for grammatical 3>3 configurations is provided in (32) (no example shown in the interest of space). Here, the indirect object only matches π 's $[u_{\text{PERS}}]$, and $[u_{\text{PART}}]$ is hence not deleted. But because the direct object (being 3rd person) lacks a matching $[u_{\text{PART}}]$ counterpart, it does not constitute a goal for $[u_{\text{PART}}]$. As a result, no second Agree dependency between π and the direct object is established. As before, the indirect object is clitic-doubled, and $\#$ agrees with the direct object across it.

(32) *Agree in 3SG>3SG:*



In sum, a gluttonous probe arises only if the direct object is more specific than the indirect object relative to the specification of the probe. As we saw, this is the case in 3>1 and 3>2 configurations, but not in any other configuration.¹³ Consequently, it is in precisely these two configurations that an irresolvable conflict arises with respect to the movement operation necessary to create pronominal clitics.

The analytical shift from nominal licensing to gluttonous probes enables an immediate explanation of the observation that PCC effects disappear in nonfinite environments that lack agreement and clitic doubling (see (10)), and more generally are present only when ϕ -morphology is involved (see Anagnostopoulou 2017, Preminger 2019). As discussed in section 2.3, the disappearance of PCC effects in environments which apparently lack Agree makes it necessary to weaken the PLC such that a DP that normally requires licensing through ϕ -Agree no longer requires such licensing if it is not clausemate to a ϕ -probe (i.e., Preminger's 2011 version of the PLC in (9) above). A gluttony account offers a more principled way of understanding this complication: Because the PCC arises when a *probe* enters into ϕ -Agree with more than one DP, we immediately predict that the PCC disappears in environments that lack this probe. This is illustrated in (33), which

¹³ While a gluttony account naturally accounts for the grammaticality of $[\text{PART}]>[\text{PART}]$ configurations in a Weak PCC language, further complications are required on a licensing account. On a licensing account, which requires $[\text{PART}]$ DPs to be licensed through π -Agree, a $[\text{PART}]$ direct object can be targeted by π -Agree across a $[\text{PART}]$ intervener, but not across a 3rd person intervener. Anagnostopoulou (2005) and Nevins (2007) develop a licensing-based account for the Weak PCC that incorporates Multiple Agree (Hiraiwa 2001, 2005). Nevins' (2007) account relies on *Contiguous Agree*: a condition on Multiple Agree that permits the probe to license contiguous DPs with *marked* (i.e. $[\text{+PART}]$) features. Contiguous Agree allows both DPs to be licensed by a single probe in $[\text{PART}]>[\text{PART}]$ configurations, but rules out 3> $[\text{PART}]$ configurations, in which an unmarked (i.e. $[\text{-PART}]$) feature intervenes. The upshot is that Agree is blocked by unmarked features, but not by marked features. While this restriction on Multiple Agree achieves the desired contrast, it is worth noting that it seems to be at odds with established locality principles like Relativized Minimality (Rizzi 1990).

represents the structure of a 3>1 or 3>2 configuration in a probeless nonfinite clause. Due to the absence of a φ -probe, no gluttony arises, and the structure emerges as wellformed.¹⁴

- (33) *Licit hierarchy configuration with no probe* \rightarrow *no gluttony*
 \checkmark [... DP_[3SG] ... [... DP_[1/2SG] ...]]

Because our account does not rely on special licensing requirements for 1st and 2nd person DPs, no caveat that specifically exempts such DPs from the licensing requirement in structures that lack a clausemate φ -probe is necessary. Rather, the contrast between finite and nonfinite clauses in Basque in (10) follows immediately from the independently observable contrast as to whether clitic doubling takes place.

3.4 PCC variation

Section 3.3 illustrated the gluttony account for a Weak-PCC system. Recall from Table 1 in section 2.1 that there is crosslinguistic (and in some cases, inter-speaker) variation in the precise set of configurations that is ruled out. In this section, we consider two independently-attested points of variation within our system which result in the attested variation across PCC: (i) the nature of the indirect object DP, and (ii) the degree of articulation of the φ -probe.

3.4.1 Datives and the Strong PCC. We begin with the Strong PCC, which rules out not only 3>[PART] configurations but also [PART]>[PART] structures. One example of a Strong-PCC language is Basque; a relevant 1>2 configuration is repeated from (3d) in (34) (cf. the grammatical equivalent configuration in Weak-PCC Catalan in (30)).

- (34) *Strong PCC in Basque*
 *Haiek *ni-ri* **zu** saldu z-ai-da-te.
 they.ERG me-DAT you.ABS sold 2ABS-AUX-1DAT-3ERG
 intended: ‘They have sold you to me.’ (*1DAT > 2ABS)

We propose that the difference between Weak-PCC and Strong-PCC languages coincides with an independently-proposed point of cross-linguistic variation: some dative DPs behave syntactically as 3rd persons, regardless of their actual interpretation (see e.g. Boeckx 2000, Richards 2008, Sigurðsson & Holmberg 2008, also discussed for Icelandic in section 4.2). We thus suggest that dative DPs in Basque do not have all of their φ -features visible from the outside, and that, from the point of view of the φ -probe, Basque datives all behave as 3rd person DPs, regardless of their interpretation. A number of implementations of this claim are possible. For example, dative DPs could be encapsulated under a K(ase)P shell, which is formally 3rd person, and which insulates

¹⁴ Importantly, we do not predict that all non-finite environments give rise to PCC obviation. The crucial prediction is that PCC effects should disappear in the absence of an agreeing probe. Thus, in languages in which arguments in nonfinite clauses are still associated with clitics, PCC effects are predicted to remain. This is the case, for instance, in Spanish (Jon Ander Mendia, p.c.), not illustrated here for reasons of space.

but prevents gluttony in (36b). We predict more generally that for languages (or speakers) with Weak-PCC effects, 1st and 2nd person datives have visible [PART] features, stopping the probe from entering into gluttony in [PART]>[PART] configurations. Strong-PCC effects occur when the higher dative DP does not have visible [PART] features. Sambia and Haya, two Bantu languages discussed by Riedel (2009: ch. 5), obey the Weak PCC, permitting [PART]>[PART] configurations but ruling out 3>[PART]. This is consistent with the fact that indirect objects in these languages lack morphological case marking and our account thus correctly predicts that they should behave like Catalan above since the features of the unmarked indirect objects should be fully accessible to the higher probe. We leave as a topic for future work independent evidence for a distinction between dative indirect objects in Weak- and Strong-PCC variants outside of Basque and Bantu, noting for now that the Strong PCC seems to be the more common variety cross-linguistically, and that datives also frequently do not have accessible 1st and 2nd person features.

3.4.2 Features of the probe. By modulating the specifications of the feature probe, the same basic mechanisms of the gluttony approach laid out in section 3.3 can be used to capture the other types of PCC effects seen in Table 1 above.¹⁵ Universal constraints on the organization of feature geometries independently rule out unattested patterns.

Probe articulations which derive the remaining PCC patterns from Table 1 above are given in (38). As noted above for (23), we assume that if a probe is split into person and number probes, they will be articulated to some degree.¹⁶ (38a) shows a probe structure that gives rise to the Weak PCC, discussed in detail in section 3.3. The Ultra-Strong PCC, which rules out the same combinations as the Weak PCC, but additionally bans 2>1 configurations, follows from the more articulated probe in (38b). Like the probe in (38a), (38b) will result in gluttony in 3>[PART] configurations, but additionally gluttony will also arise in 2>1 configurations (as [*uSPKR*] is matched only by a 1st person DP). The Me-First PCC, which bans all 1st person direct objects, regardless of the features of the higher DP, is the result of the probe in (38c). Due to the absence of the intermediate [*uPART*] segment, this probe results in gluttonous configurations only when the lower DP has

¹⁵ Walkow (2013) derives the difference in the Strong- vs. Ultra-Strong PCC in a licensing-based approach by modulating the degree of articulation of the probe. He locates the probe on a lower head and adopts a Cyclic Agree approach to licensing, as in Béjar & Rezac 2009. Yokoyama (2018) accounts for PCC variation by modulating (i) interpretable features on the DPs themselves and (ii) a hierarchy of unvalued φ -features on the Appl⁰ head which mediates between the two DPs in PCC configurations. Yokoyama appeals not to feature licensing directly, but to a condition on Merge which requires feature valuation to take place for each Merge operation (Wurmbrand 2014); PCC violations occur when the lower DP has valued all of Appl⁰'s unvalued φ -features, preventing a DP from merging in its specifier. Both accounts face the concerns raised in §2 above in being unable to explain the absence of PCC effects in environments which lack agreement or clitics.

¹⁶ Note that an unarticulated π -probe would predict the possibility of a language with object clitics/agreement which lacks PCC effects altogether. Haspelmath (2004) lists several languages which he claims lack PCC effects for combinations of φ -exponents; see however Riedel (2009) on the presence of PCC effects in Haya, Franks (to appear) for Polish, and Van Valin (1977: 12) who notes that a special agreement pattern arises in the Lakhota example given by Haspelmath.

[SPKR]. While the absence of this segment appears surprising, note that it does not contradict the logic of feature geometries insofar as [SPKR] entails [PERS].¹⁷

(38) *PCC probe variation*

- a. $\left[\begin{array}{c} uPERS \\ | \\ uPART \end{array} \right]_{\pi} = \textit{Weak PCC}$
- b. $\left[\begin{array}{c} uPERS \\ | \\ uPART \\ | \\ uSPKR \end{array} \right]_{\pi} = \textit{Ultra-Strong PCC}$
- c. $\left[\begin{array}{c} uPERS \\ | \\ uSPKR \end{array} \right]_{\pi} = \textit{Me-First PCC}$

Importantly, universal restrictions on the arrangement of feature geometries, combined with the system of gluttony proposed here, immediately rule out certain unattested patterns. For example, a hypothetical language that banned only [PART]>3 combinations would require gluttony in such configurations. But given the independently motivated feature geometry in (11), this is impossible. The gluttony account therefore derives the fact that no such PCC pattern exists. Similarly, we correctly predict that a language which rules out [PART]>[PART] must *also* rule out 3>[PART], again due to the nature of feature geometries.

¹⁷ As Amy Rose Deal (p.c.) points out, it is not a priori clear whether or not probes with missing intermediate segments (like (38c)) should be permissible on a feature-geometric approach. If the geometrical arrangement of these features reflects semantic entailments, then we might expect probes to permit missing segments because the segments are not interpreted on probes (unlike on DPs). Alternatively, Yokoyama (2018) proposes that the Me-First PCC is a restriction on ordering of clitics and does not have the same status as the other varieties described above. If this is correct, then the probe in (38c) is rendered unnecessary.

We also predict the possibility of a variant of the Ultra-Strong PCC which would rule out 3>1/2 and 1>2, and (modulo discussion immediately above) a “You-First” PCC, which would rule out all X>2 combinations. Though we are unaware of such systems at this time, their existence is predicted by the possibility of replacing [uSPKR] with [uADDR] in (38b) and (38c).

There is also at least one more possibility: a highly articulated probe as in (i). This probe would provide another means to derive Strong PCC effects, since the presence of both [uSPKR] and [uADDR] nodes would ensure gluttony in [PART]>[PART] combinations:

(i) $\left[\begin{array}{c} uPERS \\ | \\ uPART \\ / \quad \backslash \\ uSPKR \quad uADDR \end{array} \right]_{\pi} = \textit{Strong PCC}$

With this probe, however, the question of what rules out clitic creation becomes more complex. Since both 1st and 2nd person DPs are equally good matches for the probe, Best Match no longer favors one DP over the other, and we might expect Attract Closest to favor the higher DP (see § 3.3). Such a probe structure could be maintained if Best Match could only be satisfied by a decisively better (not equal) match. In light of the independent need for an external 3rd person specification for datives in at least some Strong-PCC languages, it is at present an open question whether (i) is required as a second source for Strong-PCC effects or whether it can be dispensed with. See fn. 20

3.4.3 Person, number, and gender. In addition to variation in the degree to which a given probe may be articulated, we address predictions with respect to variation in the possibilities for the features in split φ -probes. Here we tentatively propose that split φ -probes are subject not only to a universal ordering of person before number (§2.2), but also to an implicational relationship such that if a φ -probe is specified beyond simply probing for φ -features ($u\varphi$), it will necessarily be specified to probe for person features ($u\pi$); if it is split into multiple probes, it will contain a person probe and only second, a number probe ($[u\pi \triangleright u\#]$). Finally, a gender probe will only be added after a number probe ($[u\pi \triangleright u\# \triangleright u\Gamma]$; see Preminger 2012).^{18, 19}

(39) *Probe-specification hierarchy*
 $[u\varphi] \longrightarrow [u\pi] \longrightarrow [u\pi \triangleright u\#] \longrightarrow [u\pi \triangleright u\# \triangleright u\Gamma]$

This assumption, together with our account of PCC effects above, derives the crosslinguistic generalization that the PCC applies only to person features—there is no analogous “Number Case Constraint” effect (Nevins 2011). An illustrative example from Basque is provided in (40). The absolutive direct object is more specified for number than the indirect object, yet no hierarchy effect obtains.

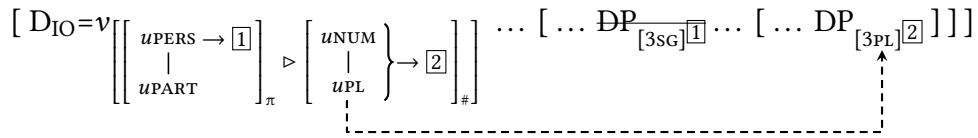
(40) *Basque*
 Zu-k *merkatari-a-ri* **liburu-ak** saldu d-i-zki-o-zu
 you-ERG merchant-DEF.DET.SG-DAT books-DEF.DET.PL.ABS sold 3ABS-AUX-PL-3DAT-2ERG
 ‘You have sold the books to the merchant.’ (✓ 3SG.DAT > 3PL.ABS)

Building on insights by Béjar & Rezac (2003), also discussed in Coon et al. (2017), we attribute the absence of “Number Case Constraint” effects to (i) the claim in (39) that the presence of a $\#$ -probe entails the presence of a π -probe, (ii) that π -probe agrees first, and (iii) that clitic doubling of a DP renders this DP invisible to subsequent probing. Because the indirect object is clitic-doubled after Agree with π , subsequent $\#$ -probing can see the direct object. This is shown in (41). As a consequence, with only one DP in the search space of $\#$, there is no potential for gluttony.

¹⁸ While omnivorous number effects, discussed briefly in section 5 below, might seem to require a lone number probe, these effects generally involve person features as well. For example, omnivorous number in both Georgian (Béjar 2003, Béjar 2011) and Onondaga (Barrie 2005) must crucially make reference to both person and number features.

¹⁹ A reviewer asks how these split and articulated probes come into being. Here we might speculate, following discussion in Preminger 2019, that φ -probes do not come as defaults supplied by UG, but rather emerge during the acquisition process when a learner is presented with sufficient evidence that such a probe must be posited. One could then speculate further that the first probe to be posited by a learner would be a simple unarticulated probe ($u\varphi$). A learner faced with, for example, multiple clitics, or perhaps the need to expone φ -feature not accessed by the first probe, would need to posit additional probes (as in the sequence in (39)). The order of probes might in turn correspond to the order in which φ -features are accessed inside the nominal projection, with person being in an outer layer, number features lower down, and gender features more deeply embedded still (see e.g. Danon 2011, Kalin 2018). For now we acknowledge this as speculative and leave a full understanding of the nature of articulated probes and cross-linguistic variation in probe structure as an outstanding puzzle for future work.

(41) #-Agree in (40)

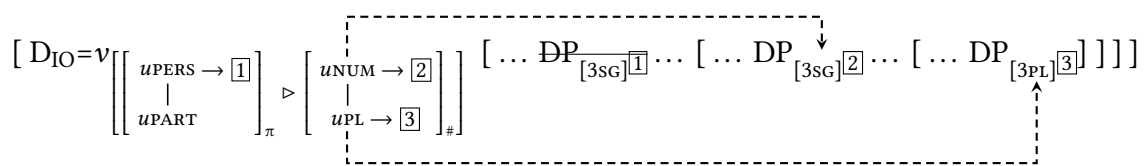


This line of explanation does not attribute the person–number asymmetry in this domain to universal ontological differences between person and number features (contra Nevins 2011; see also fn. 34 below). Furthermore, it predicts that number effects should arise if the higher DP is not removed as an intervener. Evidence from German, discussed in section 4.1 below, suggests that this prediction is borne out.

Turning finally to gender, predictions for gender effects vary depending on where and how gender is represented in the grammar. If we assume gender may be part of the φ -probe complex, ordered $[u\pi \triangleright u\# \triangleright u\Gamma]$, then—following the reasoning and assumptions above—we similarly expect the absence of a Gender Case Constraint in combinations of two clitic-doubled DPs. Indeed, in a recent survey of PCC effects, Stegovec (2019) lists a “Gen-CC” alongside Num-CC as nonexistent. Interestingly, Toosarvandani (2017), Foley & Toosarvandani (2018), and Foley et al. (to appear) discuss what they call a “Gen-CC” in several varieties of Zapotec. Nonetheless, the relevant Zapotec features (ELDER HUMAN > HUMAN > ANIMATE > INANIMATE) involve *animacy*, which Foley & Toosarvandani (2018) state have a plausible connection to person (hence π in our system). See Ritter (2014, to appear) for arguments that animacy contrasts are distinct from gender, and see footnote 4 above on possible treatments of animacy as connected to person.

Finally, a reviewer notes that our account makes predictions about combinations involving more than two φ -triggering DPs. Specifically, on our account, number effects don’t arise in (41) above because the number probe has access to only the lower of the two DPs. If a third lower accessible DP were added, we might expect that a number effect could arise if the third DP were more highly specified for number features than the second DP, as in (42).

(42) *Hypothetical Number Case Constraint effect*



Crucially, in order for this to be tested, we require a configuration in which three DPs are accessible to a *single* probe complex. While Foley & Toosarvandani (2018) propose that Zapotec subject, indirect object, and direct object clitics are all created by a single probe, it is important to note that the hierarchy effects they observe between the subject and primary object DP (i.e. monotransitive direct object and ditransitive indirect object) are *not* present for the lower direct object in a ditransitive, i.e., the lowest of three DPs does not participate in any of these hierarchy effects. Foley & Toosarvandani analyze this as a Principle of Minimal Compliance effect (Richards 1998), but we note that it also receives a straightforward explanation if the pronominal clitic corresponding

3.5 PCC repairs

Finally, we turn to repair strategies for PCC violations. Languages vary as to whether and how PCC violations may be repaired. In the interest of space, we do not review licensing-based approaches to repairs here (see e.g. Béjar & Rezac 2003, Rezac 2010, 2011), but focus on demonstrating how a gluttony account can naturally account for different attested repair strategies.

One type of repair described for PCC effects is to express one of the DPs in the offending configuration as a PP. A French PCC-violating 3>1 configuration is shown in (45a). The intended meaning can instead be expressed in French if the indirect object is realized not as a pronominal clitic, but as a full PP, as in (45b).

- (45) *French PCC and repair* (Anagnostopoulou 2003: 311)
- a. *Paul **me** *lui* présentera.
 Paul CL.1SG CL.3SG will.introduce
 intended: ‘Paul will introduce me to him.’ (*3DAT > 1ACC)
- b. Paul **me** présentera à lui.
 Paul CL.1SG will.introduce to him
 ‘Paul will introduce me to him.’ (✓3DAT > 1ACC)

This repair is consistent with the gluttony account. On the reasonable assumption that a PP is not accessible for the φ -probe, the only available goal in (45b) is the direct object, as shown in (46). Agree with the direct object cliticizes it, and no gluttony arises in (46). A similar strategy for circumventing PCC effects is found in Catalan, Spanish, Kiowa, and Sambia (see Bonet 1991, Anagnostopoulou 2003, Adger & Harbour 2007, Riedel 2009).

- (46) π -Agree in (45b)
- $$\left[\nu \left[\left[\begin{array}{c} u_{\text{PERS}} \\ | \\ u_{\text{PART}} \end{array} \right] \rightarrow \boxed{\mathbb{1}} \right]_{\pi} \triangleright \left[\begin{array}{c} \text{NUM} \\ | \\ \text{PL} \end{array} \right]_{\#} \dots \left[\dots \boxed{\text{PP}} \dots \left[\dots \text{DP}_{[1\text{SG}]} \boxed{\mathbb{1}} \right] \right] \right]$$
-

Another means of avoiding PCC effects, utilized in, e.g., Greek is by not cliticizing the direct object DP (Anagnostopoulou 2003: 312–313). In Greek, accusative pronouns can appear in their strong form, in which case they do not cliticize. (47a) shows that 3>2 configurations are ungrammatical if the 2nd person direct object is cliticized. By contrast, in (47b), the direct object is a strong pronoun, and no PCC violation arises.

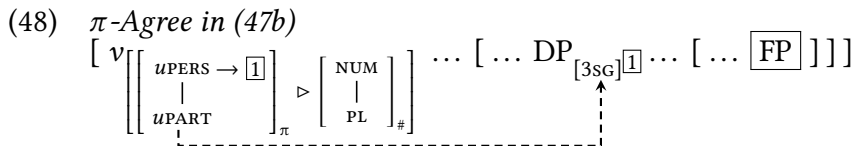
instantiates a failed-Agree account in the sense that it requires a DP (here, a weak object clitic) to enter into Agree with a verbal head, and that PCC effects result from this Agree failing to be established. In this respect, it differs from the perspective taken here.

We furthermore note that Slovenian shows the Reverse PCC for both the Strong and the Weak PCC variety. This indicates that in Slovenian, the φ -features of the dative DP are always visible to the φ -probe (unlike what we argued for Basque in section 3.4.1). This provides an argument that in Slovenian at least the Strong PCC is due to the probe in fn. 17. We thank Amy Rose Deal for discussion.

(47) *Greek PCC and repair* (Anagnostopoulou 2017: 3004, 3006)

- a. *Tha *tu* **se** stilune.
 FUT CL.GEN.3SG.M CL.ACC.2SG send.3PL
 intended: ‘They will send you to him.’ (*3DAT > 2ACC)
- b. Tha *tu* stilune **esena**.
 FUT CL.GEN.3SG.M send.3PL you.ACC
 ‘They will send you to him.’ (✓3DAT > 2ACC)

Because our gluttony attributes PCC violations to conflicting requirements on cliticization, it offers a simple rationale for why such violations should disappear in the absence of cliticization. More specifically, we follow Béjar & Rezac (2003: 54) in treating strong object pronouns as encapsulated inside a functional projection FP, which—like a PP—renders the object’s φ -features invisible to the φ -probe. This invisibility has two effects: (i) it prevents cliticization of the direct object, and (ii) no gluttony arises. This is shown in (48).



A similar account is possible for Kabyle, in which clitic-doubling the *indirect object* is optional, and PCC effects do not arise in the absence of a clitic (Baier 2019).

Both strategies reviewed so far are compatible with the gluttony approach insofar as they involve *less* cliticization. Additional structure on top of a DP shields this DP from a φ -probe and thus prevents the probe from becoming gluttonous.

While some PCC repairs exploit mechanisms that are independently available in the language (e.g., it is generally possible in Greek to not cliticize accusative objects; see Anagnostopoulou 2003: 313), other strategies are possible *only* in order to avoid a hierarchy effect (e.g., in French, realizing an indirect object as a PP without the addition of focus is possible only in PCC configurations; see Rezac 2011: 107–109).²¹ The latter type of repair strategy seems to require a transderivational constraint. For example Rezac (2011) proposes a last-resort interface mechanism \mathfrak{R} , which sanctions additional (PP/FP) structure if otherwise a licensing failure would arise.²² This line of approach can be translated into our gluttony account: Additional structure is sanctioned as a last resort if otherwise a probe would become gluttonous.

Another constructions that is possible only to repair a PCC violation is that in at least some varieties of French, the indirect object can be realized with the locative clitic *y* in repair contexts (Couquaux 1975). Since *y* cliticizes \dot{a} -headed PPs, Rezac (2010) takes this to mean that in these varieties the repaired PP indirect object (e.g. *à lui* in (45b)) can be cliticized. This repair is thus a

²¹ We thank a reviewer for helpful comments on the second class of repairs.

²² Though see Kalin (2014) for a reanalysis of an apparent last resort phenomenon without appeal to \mathfrak{R} .

variant of the one shown in (45b) insofar as the φ -features of the PP are presumably inaccessible, and the y clitic is produced by Agree with a probe other than π .

The final last-resort PCC repair to be discussed here is *absolutive displacement* in Basque (Rezac 2008b, 2010, 2011). For some speakers, a PCC violation may be repaired by promoting an absolutive internal argument to ergative. This repair is only available for verbs which lack a thematic ergative subject. An example is provided in (49). The structure is ungrammatical with an absolutive 2nd person object, as this would involve a DAT>2.ABS configuration (see (36a)). The repair is to advance the object to ergative. This advancement is possible only to repair a PCC violation.

- (49) *Basque absolutive displacement* (Rezac 2008b: 81)
- | | | | | |
|------------|---------|----------|-----------|---------------------------|
| Itxaso-ri | zu-k | /*zu | gustatzen | d-i-o-zu |
| ITXASO-DAT | YOU-ERG | *YOU.ABS | liking | X- \sqrt ED-3.DAT-2.ERG |
- ‘Itxaso likes you.’

Building on Rezac (2008b, 2010, 2011), we assume that this repair involve movement of the absolutive object around the dative, which feeds dependent ergative-case assignment to the absolutive. For the sake of concreteness, we assume that the absolutive moves around π before π probes (e.g., to a local specifier). The domain of π then only contains the dative DP and no gluttony arises (the ergative clitic must then be produced by a different head). The last-resort character of the repair then means that this movement is possible only to prevent a gluttonous probe. See also Rezac 2010 for a similar pattern in Chinook, originally described by Silverstein (1976).

3.6 Interim summary

In sum, we have proposed that hierarchy effects arise due to a system of feature gluttony. The model of Agree in (14) above ensures that multiple Agree relations are established only when two DPs are found in the domain of a single articulated probe, and the lower DP has *more* of the features sought by the probe than the higher DP—exactly inverse configurations. For PCC (as well as other possible effects involving clitics), we propose that once a probe has established more than one Agree relationship, an irresolvable conflict occurs for the movement operation necessary to create clitics. For constructions that contain an articulated φ -probe, this then results in ungrammaticality. Conversely, in nonfinite configurations that lack clitics (and hence a φ -probe), gluttony—and hence PCC effects—does not occur. This account avoids the need for the caveats required for licensing-based approaches, and also predicts variation based on independently-motivated parameters and restrictions. Finally, we have shown that it is consistent with observed repair strategies employed in various languages. Next, we turn to another domain in which hierarchy effects are found: φ -agreement.

4 Gluttony and agreement

In this section, we zoom in on the feature structure of gluttonous probes themselves by looking at hierarchy effects in the domain of morphological agreement. As outlined above, when a probe enters into an Agree relationship with more than one DP, φ -features from each DP are copied to the probe. Here we show how problems can then arise when (i) each value on the probe demands a different Vocabulary Item (VI), and (ii) only a single VI can be inserted. The basis for this investigation is hierarchy effects in German copular constructions in section 4.1 and Icelandic dative–nominative constructions in section 4.2. We discuss possible extensions and repairs in section 5.

4.1 German copular constructions

4.1.1 The pattern. Coon et al. (2017) and Keine et al. (2018) investigate a curious person and number restriction in so-called “assumed-identity” sentences in German. In such sentences, one DP is assigned the role of another DP (e.g., in a play or a game of charades; see Heycock 2012 and Béjar & Kahnemuyipour 2017). Examples are provided in (50a) and (51a). For example, (50a) conveys the meaning that the speaker is assigned the role of some third person individual to impersonate in a play or game; analogously, (51a) conveys that a group people are playing the role of an individual (e.g., multiple people in one costume playing a giant). Coon et al. (2017) and Keine et al. (2018) present experimental evidence indicating that these types of sentences display restrictions akin to hierarchy effects. For example, while the 1>3 configuration in (50a) is grammatical, the 3>1 configuration in (50b) is significantly degraded. In addition, there is a number hierarchy effect such that the PL>SG configuration in (51a) is possible, but the SG>PL configuration in (51b) is not.

(50) <i>Person hierarchy</i>	(51) <i>Number hierarchy</i>
a. <i>Ich bin er.</i> I.NOM am he.NOM 'I am him.' (✓ 1 > 3)	a. <i>Sie sind er.</i> they.NOM are he.NOM 'They are him.' (✓ PL > SG)
b. ?* <i>Er ist ich.</i> he.NOM is I.NOM <i>cf.</i> 'He is me.' (*3 > 1)	b. ?* <i>Er ist die Bäume.</i> he.NOM is the trees.NOM <i>cf.</i> 'He is the trees.' (*SG > PL)

Coon et al.'s (2017) and Keine et al.'s (2018) experimental evidence suggests that the ungrammatical configurations are those in (52). That is, an assumed-identity sentence in German is ungrammatical if it violates one of the two hierarchies. They also provide evidence that the effect is not present in English, and hence that it is not plausibly merely pragmatic in nature.

(52) <i>Hierarchy effects in German copular constructions</i>
a. *3 > [PART]

- b. *SG > PL

The person-hierarchy effect in (52a) bears a clear resemblance to the PCC (in particular the Weak PCC), with the notable exception that the person restriction is accompanied by a number restriction (i.e., (52b)), a restriction that is absent in the PCC (see §3.4.3). Coon et al. (2017) and Keine et al. (2018) set out to unify the person restriction in (52a) with the PCC, adopting a Nevins (2007)-style licensing account. While we will follow their basic analytical intuition that the two effects should be unified, the licensing account that they propose encounters the same obstacles as licensing-based accounts of the PCC (§2.3). The most severe problem is that, like PCC effects in Basque (see (10)), these effects disappear in nonfinite clauses, as in (53), noted as a problem for a licensing account by Keine et al. (2018).

- (53) a. *Er* scheint **ich** zu sein.
 he.NOM seems I.NOM to be
 ‘He seems to be me.’ (✓ 3 > 1)
- b. *Er* scheint **die Bäume** zu sein.
 he.NOM seems the trees.NOM to be
 ‘He seems to be the trees.’ (✓ SG > PL)

As was the case for the PCC, these data are difficult to handle on a licensing account because on such an account the licensing requirement of a DP would need to be suspended if that DP occurs inside a nonfinite clause, by stipulation.

4.1.2 A gluttony account. A gluttony account allows us to understand these facts in a more principled manner. First, we note that what distinguishes the copular constructions in (50)–(51) from regular transitive predicates in German is that both DPs are nominative, hence accessible to the verbal φ -probe, which as a matter of principle only agrees with nominative DPs in German (see e.g. Heycock 2012). It is thus precisely in these copula constructions that the φ -probe could agree with two DPs, giving rise to gluttony. Second, in English, where these hierarchy effects are absent, the second DP is accusative, hence invisible to the φ -probe. In English, then, there is never a risk of gluttony, as the φ -probe is only ever able to see a single DP.

To develop this account in greater detail, we propose that the German π -probe and #-probe located on finite T⁰ are articulated as in (54), again with π probing before #.²³

²³ Note that the particular specification of the π -probe in (54) does not correspond to the available morphological distinctions in verb agreement. In particular, despite the fact that π is specified only up to [uPART], verb agreement morphologically distinguishes between 1st and 2nd person agreement. This follows from the coarseness of feature copying, whereby the entire feature geometry containing the matching segment is copied over to the probe (see (14b) and Béjar & Rezac (2009: 45–46)). In Deal’s (2015) terminology, Agree triggered by any segment of π interacts with (and hence copies back) all person features, while Agree triggered by any segment of # interacts with all number features.

$$(54) \quad T^0 \left[\left[\begin{array}{c} uPERS \\ | \\ uPART \end{array} \right]_{\pi} \triangleright \left[\begin{array}{c} uNUM \\ | \\ uPL \end{array} \right]_{\#} \right]$$

We first look at an ungrammatical person-hierarchy effect in a 3>[PART] configuration, as in (52a), exemplified in (50b), repeated here as (55).

$$(55) \quad ?*Er \quad \text{ist} \quad \text{ich.} \quad (*3 > 1) \\ \text{he.NOM} \quad \text{is} \quad \text{I.NOM}$$

The relevant steps of the derivation are given in (56). As before, π searches first and enters into Agree with the higher 3rd-person DP, which matches [*uPERS*] in π . This Agree copies [PERS] (indicated via $\boxed{1}$) onto the probe, removing [*uPERS*] from π . Because [*uPART*] on π is not matched by the DP and hence not removed, [*uPART*] agrees with the lower predicate nominal, which (being 1st person) bears [PART]. Consequently, the lower DP's entire person-feature hierarchy ($\boxed{2}$) is copied over onto π , and [*uPART*] is removed from π .

(56) π -Agree in (55)

$$\left[T \left[\left[\begin{array}{c} uPERS \rightarrow \boxed{1} \\ | \\ uPART \rightarrow \boxed{2} \end{array} \right]_{\pi} \triangleright \left[\begin{array}{c} uNUM \\ | \\ uPL \end{array} \right]_{\#} \right] \dots \left[DP.NOM_{[3SG]\boxed{1}} \dots \left[DP.NOM_{[1SG]\boxed{2}} \right] \right] \right]$$

As a result of (56), two person hierarchies have been copied over to π , in accordance with the definition of Agree in (14): [PERS] from the higher DP (i.e., $\boxed{1}$), and [PERS [PART [SPKR]]] from the lower DP (i.e., $\boxed{2}$). π has thus acquired a *pair of values*, as shown in (57). (Subsequent Agree by # establishes singular number agreement, not illustrated here for reasons of space.)

(57) *Gluttonous π -probe in (56):*

$$\pi = \left\{ \left[PERS \right]_{\boxed{1}}, \left[\begin{array}{c} PERS \\ | \\ PART \\ | \\ SPKR \end{array} \right]_{\boxed{2}} \right\} \Rightarrow \text{CONFLICT}$$

ist
(3SG)

bin
(1SG)

The problem here, we argue, is not the double Agree itself (just as double Agree in and of itself was not the problem in the clitic-doubling cases), but rather in the morphological realization of the feature structure in (57). The 3rd-person feature [PERS] calls for the vocabulary item (VI) for 3rd-person agreement in German, which is *ist*. By contrast, the 1st-person feature [PERS [PART [SPKR]]] requires the 1st-person agreement marker *bin*. Assuming, as is standard in Distributed Morphology (Halle & Marantz 1993, 1994, Arregi & Nevins 2012), that only a single VI may be inserted into a given head, it is impossible to insert both VIs. Furthermore, because each VI is the best candidate

for one of the two values, neither is a better fit than the other. The result is ineffability in the morphological insertion process: the process of vocabulary insertion is unable to pick a VI for the multi-valued probe in (57). The syntactic structure containing this head thus cannot be morphologically realized, ruling out configurations that give rise to it, such as (50b).

A remaining question is why default agreement cannot be used to morphologically realize the gluttonous probe in (57).²⁴ Default agreement in German is a last resort in the sense that it is possible only in the absence of a nominative DP. In this sense, default agreement is either the realization of an unvalued φ -probe (Preminger 2014) or, alternatively, the realization of a maximally underspecified VI that is inserted only if no other, more specific VIs meet the subset requirement. Neither condition is met in (57): First, the probe contains a value; second, insertion of a maximally underspecified VI is blocked by the availability of a more specific VI (even if this VI is itself blocked by an equally specific VI). For these reasons, default agreement does not constitute a valid realization of a gluttonous probe either.

There is independent evidence for morphological ineffability of the sort in (57). Case-matching effects in ATB movement provides one such piece of evidence. Citko (2005) shows that ATB movement is possible only if the two gaps are associated with the same case form. While Citko's (2005) evidence is drawn primarily from Polish, the effect also holds in German, as shown in (58). In (58a), the ATB-moved element *wen* 'who.ACC' is associated with the object position of the two verbs *hasst* 'hates' and *mag* 'likes'. Both verbs assign accusative case to their objects, and the resulting structure is well-formed. In (58b), on the other hand, the two verbs are *vertraut* 'trusts' and *mag* 'likes'. As before, *mag* assigns accusative case to its object, but crucially *vertraut* assigns dative case. As shown, the resulting structure is ungrammatical, regardless of whether the ATB-moved DP appears in its accusative or dative form (or any other case form).

(58) *Case-mismatch effects in German ATB movement*

- a. Ich weiß [**wen** Jan ___ hasst und Maria ___ mag]
 I know **who.ACC** Jan ___ .ACC hates and Maria ___ .ACC likes
 'I know who Jan hates and Maria likes.'
- b. *Ich weiß [**wen/wem** Jan ___ vertraut und Maria ___ mag]
 I know **who.ACC/who.DAT** Jan ___ .DAT trusts and Maria ___ .ACC likes
 'I know who Jan trusts and Maria likes.'

Assuming a multidominance structure for ATB movement, Citko's (2005) explanation for this restriction is that the ATB-moved DP is assigned two distinct case values in (58b), and these then create a morphological conflict: the morphology fatally cannot determine which VI to insert, leading to ineffability. This line of account clearly parallels our explanation for the ungrammaticality of person-hierarchy violations in German copula constructions, as in (57). A similar line of reasoning is also employed by Kratzer (2009) to account for morphological restrictions on the availability

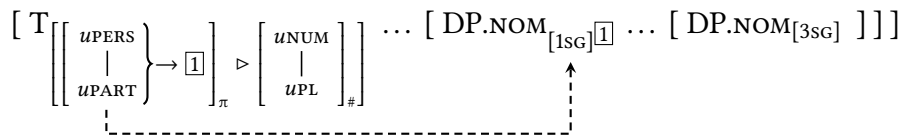
²⁴ We thank a reviewer, Laura Kalin, and Omer Preminger for raising this possibility.

of fake indexicals in German, by Schütze (2003) for free relatives in German, and by Asarina (2011) for Right Node Raising constructions in Russian. We take these clear parallels in other domains to indicate that the crucial ingredient of our account—morphological ineffability due to overvaluation—is justified on independent grounds. Because overvaluation is the result of gluttony, our account assimilates the restriction in copula clauses to this range of other phenomena.²⁵

Let us now compare this state of affairs with configurations that do not display hierarchy effects. (60) provides the schematized structure for π -Agree in a grammatical 1>3 configuration (such as (50a), repeated in (59)). Here, π agrees with the 1st person subject, copying that subject’s person hierarchy over to the probe ($\bar{1}$). Because this hierarchy contains both [PERS] and [PART], both [uPERS] and [uPART] on π are removed, and no second Agree dependency is established.

(59) Ich bin er. (✓ 1 > 3)
 I.NOM am he.NOM

(60) π -Agree in (59)



π then has the resulting specification in (61). Because π only contains a single value, vocabulary insertion is straightforward, yielding the structure in (59). The situation is analogous for π -agreement in grammatical 3>3 and [PART]>[PART] configurations.

(61) *Non-gluttonous π -probe in (60):*

$$\pi = \left\{ \left[\begin{array}{c} PERS \\ | \\ PART \\ | \\ SPKR \end{array} \right] \bar{1} \right\} \implies VI: \textit{bin} (1SG)$$

The same line of account extends to the number hierarchy effect. We saw on the basis of (51) that SG>PL configurations are ungrammatical, whereas PL>SG configurations are grammatical.

²⁵ The assimilation of the German hierarchy effects to the ATB-movement facts in (58) makes an interesting prediction. Citko (2005) observes that case-mismatching effects disappear if the two case forms are *syncretic*, because in this case both case values demand the same VI and no conflict arises. While the judgments are not entirely clear-cut, there is evidence to suggest that this prediction is borne out for German (see also Keine et al. 2018). As (i) shows, 3>1 combinations are much improved in the past tense or the subjunctive, where the form of the verb is syncretic between 1SG and 3SG agreement:

- (i) a. ?Er war ich. b. ?wenn er ich wäre, ...
 he.NOM was.3SG/1SG I.NOM if he.NOM I.NOM were.3SG/1SG
 ‘He was me.’ ‘If he were me, ...’

Similar amelioration of hierarchy effects in copula constructions under syncretism exist in Dutch (den Dikken 2019), Hindi-Urdu (Bhatia & Bhatt 2019), and Brazilian Portuguese (Filipe Hisao Kobayashi, p.c.), see fn. 27. Sigurðsson & Holmberg (2008) observe a similar effect for Icelandic dative–nominative constructions, discussed in section 4.2.

The ungrammatical SG>PL configuration is repeated in (62). This restriction is the result of the specification of the #-probe in (54). In an ungrammatical 3SG>3PL configuration, number agreement is established as in (63) (note that π has already agreed with the higher DP). # first agrees with the higher DP. This DP being singular, only [NUM] is copied over and only [uNUM] is deleted on #. [uPL] remains and agrees with the lower DP, which is plural. This copies [NUM [PL]] from the lower DP ([2]) onto the probe.

(62) ?*Er ist die Bäume. (*SG > PL)
 he.NOM is the trees.NOM

(63) #-Agree in (62)

Because the gluttonous number probe in (63) carries two number values, an irresolvable conflict arises again in the morphological realization of the probe, shown in (64). As in (57), this conflict leads to ineffability, and the resulting structure crashes in the morphology. This rules out (51b).

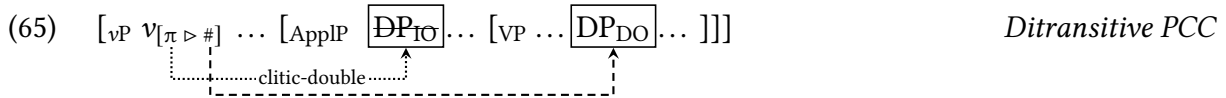
(64) Gluttonous #-probe in (63):

No such gluttony arises in SG>SG, PL>PL, or PL>SG configurations, because here the lower DP is not more specific than the higher DP.

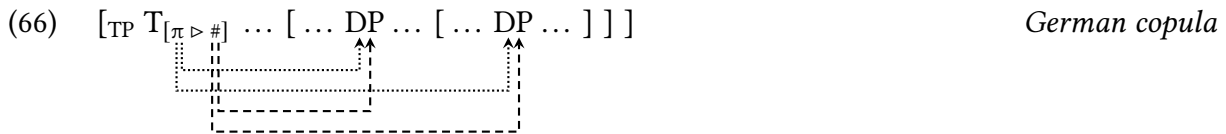
Because gluttony for either π or # leads to ineffability, these structures are well formed only if neither π nor # are gluttonous. Consequently, structures are ungrammatical if they violate either the person hierarchy (52a) or the number hierarchy (52b), as desired. Note further that we predict that the person effect should mirror the Weak-PCC pattern in permitting combinations of 1st and 2nd person arguments. On our account in section 3.4 above, the Strong variant of the PCC arises when the higher DP is a dative argument with inaccessible person features (and thus formally 3rd person). Given that the copular subjects are always nominative, we predict the Weak version here.

4.1.3 The emergence of number hierarchy effects. Our account thus unifies the hierarchy effects in German copula constructions with more familiar PCC effects. But this unification gives rise to an immediate question. We saw that the German evidence displays a number-hierarchy effect. However, no parallel number effect arises for the PCC, which is only for person (see section 3.4.3). This contrast might be taken to cast doubts on the unification just proposed. However, following Coon et al. (2017), we suggest that this difference is in fact predicted. An

important distinction between German and PCC languages is that German lacks clitic doubling. Recall from the discussion in section 3.3 that we assumed—following Anagnostopoulou (2003), Béjar & Rezac (2003), and Preminger (2009), and others—that clitic doubling of a DP removes that DP as an intervener for subsequent Agree operations. In PCC languages, this has the effect that π -Agree with the indirect object removes it as an intervener for subsequent #-Agree. As a result, the #-probe probes past the indirect object, agreeing only with the lower direct object (see (65)). Consequently, there is no possibility for gluttony in #-Agree, and number hierarchy effects are correctly predicted to be absent.



Contrast this to the situation in German. Because German lacks clitic doubling, π -Agree with the higher DP does not remove it as an intervener for subsequent #-Agree. The #-probe thus also agrees with the higher DP, giving rise to gluttony in SG>PL configurations, as in (63). This is schematized in (66).



If this reasoning is on the right track, the crucial contrast with respect to the presence or absence of number hierarchy effects follows from an independently motivated difference, and is hence in line with our unification of the two phenomena.²⁶

4.1.4 Copular hierarchy effects beyond German. We have proposed that the hierarchy effect in German copula constructions arises as a consequence of the fact that in this construction two nominative DPs are in the domain of a single ϕ -probe. This not only accounts for the absence of such an effect in English, it also predicts that analogous effects arise in other languages in which both DPs appear in a case form that is visible to verb agreement. A detailed investigation of this prediction is beyond the scope of this paper, but it seems that these effects arise in other languages as well. A first example is Hindi-Urdu. Bhatia & Bhatt (2019) observe person-hierarchy effects in copula constructions in the language, illustrated in (67).

²⁶ As above, predictions with respect to gender effects depend on the representation of gender in the grammar (see §3.4.3). All else equal, if gender features are arranged in a feature hierarchy like person and number features, then we might expect gender hierarchy effects in copula constructions in languages in which (i) the verb agrees for gender, (ii) the higher DP is not clitic-doubled, and (iii) both nominals are in accessible case forms. Note however that it is not a priori clear whether gender features are hierarchically organized. In fact, if feature hierarchies encode *semantic* entailments, then one might expect at least uninterpretable gender to not form hierarchies. We have not systematically tested gender effects, and leave an assessment of these theoretical options for future research. We thank a reviewer for helpful comments.

- (67) a. [Context: A Bollywood movie where two people are swapping identities]
 aaj-se mē Ramesh hū: (✓1 > 3)
 today-from I Ramesh be.PRS.1SG
 ‘From today onwards, I am Ramesh.’ (i.e. ‘I am taking on the role of a 3rd person.’)
- b. [Context: A Bollywood movie where someone is swapping identities with me]
 *aaj-se Ramesh mē hai/hū: (*3 > 1)
 today-from Ramesh I be.PRS.3SG/be.PRS.1SG
 intended: ‘From today onwards, Ramesh is me.’ [Bhatia & Bhatt 2019: 3]

Moreover, Hindi-Urdu seems to display a number hierarchy effect as well, as illustrated in (68).

- (68) a. is naaTak-mē do log Ram hē (✓PL > SG)
 this play-in two people Ram be.PRS.3PL
 ‘In this play, two people are Ram.’
- b. ??is naaTak-mē Ram do paatr hai (*SG > PL)
 this play-in Ram two characters be.PRS.3SG
 ‘In this play, Ram is two characters.’ [Rajesh Bhatt, p.c.]

A second example is Brazilian Portuguese, which also displays a person hierarchy effect, as shown in (69), due to Filipe Hisao Kobayashi (p.c.).

- (69) a. Eu sou ele (✓1 > 3) b. *Ele é eu (*3 > 1)
 I am he he is I

A third example is Dutch. Den Dikken (2019) observes that Dutch displays a person hierarchy effect in predicational and specificational sentences (he does not investigate assumed-identity sentences). This hierarchy effect is shown in (70). (70a) involves a 3>1 configuration, which is ungrammatical regardless of the form of the verb. By contrast, the 1>3 configuration in (70b) is grammatical with subject agreement.

- (70) a. ze denken/betwifelen dat de schuldige ik {*ben/*is} (*3 > 1)
 they think /doubt that the culprit I {*am/*is}
- b. ze denken/betwifelen dat ik de schuldige {ben/*is} (✓1 > 3)
 they think /doubt that I the culprit {am/*is} [den Dikken 2019: 3]

There is thus converging evidence that the German pattern is by no means isolated or exceptional.²⁷ Just how widespread it is remains to be determined. A reviewer points out to us that Icelandic,

²⁷ A further parallelism to German (see fn. 25) is that these hierarchy effects seem to disappear under syncretism, i.e., the morphological form of the verb is syncretic between agreement with the two DPs. For example, Bhatia & Bhatt (2019) note that the hierarchy effect disappears in the past tense, where the auxiliary *tha:* does not express person distinctions, as shown in (i):

in which predicate DPs appear in nominative case, does not seem to exhibit hierarchy effects, as illustrated in (71) and (72).

- | | |
|--|---|
| <p>(71) Hann er þú
 he.NOM is.1SG/3SG you.SG.NOM
 ‘He is you.’ (✓3 > 2)</p> | <p>(72) Hann er trén
 he.NOM is.1SG/3SG trees.NOM
 ‘He is the trees.’ (✓SG > PL)</p> |
|--|---|

We do not at present have a full account of this disparity between Icelandic on the one hand and the other languages reviewed above on the other, but we would like to offer some suggestions. One factor that is likely to play a role is that Icelandic displays a great deal of inter-speaker and intra-speaker variability in agreement in predicational and specificational copula clauses, as investigated experimentally by Hartmann & Heycock (2017). Because Hartmann & Heycock (2017) do not investigate assumed-identity sentences in Icelandic, it stands to reason in light of this variability that constructions like (71) and (72) ought to be investigated experimentally in a way analogous to German before firm conclusions can be reached. One empirical factor that plausibly plays a role here is that Icelandic in some constructions does not require verbs to agree with nominative DPs that are not in Spec,TP (and in this respect Icelandic differs from German). As noted by Thráinsson (1979: 466), Sigurðsson (1996), and Sigurðsson & Holmberg (2008), a finite verb in a dative–nominative construction (to be discussed further in the next section) may, but in many varieties does not have to, agree with the nominative object. This is shown in (73), where the finite verb appears in its 3SG default agreement form despite the fact that the nominative DP is plural. This seems to also be the case if the nominative DP is 1st or 2nd person, at least for some speakers (Sigurðsson 1996: (74c), (75b)).

- | | |
|--|--|
| <p>(73) að henni líkaði þeir
 that her.DAT liked.3SG they.NOM
 ‘that she liked them’</p> | <p>[Sigurðsson & Holmberg 2008: 260]</p> |
|--|--|

Thus, if Icelandic has the means of shielding a nominative DP that is not in Spec,TP from agreeing with the verb in at least some construction (however this is technically achieved, see Sigurðsson 1996 for a proposal), this might offer an explanation for the absence of hierarchy effects in (71) and (72): If these sentences have a parse in which the lower DP (*þú* and *trén*, respectively) is shielded from agreement with T, these DPs are invisible to the probes, and as a result no gluttony arises. This analysis gives rise to the expectation that the possibility of (71) and (72) should correlate, across speakers, with the option of default agreement in (73). We cannot assess this prediction within the scope of the present paper, but note it as a fruitful avenue for future work.

-
- (i) [Context: A Bollywood movie where I swapped identities with Ramesh]
us din mē Ramesh tha: aur Ramesh mē tha: (✓1 > 3/✓3 > 1)
that day I Ramesh be.PST.M.SG and Ramesh I be.PST.M.SG
‘That day I was Ramesh and Ramesh was me.’ [Bhatia & Bhatt 2019: 6]

The same seems to be the case in Dutch (den Dikken 2019: 3n3) and Brazilian Portuguese (Filipe Hisao Kobayashi, p.c.). We develop an analysis of the rescuing effect of syncretism in section 4.2 below.

4.2 Syncretism and Icelandic dative–nominative constructions

The final phenomenon for which we develop a gluttony account in some detail is the well-known agreement restrictions in Icelandic dative–nominative (DAT–NOM) constructions (see Sigurðsson 1991, 1996, Taraldsen 1995, Holmberg & Hróarsdóttir 2003, Sigurðsson & Holmberg 2008). These bear a clear resemblance to PCC effects, which has been taken to suggest a uniform account (see, e.g., Boeckx 2000, Anagnostopoulou 2003, 2005, Béjar & Rezac 2003, Richards 2008, Walkow 2012).

In what follows, we will focus on a person restriction in these environments. There is also a number restriction, though for the number effect, the pattern is subject to considerable inter-speaker variation, and the relevant generalizations are less well-understood (see Holmberg & Hróarsdóttir 2003, Sigurðsson & Holmberg 2008, Kučerová 2016, Ussery 2017). We will therefore put the number effect aside here in the interest of space, though we see no principled reason why the feature-gluttony account would not be extendable to the number effect as well.²⁸

An example of an Icelandic DAT–NOM construction is given in (74). It is well-established that the dative DP in these constructions occupies the true subject position and that the nominative DP is a true object (see Zaenen et al. 1985). For many speakers, the verb then agrees with the nominative object, as shown in (74), from Sigurðsson (1996: (3)).

- (74) Henni leiddust **strákarnir**.
 her.DAT bored.3PL the.boys.NOM
 ‘She found the boys boring.’ (✓ 3 > 3PL)

But as Sigurðsson (1996), Sigurðsson & Holmberg (2008) and others have shown, agreement with the lower nominative is subject to the restriction in (75).

- (75) *Person restriction* (Sigurðsson & Holmberg 2008: 254)
 In DAT–NOM constructions, only 3rd person NOM may control agreement.

Consequently, verb agreement with 1st and 2nd person nominatives is impossible, as shown in (76), from Sigurðsson & Holmberg (2008: 270) and Sigurðsson (1996: (68b)).

- (76) a. *Henni leiddumst **við**. b. *Henni líkaðir **þú**.
 her.DAT bored.1PL we.NOM her.DAT like.2SG you.SG
Intended: ‘She found us boring.’ *Intended:* ‘She likes you.’
(*3 > 1PL) (*3 > 2SG)

Taraldsen (1995), Sigurðsson (1996), Schütze (1997, 2003), and Sigurðsson & Holmberg (2008) demonstrate that the problem is not the 1st or 2nd person object itself, but rather the fact that the verb agrees with it. Important evidence comes from configurations like (77), in which the DAT–NOM configuration is inside a nonfinite clause. Because nonfinite verbs do not agree in Icelandic, there

²⁸ Possibilities include whether and how number features are represented on the dative DP, and/or variation in the timing of subject movement with respect to ϕ -probing.

is no agreement with the nominative object in (77), and this configuration is judged as minimally “quite acceptable” (Sigurðsson & Holmberg 2008: 271, who cite other potential factors for the “?” judgment); also see Sigurðsson (2004b: 155n14).

- (77) *Non-agreement fix* (Sigurðsson & Holmberg 2008: 271)
 ?Hún vonaðist auðvitað [til að leiðast **við/þið/þeir** ekki mikið].
 she hoped of.course for to find.boring.INF **we/you/they.NOM** not much
 ‘She of course hoped not to find us/you/them very boring.’

The sentence in (77) involves a control structure. In light of evidence that PRO bears dative case in configurations like (77) (see Sigurðsson 1991, 2008), (77) involves a DAT–NOM configuration just like (76). The crucial distinguishing factor is that the infinitival verb in (77) does not agree with the nominative object.

Further evidence supporting (75) comes from configurations like (78), which involve a matrix verb that takes a dative subject and embeds a nonfinite clause, the subject of which bears nominative case. As (78a) demonstrates, it is possible, all else being equal, for the matrix verb to agree with the embedded subject. This is not possible, however, if the embedded subject is 1st or 2nd person, and verb agreement would therefore involve person agreement. In (78b), the agreeing form *þyki* is ruled out. Significantly, agreement is optional in these constructions. The verb may also agree with the embedded clause as a whole instead of the nominative DP (the form *þykir* in (78b)). In this case, the structure is grammatical regardless of the person of the nominative DP (Sigurðsson 1996, Schütze 1997, Hrafnbjargarson 2002, Sigurðsson & Holmberg 2008).²⁹

- (78) *Non-agreement fix* (Hrafnbjargarson 2002: 2)
- a. Mér **þykja þau** góð í fótbolta.
 me.DAT think.3PL they.NOM good in football
 ‘I think they are good at football.’
- b. Ykkur **þykir** / ***þyki** **ég** góður í fótbolta.
 you.PL.DAT think.3SG / *think.1SG I.NOM good in football
 ‘You think I am good at football.’

The generalization that the person restriction disappears in the absence of agreement is strikingly parallel to the situation we observed for PCC effects in section 2.3 and German copula clauses in section 4.1. It therefore seems natural to extend the gluttony account to the Icelandic restriction. We propose that the Icelandic π -probe is articulated as in (79).

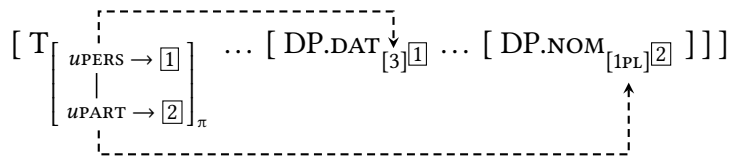
²⁹ In addition, Sigurðsson (1996) shows that at least some speakers allow 1st and 2nd person nominative objects if the verb shows default agreement, which Sigurðsson (1996) proposes involves an inherent nominative invisible to verb agreement. The judgments of these speakers are of course compatible with the person restriction in (75).

$$(79) \quad \left[\begin{array}{c} u\text{PERS} \\ | \\ u\text{PART} \end{array} \right]_{\pi}$$

We furthermore follow recent proposals that dative DPs in Icelandic behave externally as 3rd person DPs (Chomsky 2000: 128, 149n90, Boeckx 2000, Richards 2008, Sigurðsson & Holmberg 2008; also see Atlamaz & Baker 2018 for another proposal that Icelandic datives are featurally deficient from the outside)—regardless of their internal person features—paralleling a similar behavior we observed for Basque dative DPs above.

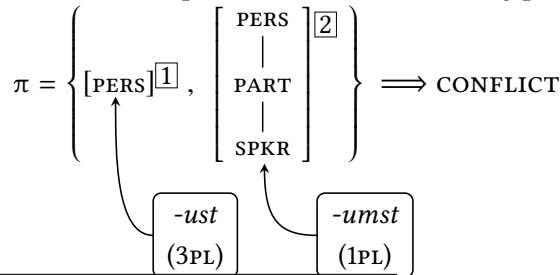
A schematic π -Agree structure for (76a) is provided in (80). π first agrees with the dative subject, which bears an external 3rd person specification, hence [PERS]. This person feature is copied onto π , deleting [uPERS]. Because [uPART] on π remains and is matched by the 1st-person object, π agrees with the 1st person nominative object, resulting in a gluttonous probe.³⁰

(80) π -Agree in (76a)



The situation that results from (80) is analogous to what we saw for German in section 4.1. Because π has acquired two different person values (3rd person and 1st person, respectively), the two values impose conflicting demands on morphological realization, leading to ineffability and hence ungrammaticality. This is shown in (81). As with German above, subsequent probing by # results in plural number agreement, not shown in (81) for space reasons.

(81) *Gluttonous π -probe in (80) (in context of plural number agreement):*



³⁰ As a reviewer notes, because it is the dative DP that moves to Spec,TP in Icelandic DAT–NOM constructions like (80), our account requires that person agreement does not require a Spec–Head relation, contra Baker’s (2008) SCOPA (see also Preminger 2011: 920–921 for an argument against SCOPA from Basque). The reviewer also observes that this assumption is in fact independently motivated for Icelandic by the existence of what Sigurðsson (2004a, 2006) calls ‘Reverse Predicate Agreement’, such as (i), where Spec,TP is occupied by the expletive subject *það* and the verb agrees with *við* ‘us’.

- (i) Það erum bara við
 it are.1PL only we.NOM
 ‘It’s only us.’

[Sigurðsson 2006: 223]

Sigurðsson (1996, 2004a, 2006) and Sigurðsson & Holmberg (2008) suggest that *það* lacks ϕ -features. If so, then the ϕ -probe in (i) agrees only with *við* ‘us’, and hence no gluttony arises.

The core idea that the what underlies the ungrammaticality of (76) is a morphological conflict that results from attempting to agree with both DPs was first proposed by Schütze (2003), though he leaves open what the syntactic derivation that results in this conflict is. Our gluttony proposal can thus be seen as providing the syntactic underpinning for Schütze’s (2003) proposal. Other proposals that invoke a morphological conflict are proposed by Sigurðsson & Holmberg (2008) and Atlamaz & Baker (2018), but the specifics of their proposals differ significantly from our account.³¹

Recall that the restriction on the person of the nominative DP disappears if no verb agrees with it (i.e., if it is inside a nonfinite clause, see (78) and (80)). This follows naturally from our account. Without an agreeing probe, there is no gluttony, and as a result, the morphological-realization problem does not arise in the first place. The structure is therefore grammatical regardless of the person of the nominative DP.

A second important configuration that leads to obviation of the person restriction is the following: In environments where agreement with a 1st or 2nd person DP is syncretic with 3rd person agreement, the restriction is lifted for many speakers (Sigurðsson 1991, 1996, Taraldsen 1995, Schütze 2003, Thráinsson 2007, Sigurðsson & Holmberg 2008). An example is provided in (82). In (82a), the nominative DP is *þið* ‘you.PL’ and the embedding verb is *virtust* ‘seems’. It is an idiosyncratic fact about the conjugation paradigm of this verb that the 2PL form is syncretic with the 3PL form. In this case, the 2PL nominative DP is grammatical. A minimally different configuration is provided in (82b), where the nominative DP is *við* ‘we’. Importantly, the 1PL form of the verb is not syncretic with 3rd person agreement, and the structure is ungrammatical.

(82) *Syncretism fix* (Sigurðsson & Holmberg 2008: 270)

- a. Henni virtust þið eitthvað einkennilegir.
 her.DAT seemed.2PL/3PL you.PL.NOM somewhat strange
 ‘You seemed somewhat strange to her.’
- b. *Henni virtumst við eitthvað einkennilegir.
 her.DAT seemed.1PL we.NOM somewhat strange

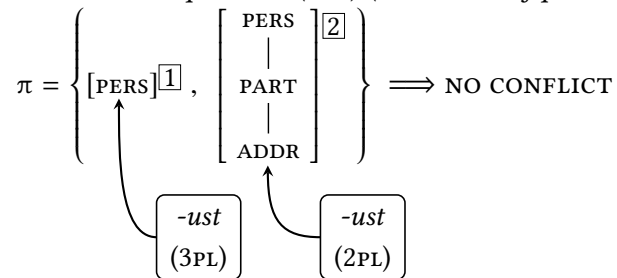
Note that grammaticality is improved for all configurations that display the relevant syncretism, including simple transitive clauses and also including both main verbs and auxiliaries (Sigurðsson 1996, Schütze 2003, Thráinsson 2007, Sigurðsson & Holmberg 2008, Atlamaz & Baker 2018).

Because our account does not attribute the ungrammaticality of 1st/2nd-person nominative objects to gluttony itself, but rather its morphological aftermath, the rescuing effect of syncretism receives a principled account. Syntactically, (82a) results in a gluttonous π -probe, which acquires both a 3rd person value and a 2nd person value. In combination with plural agreement by the

³¹ Atlamaz & Baker’s (2018) account invokes Multiple Agree in the traditional sense, whereby a probe agrees with all accessible DPs in its domain (see also Sigurðsson & Holmberg 2008, who propose that the Person probe agrees with both the dative and the nominative DP). As a consequence, their account does not straightforwardly extend to hierarchy effects, as Multiple Agree arises regardless of whether the two DPs stand in a 1>3 or a 3>1 configuration. Our gluttony account derives the fact that 1>3 and 3>1 configurations are not symmetrical.

number probe, the person probe and its morphological realization are schematized in (83). Due to the syncretism pattern of the verb, *both* 3rd-person and 2nd-person agreement call for the vocabulary item *-ust*. This has the important consequence that there is no conflict between the morphological demands of each value. It is therefore possible to simultaneously satisfy both by inserting the vocabulary item *-ust*.

(83) *Gluttonous π -probe in (82a) (in context of plural number agreement):*



Citko (2005) demonstrates that analogous obviation effects under syncretism arises in ATB extraction (see (58)); Kratzer (2009) shows the same for fake indexicals in German; Asarina (2011) observes an analogous pattern for Russian Right Node Raising; also see fn. 25 and 27 above for parallel evidence from German and other languages. This is of course consistent with our claim in section 4.1 that what underlies hierarchy effects is the same general restriction that also governs the case restriction in ATB movement configurations. Under a licensing approach to hierarchy effects, it is unclear why idiosyncracies of syncretism should have an effect on the grammaticality of the output.

Note finally that our proposal characterizes probes as gluttonous that have agreed with more than one DP, but not the other way around. That is, it is permissible for one DP to agree with multiple probes. A relevant configuration from Icelandic, suggested by a reviewer, is given in (84).

- (84) **Peir** mundu vera **taldir** vera **sagðir** hafa verið
they.NOM.M.PL would be believed.NOM.M.PL be said.NOM.M.PL have been
kosnir
elected.NOM.M.PL
‘They would be believed to be said to have been elected.’ [Sigurðsson 2004a: 86]

In (84), multiple probes agree with the same DP. Because none of these probes agrees with multiple DPs, no gluttony arises.

To summarize, gluttony—and hence hierarchy effects—are found in Icelandic exactly in those environments in which (i) two φ -accessible DPs are located in the domain of a single φ -probe and (ii) the lower DP is more specified than the higher one. In Icelandic, this is the case only in configurations in which the lower DP is nominative. In NOM-ACC or NOM-DAT constructions, the lower DP maximally bears a [PERS] feature, and it is hence never more specific than the higher DP. As a result, no gluttony can arise in such configurations. Combined with the gluttony system, the

assumption that dative DPs have visible 3rd person features not only yields a unified account of (i) the person effect, (ii) the non-agreement fix, and (iii) the syncretism fix, but also (iv) the fact that these restrictions are limited to DAT–NOM constructions, in which the lower DP is in an accessible case form.

5 Conclusion and outlook

5.1 Summary

In this paper, we have proposed a new approach to hierarchy effects. The central difference between this approach and more traditional accounts is that we do not attribute hierarchy effects to failed Agree or a failure of nominal licensing. Rather, we suggested that hierarchy effects are due to *too much* Agree in the sense that a single probe agrees with more than one DP. Such feature-gluttony configurations are not syntactically ill-formed as such, but they may give rise to irresolvable conflicts for subsequent operations, be it syntactic (in the case of clitic-doubling; §3) or morphological (in the case of agreement; §4).

The crucial motivation for this departure from nominal licensing came from the observation that hierarchy effects commonly disappear in environments in which the clitic-doubling or agreement associated with them does not arise. This is most directly the case in nonfinite clauses that lack clitics or agreement, and we have seen evidence that PCC effects as well as the agreement restrictions in German and Icelandic disappear in such environments. We argued that such effects present difficulties for a licensing-based approach: If hierarchy effects are due to licensing failures resulting from insufficient Agree, then having less Agree should not rectify these failures. While it is possible to complicate the definition of the licensing condition in a way that exempts DPs from the licensing requirement in precisely such cases—as, e.g., Preminger (2011, 2019) does—such complications remain stipulated on a licensing account and hence do not offer an explanation for why obviation should occur in these configurations.

We suggested that a more principled explanation of these obviation effects becomes available if the burden of the account is shifted away from nominal licensing and towards verbal probes. If hierarchy effects are caused by gluttonous probes, it follows immediately that hierarchy effects should disappear in structures that do not contain gluttonous probes. We are then in a position to dispense with the added caveats of the revised licensing condition, while still accounting for the range of facts that motivated these caveats. Furthermore, to the extent that the gluttony account is on the right track, no appeal to licensing requirements of particular features is necessary anymore in at least this domain.

Because our account attributes ungrammaticality not to gluttony itself, but to its aftermath (cliticization or the realization of morphological agreement), it predicts that such effects are limited to configurations with overt agreement or clitics. We saw that this is the case for the PCC, but it also generalizes to different constructions within a language. For example, a reviewer notes that

Icelandic does not show PCC effects in ditransitives despite exhibiting hierarchy effects in other corners of its grammars; the same is true for German. This contrast follows straightforwardly on our account. Because objects of ditransitives are not associated with agreement or clitics in either German or Icelandic, no hierarchy effect could arise. The generalization that hierarchy effects only arise with agreement or clitics is explicitly argued for by Preminger (2019); our account offers a way to derive it.³²

A gluttony-based account furthermore makes principled predictions about the kinds of structures that give rise to hierarchy effects. First, because gluttony by definition only arises if a probe agrees with more than one DP, hierarchy effects are expected to be limited to such environments. Second, a probe must be articulated (i.e., “picky”) enough to not be completely satisfied by the first DP that it encounters. Third, the lower DP must have more features than the higher DP in order to be able to value features of the probe that have not been valued by Agree with the higher DP. This last property is of course the defining characteristic of hierarchy effects.

5.2 Possible extensions

In closing this paper, we will briefly line out possible extensions of our system. While we have focused primarily on gluttony which arises in particular corners of certain grammars (ditransitives, copulas, and DAT-NOM constructions), for many languages of the world, hierarchy effects appear to play a more widespread role in the system. Our account predicts that the factors which contribute to gluttony (i.e. two accessible DPs in the domain of a single agreeing probe), might be especially prevalent in languages which (i) are agreement rich and (ii) for which the *lower* of two DPs is typically in a case form accessible to the relevant agreeing probe—as in languages which lack morphological case, or in ergative-absolutive languages in which the ergative has at least [PERS] visible and the lower absolutive is accessible, on par with Icelandic DAT-NOM constructions.

Hierarchy-based restrictions in transitives are attested in many languages which fit this description (see e.g. Klaiman 1992, Aissen 1999, Zúñiga 2006, Bliss et al. to appear).³³ Languages of the Algonquian family, for example, require special inverse verb forms in hierarchy-violating transitives. In Lummi (Salish), transitive sentences with 3rd person subjects and participant objects are ungrammatical (Jelinek & Demers 1983); varieties of Neo-Aramaic ban the same configurations just in the perfective aspect (Kalin & van Urk 2015). In Chukchi (Chukotko-Kamchatkan), certain inverse configurations are similarly banned in transitives, requiring instead a “spurious antipassive” (Bobaljik & Branigan 2006). In keeping with our system, Algonquian languages are caseless and

³² See Preminger (2019) for discussion of combinations of weak object pronouns in English; though hierarchy effects are sometimes reported for weak pronouns in English ditransitives (e.g., *They showed him her* vs. *They showed him me*; see Bonet 1991 and Haspelmath 2004), these effects are described as subtle, and speakers we have consulted do not detect a reliable person-based contrast. This suggests that they should not be unified with PCC effects, a conclusion also reached by Preminger (2019).

³³ Klaiman (1992) explicitly discusses the prevalence of inverse systems in head-marking languages; namely, languages which mark grammatical relations via morphological agreement and lack nominal case. He also lists ergativity as a factor contributing to inverse systems.

head-marking, Lummi is a head-marking ergative language, and Chukchi has ergative case marking and unmarked absolutes. Neo-Aramaic is similarly caseless and head-marking, and Kalin & van Urk (2015) argue specifically that what sets the perfective apart from the imperfective (which lacks the hierarchy effect) is that in the perfective a probe on T^0 is responsible for *both* subject and object φ -indexing morphemes. Rezac (2008a) notes that person effects akin to the one described for Icelandic in section 4.2 are found with oblique subjects (not necessarily dative) in Finnish, Chinook, Tamil, Choctaw, Gujarati, and Breton.

Some languages may have systematic strategies to resolve widespread hierarchies. As we have emphasized throughout, our account does attribute ungrammaticality to gluttonous probes as such. Rather, gluttonous probes can give rise to irresolvably conflicting requirements for subsequent operations, which in turn leads to ineffability. We already saw on the basis of German and Icelandic that conflicts in the domain of gluttonous agreement do not arise in cases of syncretism in which both values on the probe demand the same vocabulary item. In addition, the system lends itself to other strategies for dealing with gluttonous probes, with distinct empirical signatures. In what follows, we briefly outline three such strategies predicted to lead to a converging structure, even in the presence of a gluttonous probe triggering agreement: (i) morphological fission, (ii) portmanteau forms, and (iii) the absence of an overt Vocabulary Item.

The first morphological strategy for dealing with a gluttonous probe is through morphological fission. Fission rules are a standard type of operation in Distributed Morphology that splits a single head into two heads (Noyer 1992, Halle 1997). Crucially, fission applies after syntax, but before vocabulary insertion. The effect of fission is schematized in (85). Here, a gluttonous probe π on T with the φ -values $\{\varphi_1, \varphi_2\}$ and is split into two syntactic heads T' and T'' , each with only one feature value. Because vocabulary insertion targets heads, vocabulary insertion can apply to each without running into the competition problem.

$$(85) \text{ Rescue by fission}$$

$$\left[\{\varphi_1, \varphi_2\}_\pi \right]_T \implies \left[\varphi_1 \right]_{T'} \quad \left[\varphi_2 \right]_{T''}$$

The result of such a fission rule would be agglutinative agreement with two DPs that is established by a single probe. Deal (2015) develops an account for complementizer agreement in Nez Perce in which a single articulated probe may show agreement with two DPs when the lower DP matches more of the probe's features. The features of each DP are realized as separate morphemes, compatible with morphological fission (though Deal's analysis does not involve fission).

A second possible rescue strategy for gluttonous probes is portmanteau morphology. In this case, a special vocabulary item is inserted that realizes the features of both agreed-with DPs (see e.g. Heath 1991, 1998, Woolford 2016, Georgi 2013). Because this vocabulary item simultaneously realizes the features of both DPs, it is more specific than any vocabulary item that only realizes one of the two values. As a result, no conflict arises, and ineffability is averted. See for example

Oxford (to appear) for a recent proposal governing the distribution of portmanteau morphemes in Algonquian languages; Oxford proposes that portmanteau forms appear only in environments in which an articulated probe agrees with both the subject and the object.

A third conceivable rescue strategy for gluttonous probes involves cases in which one of the two feature values does not correspond to any vocabulary item (as opposed to a phonologically null VI). In the context of the gluttony account, this strategy can be used to analyze omnivorous number-agreement systems (Nevins 2011). Omnivorous agreement is characterized by a particular agreement morpheme indexing features of a more highly-ranked DP, regardless of that DP's position. For example, in the Kichean Agent Focus construction, in 3>3 configurations, the verb bears plural agreement (-e) if the subject, object or both are plural, and it is not overtly marked for number if both are singular (Preminger 2014, see (86)).

(86) *Verbal number agreement in Kichean Agent Focus 3>3 configurations* (Preminger 2014: 21)

subject	object		verb agreement
SG	SG	→	∅
SG	PL	→	-e
PL	SG	→	-e
PL	PL	→	-e

To reach a plural object across a singular subject, the #-probe in Kichean must be specified as [*u*NUM [*u*PL]]. SG>PL configurations then result in gluttony because # agrees with both the singular subject and the plural object.³⁴ One line of analysis compatible with our account is that singular agreement in Kichean is not associated with a VI at all. That is, the only VI available to expone number agreement is -e, which realizes plural. '∅' in (86) is the absence of a VI. If so, then the gluttonous probe in a SG>PL configuration does not result in ineffability: Because only the plural value is associated with a VI, no competition between VIs arises. The descriptive result is an omnivorous agreement pattern. All else equal, we might then expect singular agreement to correspond to the absence of overt number marking across all omnivorous number systems. As far as we know, this is indeed the case (e.g., Georgian [Béjar 2011] and Ch'ol [Vázquez Álvarez 2011]).

In sum, because ineffability does not arise from gluttony itself, but rather from its aftermath, gluttonous probes can be repaired in a variety of ways, including syncretism, fission, portmanteau morphology, and the absence of a VI. In languages with more systemic gluttony—as in agreement-rich systems in which both subject and object DPs are accessible to a single probe—we might expect to find widespread use of one or more of these strategies. We leave a comprehensive exploration of such strategies within the current proposal for the future, but we hope that the scope of our proposal ultimately extends beyond the hierarchy effects discussed here.

³⁴ Another possibility for explaining omnivorous number would be the absence of [+SG] specifications on non-plural DPs. If in a given language, non-plural DPs are simply unspecified for number features, then no gluttony will occur in configurations in which a probe agrees with a lower plural DP across a higher non-plural DP. This echoes the account in Nevins 2011, in which number features are privative, but allows for cross-linguistic variation. See for example Corbett (2000) and Wiltschko (2008) on “number-neutral” or “general number” systems.

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