

Argumental null subjects in Old Icelandic

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Abstract: This work presents a study of argumental null subjects in Old Icelandic (OIc) that leads to a partly new picture of human impersonals and 3rd person referential pro in the language and of their theoretical consequence. OIc human impersonals have the profile of generic impersonal pronouns crosslinguistically, with formal counterparts in the generic pro of Modern Icelandic and Finnish, but different distribution and usage that contribute to understanding this impersonal class. Of particular interest are apparently nongeneric and specific uses, both of which affect the study of referential pro. OIc referential pro has been a focus of theoretical interest because of its unusual rarity and contested formal restrictions. These findings are confirmed globally, but a different picture emerges on a more fine-grained study relativised to antecedent and dependency types. Global rarity is punctuated by islands where pro is either the rule or on par with overt pronouns. Some are theoretically distinct subsystems of restricted pro-drop such as pro for reference to weapons, while others like quantifier-bound pro contribute to understanding the major pro-drop system of the language. Characteristics of the major system – preference of quantifiers for pro, availability of low-topicality antecedents, limits on nonexhaustive antecedence, and role of cohesion – suggest that it fits best in the "cohesive" pro-drop type emerging from work on 3rd person pro in Hebrew and Finnish. Throughout emphasis is placed on issues that restrictions on null subjects raise for theories of conventionalisation, such as parameter theory, which are discussed in synchronic and diachronic perspectives.

Keywords: Old Icelandic, pro, human impersonals, parameters

1 Introduction

The system of argumental null subjects in Old Icelandic (OIc) consists of referential pro-drop (1), human impersonals roughly meaning 'one' or H-impersonals (2), and idiomatically interpreted quasiarguments in lexical or L-impersonals (3).¹

- (1a) ... ok at skilnaði veitti Ólafur konúgr jarli góðar gjafar, ok skildust __ hinir kærastu vinir, ok héldu því meðan **þeir** lifðu báðir. "and at the parting king Olaf gave the earl good gifts, and __ [=they] parted the dearest of friends, and held to this while **they** both lived." (Hkr; Nygaard 1894: 6)

Referential pro, animate

¹ In OIc examples, meaning and anaphoric dependencies are often the only important elements, and in those cases glossing is eschewed in favour of close translations, where relevant silent subjects are indicated by __, other anaphora are in bold, antecedents are underlined, and italics are used for other elements of interest; phi-features are indicated when needed through M masculine, F feminine, N neuter, SG singular, PL plural, 1/2/3 for person. Material in parentheses translates OIc text not cited, while brackets surround context, clarifications, or comments. Sources and abbreviations are found in the Appendix; the focus is prose of the "classical saga style", targeted by the studies of Nygaard (1894, 1906), Heusler (1950), Hansen (1952), and here chiefly drawn from a corpus of nine Sagas of Icelanders and narrative works of Snorri Sturluson.

- (1b) Hann hafði rekit öxina í gaflaðit svá fast at gengit hafði __ allt upp á miðjan fetann, ok var ekki *dignuð* "He had driven the axe.F into the gable-end so fast that __ [=it] had gone in all the way up to the mid-blade, and was not *softened.F*" (Nj)

Referential pro, weapon

- (2) Þat er jafnan satt, sem mælt er, at eigi veit __, fyrr en svarat er, ok svá mun hér fara. Skal __ nú hafa ráð þín um þetta. "That is always true, as is said, that __ [=one] does not know, before there is an answer, and so it will be here. __ [=one, I] will now accept your advice about this." (Eir)

H-impersonal

- (3) En er mjök leið __ at því, er blótit skyldi vera ... "And when __ drew.3SG much to that [=it drew to close the point] when there should be a sacrifice ..." (Hkr)

L-impersonal

These types of null subjects are sometimes difficult to tell apart, and the resulting analytical ambiguities have important theoretical consequences. This may be brought out through example (4), which also offers a preview of the issues of this study.

- (4) [When Asgerd comes to bed, her husband tells her not to sleep there. Asgerd says:]
Hví hefir svá skjótt skipazk __, eða hvat berr til þess? "Why __ have.2SG/has.3SG so quickly changed, and what is the reason for this?" (Gisl)

The verb *skipast* is found with three types of subject on a suitable meaning (C-V, ONP). One is humans. The null subject may then be a 2SG pro, *Why have you changed so quickly?* That makes a significant contribution to the miniscule corpus of 2SG pros in OIc, absent or isolated in the texts studied here, and only 0,6% or 10 of 5235 2SG subjects across IcePaHC in Kinn et al. (2016: 49). However, there proves to be an alternative: an H-impersonal analysis on a so-called (pseudo)specific use familiar for other human impersonals, and robust in OIc for both the addressee as here and the speaker in (2). Alternatively, *skipast* is used with a concrete inanimate subject like *þinn hugr* 'your mind, heart'. On this analysis, its null subject is a pro referring to such an inferred antecedent, *Why has your heart changed so quickly?* However, there is then a violation of one of the most distinctive and debated generalisations about OIc referential pro, SG in (5), because by SG pro needs an overt antecedent in (4).

- (5) SG: Referential pro without an exhaustive overt antecedent is limited to topic-drop environments (root clauses with an empty left edge).

Lastly, *skipast* is found without an overt subject in reference to the salient situation, giving *Why have things changed so quickly?* This looks like an L-impersonal. However, there turns out to be a type of pro that is referential to abstracts like situations, but whose properties differ from those of other referential pro in OIc, comparably to the way in French *ce* 'it, that' differs from pronouns *il* 'he, it'. This "*ce*" pro freely violates SG, but conclusions cannot be drawn from it about other referential pro, much as *ce* and *il* have different morphology, syntax and semantics.

The analytical choices for this example bear on central questions in work on OIc null subjects, and this situation is common. The aims of this work are to clarify the differences and overlaps between different silent subjects, offer a more fine-grained picture than so far of H-impersonals and referential pro, and draw theoretical consequences.

After a survey of L-impersonals in section 2, section 3 offers a study of H-impersonals in OIc, grounded in similarities and differences with Modern Icelandic (NIc) and crosslinguistic

findings about human impersonals. Of particular interest is the nature of the human impersonal *pro* as a generic impersonal like *one* not restricted to finite subjects, limits on its distribution and the tools needed to capture them, and consequences for identifying referential *pro*.

Section 4 undertakes a study of 3rd person referential *pro*, with surprising results. Work on 3rd person *pro* in OIc has revealed and drawn major theoretical conclusions from two chief oddities with respect to other *pro*-drop systems: optionality with very low frequency, below 1 *pro* : 10 overt pronouns (Sigurðsson 1993, Rosenkvist 2009, Walkden 2014, Kinn et al. 2016), and adherence to SG in (5) that has been contested (Sigurðsson 1993, Kinn et al. 2016). Global infrequency is accentuated once interference from H-impersonals is taken into account. However, it turns out to be punctuated by islands where *pro* is regular enough to be comparable to classical *pro*, including on reference to weapons in (1b) or when bound by a quantifier. These islands are not theoretically equipollent. Some reflect distinct subsystems of *pro*-drop like weapon *pro*, some like quantifier-bound *pro* help understand the major *pro*-drop system of the language. Solid counterexamples to SG lie in the distinct subsystems so identified, but SG nevertheless in need of empirical reevaluation and new theory. Other findings add further details about the major system and revise current descriptions, including availability for low-topicality antecedents, a sharp animate-inanimate asymmetry, a possible role for cohesion, and cooccurrence with putative object drop. The properties of the major *pro*-drop system mostly have good parallels elsewhere once the known range of variation on systems like classical *pro* is considered, but overall they hint in the direction of "cohesive" *pro*-drop emerging from studies of Hebrew (Ariel 1990, Gutman 2004) and Finnish (Brattico 2016, Holmberg 2016).

Across all types of null subjects arise the issues of conventionalisation and variation, illustrated by restricted subsystems of *pro*-drop. Their synchronic consequences for linguistic theory and their impact on the diachronic picture are the subject of section 5.

2 L-impersonals

In OIc as in NIc, the subject of weather verbs is silent. NIc and OIc also have other predicates where an argument seems to be overtly missing, such as the external argument of *reka*, usually 'NOM drives ACC', when used as 'ACC drifts' in (9). Both weather-verbs and these predicates have been called impersonals, here L-impersonals. The syntax of L-impersonals is well studied in NIc (H.A. Sigurðsson 1992, 2006, 2011b, Schaefer 2008: 7.4, Wood 2016) and a focus description in OIc (Nygaard 1894, 1906: ch. 1, Heusler 1950: §460-1, Hansen 1952).

- (9) Rak __ pá út skipit á fjorðinn. En er þeir Þórólfr
drove.3SG __ then out the.ship.ACC to the.firth. and when they Thorolf
urðu varir við er skipit rak __, ...
became aware with when the.ship.ACC drove.3SG __
"Then *the ship* drifted out to the firth. And when Thorolf and company became aware that
the ship drifted, ..." (Eg)

NIc weather verbs are usually analysed with a silent quasiargument as external argument. This analysis has been extended to L-impersonals like (9) on the view that a nominative quasiargument is needed to explain the accusative case (Haider 2001, Platzack 2006, Schäfer 2008: 7.4, Wood 2016). It is reasonably extended to all L-impersonals based on transitive verbs, and even to L-impersonals based on unaccusative verbs like (3), where the quasiargument may

satisfy the EPP (cf. H.A. Sigurðsson 1992: 5.3, 6.3.1). Evidence that there is a uniform null subject for all L-impersonals comes from German, where counterparts of all these types have quasiargumental *es* 'it' (Haider 2001; distinct from expletive *es*, Vikner 1995: ch. 7).

In NIc, the null subject of L-impersonals is easily distinguishable from that of H-impersonals and from topic drop *pro* because it is invisible to A-movement: object DPs raise to the Spec,T subject position under the same condition as in passives/unaccusatives, obligatorily if definite (H.A. Sigurðsson 1992: 5.3.1, 6.1.5, 6.1.2.3, 2006, 2011b). This invisibility of the quasiargument has been explained by its phi-deficiency (Schäfer 2012) or cliticness (Wood 2016) (for alternatives, H.A. Sigurðsson op.cit.). In OIc, subject positions are too free to apply this test. Definite subjects may appear to the right of nonfinite verbs without dislocation, while the expected subject position to the right of C may be filled by other elements even in the presence of a lower subject, including objects (Faarlund 2004: 9.2.1, 9.7.2, 10.2.1, 2001: 4.2). So in L-impersonals, both a C-rightward and lower positions are available in definites, as in (9); the same goes for weather verbs (see C-V s.v. *riгна* for examples). H-impersonals and referential *pro* will turn out not to differ. Other subjecthood diagnostics like being PRO or conjunction reduction also do not seem useful to distinguish these constructions.

A central theoretical issue with L-impersonals is conventionalisation. In NIc, it cannot be predicted which verbs allow a null argument, under which syntax they do so, and what the meaning is (H.A. Sigurðsson 1992: 6.1.2.3, 2005, 2006, 2011b; Schäfer 2008: 7.4, Wood 2016: sec. 5.2 and note 17). This is true of OIc, as far as can be told. Most ordinary nominative-accusative transitives are never found as L-impersonals, such as *sökkva* 'sink', *elska* 'love', while others always are, like *syfja* 'ACC gets sleepy'. Sometimes the impersonal has a syntax and meaning close to the general case, as with *brjóta* 'break up', sometimes it differs slightly, as with *reka* 'NOM drives ACC' in L-impersonals 'ACC drifts', but often a verb occurs as an L-impersonal only with a special syntax and meaning, as *halda* 'NOM holds ACC' in *halda við* lit. 'holds against ACC1 ACC2' meaning 'ACC1 is on the verge of ACC2'.²

Here the proposal of Wood (2016) is adopted: the conventionalisation of L-impersonals is of the same nature as that of idioms. Concretely, the meaning of the quasiargument does not result a sensible interpretation with various predicates, but one may be provided by an idiomatic interpretation of the quasiargument + predicate combination. By traditional description, the meaning of the null subject of L-impersonals is indeed predicate-dependent: the chief classes are psychosomatic cause with *mik batnar* ___ '___ betters me.ACC healthwise [=I get better healthwise]', a natural force with *skerir* ___ *ffjörðu í landi* '___ cuts firths in land [=firths cut into the land]', and fate *slær* ___ *í barðaga* '___ strikes to battle [=battle arises]', with further subclasses and ultimately arbitrariness (Nygaard 1894, Hansen 1952).

This idiosyncrasy of meaning often results in an analytical ambiguity with H-impersonals and with referential *pro*, as traditional descriptions have noted. Thus Heusler (1950: §461) observes that *suá seger* ___ *í Voluspó* "so says in Voluspa" may be analysed as an L-impersonal *so verlaudet es* "so it says" (cf. Pogatscher 1901: 296), as an H-impersonal *so sagt man*, "so one says" (thus Nygaard 1894: 14), or as referential *pro*-drop with inferred *pro* *so sagt der Dichter* "so says the poet" (thus Hansen 1952: 95). Here this ambiguity will be chiefly of interest in its effect on studying H-impersonals and referential *pro*.

² There are patterns, such as psych-verb "reversal", *ek uggi, at...* "I fear that ..." (Nj) beside *mik uggir, at... é* "___ frightens me that..." (Nj), but again it presently needs stipulation that a verb like *elska* 'love' does not participate.

3 H-impersonals

3.1 Modern Icelandic IMC

Both NIc and OIc have silent subjects interpreted as human impersonals, similar to English *one*, NIc *maður*, German *man*, NIc, French *on*, Italian *si*. The construction is henceforth called H-impersonal and the silent subject impersonal pro. The NIc construction has been well studied, but in OIc H-impersonals have been only very partially described. The two differ in interesting ways, some that highlight missing elements in current theories, some that result in significant interference with identifying referential pro in OIc. This subsection introduces the NIc H-impersonal as background.

In NIc, null subjects with an arbitrary human interpretation are productive only in the impersonal modal construction IMC (20a), where they combine with 3SG agreement (H.A. Sigurðsson 1992: 5.3.1, E.F. Sigurðsson 2014, H.A. Sigurðsson and Egerland 2009):

- (20a) Hér skal getit þess, að... (20b) Hér skal þess getit, að...
here shall mention it/that, that... here shall it/that mention, that...
"Here shall __ [=one] mention that..."

(H.A. Sigurðsson 1992: 6.1.5)

The IMC (20a) is found with a subset of deontic modals: *mega*, *eiga* (raising modals, deontic in the IMC), *verða*, *þurfa* (raising modals, always deontic), and formal style *skulu* (raising deontic modal), *bera*, *vera* (deontic modals with dative subjects when overt). Of these modals, *skulu*, *bera*, *vera* also participate in the "ergative construction", (20b), where the object promotes to subject. With both regular and impersonal pro subjects, the infinitival complement of at least the deontic raising modals is large enough to contain *have*-perfects or another modal construction, though not TP-level negation (E.F. Sigurðsson 2014). Unlike with regular subjects, the impersonal pro must correspond to an undemoted external argument or EA of the infinitive (H.A. Sigurðsson and Egerland 2009: 169).

Evidence about the syntax of H-impersonals has come from A-movement and anaphoric dependencies. The subject blocks A-movement of the object to subject, seen in (20a) for *þess*, just as an overt subject (H.A. Sigurðsson 1992: 5.3.1, 6.1.2.3, 6.1.5, 2011, H.A. Sigurðsson and Egerland 2009: 171, Wood 2016). In most other construction with a silent EA, a definite object must, and an indefinite object may, front to the subjecthood position: personal and impersonal passives, L-impersonals, and the ergative construction (20b).

Anaphoric dependencies also indicate that the subject of H-impersonals behaves as a regular DP. It antecedes local anaphora, secondary predicates with MSG concord, and adjunct PRO (H.A. Sigurðsson and Egerland 2009; E.F. Sigurðsson 2014; examples from OIc below). There is debate on the precise conditions on each dependency, but passing them all is as DP-like as silent arguments get (Landau 2010, Legate 2014), and as DP-like as human impersonals get, including English *one*, German *man*, French *on*, but not Italian *si* (Rezac and Joutiteau 2016).

The behavior of the impersonal EA suggests a DP-like analysis, rather than lexical argument reduction or a bare variable closed by existential closure (for this logic in other H-impersonals, see Chierchia 1995, Legate 2014, Rezac and Joutiteau 2016). Icelandic is unusual in restricting such a DP-like impersonal to a subset of modal constructions, which has no parallels with *one*, *man*, *on*. It is also unusual in restricting the impersonal argument to the EA, which is rather

characteristic of impersonals that do not pass DP-hood diagnostics, such as Italian nominative *si* in nonfinite contexts and French mediopassive *se* generally (Dobrovie-Dorin 2006). This theoretical challenge of restricting a DP-like impersonal to the EA of a subset of modals – as if English *one* were so restricted – has not been met.³

3.2 Old Icelandic H-impersonals

In OIc as in NIc, H-impersonals are frequent in the OIc analogue of the IMC, henceforth IMC*. Identifying them is not foolproof, since some are ambiguous with L-impersonals and others with referential pro, but there is a wealth of robust examples like (25).⁴

- (25a) ef ekki skal __ mega sjá á ykkur, at þit hafið í bardaga verit "(It will seem to you a bad story to tell,) if __ [=one] shall not be able to see on you that you have been in battle" (Nj)
- (25b) þeir hafa vapn sva goð, at eigi fær __ onnur slíkt "they have such good weapons, that __ [=one] does not find other such" (Nj)

Almost same modals appear in the IMC* as in NIc, most commonly *skulu*, *þurfa*, *mega*, *vera*, but also *verða*, *eiga*, *bera*; additionally *vilja* 'wish' also occurs (q.v. Faarlund 2004: ch. 8). As in NIc, multiple modals occur, as in (25a). Also as in NIc, impersonal pro must be the external argument, provided motion verbs are analysable with one (*ganga* 'go', *fara* 'go' are frequent).

There are also lexical verbs like *fa* in (25b) or *vita* in (2) found with null subjects interpreted as human impersonals. In NIc a handful of lexical verbs occur as well (Einarson 1949: ch. 14; H.A. Sigurðsson and Egerland 2009: 167-170). In OIc the verbs involved are few in any particular text, but taken together many and diverse, and nothing indicates any limits on the construction, including a restriction to external arguments. Here is a list for the texts especially studied here for H-impersonals, listed in the Appendix, but looking outside them quickly reveals others, e.g. *leita* 'seek', *kanna* 'explore' in Thidr.⁵

³ Most reported properties would fall into place if the IMC modals were special in allowing c-selection for an infinitive with uncontrolled PRO, beside their ordinary raising or control constructions: thus as if they corresponded both to *may* in *They must register themselves*, and to *be necessary* in *It is necessary to register oneself*. However, that would predict the possibility of remote/logophoric control, as in *They believe that it is necessary PRO register themselves/oneself*. It is also unclear whether it would allow for the *by*-phrases data of E.F. Sigurðsson (2014). It is not extensible to survivors of lexical H-impersonals in NIc nor to OIc, discussed next.

⁴ Ambiguity with referential pro is addressed at length below. Ambiguity with L-impersonals occurs when a predicate independently form an L-impersonal: *luka upp* is both 'NOM opens ACC' and an L-impersonal 'ACC opens' (C-V), so *hvar upp skyldi __ luka* (Gylf) might be L-impersonal "(you did not find) where __ should open it [= it should open]" (cf. Faulkes 2005: s.v. *luka*) or H-impersonal "where __ [=one] should open it" (cf. Nygaard 1894: 14); *missa* 'miss' is L-impersonal in *þar sem missti __ husanna* "where __ missed houses [=there were no houses]" (ONP), so *ok misti __ þess fylkingararmsins* (Hkr) may be L-impersonal "(Dag was then not yet come with his troops,) and __ missed that wing of the army [=that wing of the army was missing]" (so Finlay and Faulkes 2014) or H-impersonal "... __ [=one] missed ..." (so Nygaard 1894: 14).

⁵ The future auxiliary and other complex verbal constructions are give as a whole. Symbols: * for particularly frequent verbs, † for verbs in proverbs, ! for jussives. Jussives are subjunctive commands with 3rd person commandee subjects, overt or H-impersonal, the latter emphasised by Heusler (1950: §461). Unlike his examples, most cases here do not have an alternative analysis with referential pro, q.v. Nygaard (1894: 11), for instance (i).

- (i) Hoskuldr malti: 'Nu er at taka við fenu.' Gunnarr malti: 'Greiði __ nu þa, þvi at ek em nu bunn við at taka.'

Lexical H-impersonals (Eb, Eg, Eir, Gisl, Gr, Groen, Gylf, Laxd, Nj, Vatn): *bera!* 'bear', *binda!* 'bind', *drepa!* 'kill', *drepa!* 'kill', *fá!* 'get', *fá gørt!* 'get done', *fara†!* 'go', *finna!* 'find', *munu finna!* 'will find', *ganga!* 'go', *munu gøra*(?)!* 'will do', *greiða!* 'pay', *hafa†!* 'have', *heyra** 'hear', *kalla!* 'call', *kenna** 'recognise', *koma!* 'come', *koma e-u við!* 'manage to do something', *komast†!* 'come to the end', *leysa!* 'loosen', *munu reyna!* 'will test', *segja!* 'say', *sjá** 'see', *sjá!* 'see', *sækja!* 'seek', *taka!* 'take', *taka at horfa!* 'begin to look', *veita!* 'grant', *vera†!* 'be', *verða vart við** 'become aware.NSG of', *vita** 'know'

In light of this, it may be that at some point the construction was productive with all verbs. One line support is that the lexical verbs with null human impersonal subjects have their ordinary syntax and interpretation, just as verbs in the IMC* do, whereas verbs lexicalised in L-impersonals usually have idiomatic syntax and interpretation. Another line of support is a shared restriction between lexical verbs and the IMC* to generic contexts, discussed below.

At the same time, the number of lexical H-impersonals is small. They could be lexicalised remnants of an earlier productive construction, as in NIc; a parallel is the remnant *hear say* (*I've heard say that...*) in English of earlier ECM impersonals discussed below. They could also reflect a construction that was never productive nor isolated; a parallel is OIc reflexive passives like *þeir sásk aldri síðan* "they were never seen since" (Nj; C-V) (for NIc, see Wood 2015: 6.3). On this view there arises again the unmet theoretical challenge of restricting a DP-like impersonal to particular verbs, as if *one* were found only with *see* and *hear* – assuming that the OIc H-impersonal is DP-like in both the IMC* and with lexical verbs, which is shown next.

Comparative and historical findings do not presently arbitrate between a productive or other status of OIc lexical H-impersonals. They have been viewed as the continuation of an earlier productive formation (Pedersen 1907, Zubatý 1907), which must have atrophied at some time prior to NIc, but also as a special development (Hopper 1975: 81), with an unknown apogee before it reversed itself. NIc has developed a generic human impersonal with *maður* 'one' beside 'person, man' from OIc *maðr* (Egerland 2003a). Though similar developments have occurred elsewhere in Germanic prior to the OIc period, in the material studied here there is no evidence that OIc *maðr* was anything but a regular bare NP 'a/the person', and the development is stated to be recent in H.A. Sigurðsson and Egerland (2009: 159-160).⁶

"[Hoskuld and company go to Gunnar's to pay up.] Hoskuld spoke: 'Now one is to take the payment'. Gunnar spoke: 'pay.3SG/PL.SUBJ __ [=let one pay, French *qu'on paye*] now then, since I am now ready to receive.'" (Nj)

⁶ Evidence for a human impersonal pro for PIE are based on correspondences chiefly between OIc, earlier and dialectal Czech, and Indo-Aryan (Pedersen 1907, Zubatý 1907). There are only a few cases in OHG and OE (Walkden 2014: 5.3.4). For OHG, see Axel (2007: 6.3). For OE, Pogatscher (1901: sec. 5, also 285-6) is the fullest discussion; outside well-defined classes that may well be analysed otherwise, namely the possible L-impersonal type *as* (*one?*, *it?*) *says in the Bible* (cf. OED s.v. *it* 3f) and the prescription subject type *if* (*one?* *he=the patient?*) *coughs* (here may belong Walkden 2014: 5.3.4, ex. 60), there is only a couple of examples with lexical verbs (to which may be added Rusten 2010: 4.7.2.7, ex. 4.55), beside a more robust analogue of the IMC (Hansen 1952: 134 citing Wahlén 1935). In Gothic, I know of no analogue: Zubatý (1907) denies one, while Siewierska (2004: 212) claims it without reference, and I have not tracked it down, unless it is the isolated 3rd person imperative *atsteigadau* 'καταβάτω, qu'on descende', interestingly recalling OIc jussives; the construction semantically and lexically related to the IMC* was rather different, Joseph (1981).

3.3 Syntax of the Old Icelandic H-impersonal

3.3.1 *Anaphoric dependencies*

Evidence of the anaphoric activity of the null subject of H-impersonals is sparse but clear. Local anaphora are attested in the IMC* (28a) and with lexical verbs (28b). They may be compared to local anaphora with arbitrary PRO (28c) (with a 3rd rather than 2nd person anaphor, as Boer 1900: 95n points out, indicating the arbitrary PRO).⁷

(28a) í dal þeim ... er svá er djúpr, at engan hlut sér __ ór nema himin yfir *sik* "in that dale ... that is so deep, that __ [=one] sees no thing save the heaven above *oneself*" (Eb)

Lexical

(28b) Nú er __ at verja *sik* "Now __ [=one] is to defend *oneself*" (Nj)

at hann má __ vefja saman sem dúk ok hafa í pung *sinum*. "and with such great skill that __ [=one] may fold it like cloth and have in *one's* purse" (Gylf)

en mátti __ vefja saman sem dúk ok hafa __ í pung *sér* "and __ [=one] could fold [sc. Skidbladnir] together like cloth and have in the purse *oneself.DAT* [sc. in *one's* purse]"

*IMC**

(28c) Megu þér sjá, herra, at betra er at gefa einum manni grið ... heldr en brjótast í móti *sœmð sinni*, ok hætta, hvárt þér náð manningum, eða eigi "You can see, lord, that it is better to give one man truce ... rather than break with *one's* honour, and risk, whether you get the man or not" (Gr)

PRO

Concording adjectival predicates are found at least with *verða* 'be(come)':

(29a) enda er vandara at PRO búa *sik* í konungs herbergi en annarsstaðar, ok verðr __ síðr at hlœgi *görr* af hirðmonnum "and indeed it is more important PRO to fit oneself out in the king's quarters than elsewhere, and __ [=one] becomes less *made*.MSG laughing-stock by retainers" (Hreiðars þátrr)

(29b) [Context: The expedition-members include men and at least one woman. The Skrælings take fright, and run out to the boats and row south by land.]

Verðr __ þá ekki *vart* við þá þrjár vikur í samt. " __ [=one] does not become not *aware*.NSG of them then for three weeks continuously." (Eir)⁸

(29c) Eigi er þat vkvnigt, þott eigi se __ *fræpimenn*, at... "It is not unknown, though __ [one?] be.3SG/PL not *scholars*.PL, that ..." (Gylf cit. ONP)

⁷ In NIc, local anaphora are available to the silent passive agent, which does not license secondary predicates. Such reflexive passives (Schäfer 2012) have not been found in OIc (Árnadóttir et al. 2011).

⁸ Impersonal *verða vart við* is perfectly parallel to its over-subject counterpart which requires agreement on *varr*, *Þeir váru þar hálfan mánuð ok skemmtu sér ok urðu við ekki varir*. "They were there a half month and entertained themselves and were aware.PL of nothing (untoward)" (Eir), so at some point it *vart* seems to have been a concording predicate, rather than adverbial use of NSG as in *vera kátt* 'be cheerful'. Yet it is attested at least half a dozen times in OIc with no instances of *varr* and so continues to NIc, suggesting lexicalisation.

The phi-features of the concording predicates are MSG and NSG. These possibilities fit expectations. Singular concord is a characteristic of some human impersonals (e.g. the Finnish generic impersonal, Holmberg 2009). Gender typically shows two options (e.g. French *on*, Rezac and Jouitteau 2016). If the domain over which an impersonal ranges is known to be only of one gender, then that gender is available. This gives masculine in (29a). Default gender is used if the domain is mixed or of unknown gender, and often even otherwise under apparent domain-widening. In OIc, default is neuter. In (29c), a subject that seems impersonal is predicated of an MPL nominal predicate, impossible for *one*, *man*, *on*, but typical of Italian *si* (Maiden and Robustelli 2000: 6.3.3). Yet (29c) is usually analysed with a 3PL copula and so spelled in modern orthography editions of Gylf, not as an H-impersonal.⁹

Anaphoric dependencies show that the subject of not only the IMC* but also of lexical verbs is DP-like. This impersonal *pro* need not be an external argument with lexical verb, so something about the IMC*/IMC must impose this restriction. There is an analogue in the Italian human impersonal *si*, which is restricted to external arguments in infinitives but not in finite clauses, but it then lacks DP-like properties even more than *si* in finite clauses (Dobrovie-Sorin 2006).

3.3.2 A-movement

In NIc, A-movement shows that the subject of the IMC is DP-like in blocking A-movement of the object to subject position, unlike the subject of L-impersonals. In OIc subject positions cannot be used in this way, as discussed for L-impersonals. Definite objects of H-impersonals appear in positions both low (post-nonfinite) and subject-like (right-adjacent to C or V-in-C) with all classes of impersonal verbs (for lexical verbs, see (37b), (28a) resp.):¹⁰

- (30a) 'en þó munt þú segja mér verða hversu *málit* skal __ upp taka.' ...
 and yet will you tell me must how *the.case* shall __ up take
 Þá sagði Hrútr honum hversu upp skyldi __ taka *málit* ...
 then said Hrut to.him how up should __ take *the.case*
 "'and yet you will have to tell me how __ [=one] shall take up *the case*' ... Then Hrut told him how __ [=one] should take up *the case*" (Nj)
IMC/ergative modal with object in subject/object position alternation

⁹ What then would (29c) be? It might be an impersonal use of 3PL *pro*, though it does not fit not the usual, well-studied type, arbitrary 3PL discussed in section 4.1, but rather the silent 3PL analogue of *hann* discussed below.

¹⁰ Of other evidence for subjecthood, there is the isolated (i). On one analysis, the object of the first clause has promoted to subject and supplies the subject of the second clause under conjunction reduction plus auxiliary ellipsis. However, (i) may be *apo koinou* (Boer 1900: 297n), and other discontinuities do occur (Boer 1900: 236n, 287n). Inversely, (ii) looks as if the object of the IMC* has promoted to subject and then been gapped by conjunction reduction or ATB extraction, but only if we knew that it is not simply a silent object – for instance if object drop is limited as in NIc to topic drop and parallel object drop.

(i) hann skyldi setja í myrkvastofu í dyblizu eina, ok __ bíða þar bana "(Thorstein got a quick judgment and a rather harsh one): him __ [=one] should.3SG place.INF in a dark room in a prison, and __ [sc. he should] await.INF death there (if none freed him with money). (Gr)

(ii) þá skyldi sá, er t gerði ok til arfs skyldi __ leiða __
 then should he, who did and into inheritance should [=one] lead __
 then should he, who held the funeral feast and was to be led into his inheritance (Hkr)

- (30b) *ef þat þarf __ at reyna um skipti vár sona Eiríks*
 if *that* needs __ to try about dealings of.us of.sons of.Eirik
 "if __ [=one] needs to test that in dealings between me and the sons of Eirik" (Eg)
IMC-only modal with object in subject position

3.3.3 *Nonsubjects*

So far, H-impersonals have limited to finite subjects; that is the described situation for both OIc and NIc. The crosslinguistic behavior of human impersonals leads to different expectations (see esp. Egerland 2003a). Some are limited to environments that license nominative subject weak pronouns (German *man*, French *on*), clitics (Italian "nominative *si*"), or agreement inflection (Irish autonomous form), and these also appear in both generic and episodic contexts. Others appear in a variety of grammatical functions, and these are restricted to generic contexts (English *one*, Icelandic *maður*). We will see in the next subsection that the OIc H-impersonal seems to be generic. In terms of formal parallels, particularly close is then the generic human impersonal studied by Holmberg (2010) in Finnish. It is traditionally described as a null 3SG subject, but Holmberg argues that like *one* it is also found as nonnominative subject and object. In OIc, there are solid candidates as nonnominative subject.

One candidate for nonnominative subject comes from psych-verbs. Eythórsson and Barðdal (2005) argue that OIc had nonnominative subjects with psych verbs of the type *vara* 'forebode', as in *mik varir* "me.ACC forebode.3SG self.ACC = I forebode, expect" (C-V). With them a human impersonal accusative subject should look exactly like (31a): the concurring emphatic diagnoses a silent accusative subject, and the interpretation is clearly generic.¹¹

- (31) *verðr mjök mǫrgu sinni, / þats minnst varir __ sjálfan*
 happens much many time / that.which least forbodes __ self.ACC
 "that which one oneself forbodes happens very often" (Ragnars saga loðbrókar)

Another candidate for nonnominative subject impersonal *pro* occurs in the *be* + infinitive construction (32). With an overt subject it is seen in (32a): *þér* is the dative argument of the adjective, raises or controls embedded PRO, and its case is "transmitted" to the predicate adjective *góðum* in the infinitive (on OIc, Nygaard 1906: 216n, Faarlund 2004: 10.2.5; the transmission is well studied in NIc, see Landau 2008 with literature). In (32b), we have the same construction, save that the matrix argument is silent and generic, but it is still there as the concurring predicate shows (so Boer 1900: 202n; see Sturtevant 1925 for another example).

- (32a) *betra er þér [PRO at vera góðum]*
 better is you.DAT [PRO/t to be good.DAT]

¹¹ This example is from poetry, but of a prose-like sort. Similar examples like *er minnst varir __* "when least forebodes __" are common and often translated as "when one least expects it" (C-V s.v. *vara*), but a contextually supplied experiencer is possible in all cases encountered here. This is so also for other candidates found in this study like (ia), where *líka* 'like' ordinarily requires a dative experiencer subject.

- (i) [Hallgerd arrives and agrees to take up management of the household.]
 Hallgerðr sat mjök á sér um vetrinn, ok líkaði __ við hana ekki illa. "Hallgerd kept her temper down that winter, and __ [one? they at the household?] liked her well enough." (Nj)

"it is better for you to be good" (Faarlund 2004: 278)

- (32b) Nú er ___ því illt [PRO illum at vera] ...
now is ___ therefore ill.NSG [PRO/t wicked.DAT to be]
"Now it is ill therefore (for one) to be evil..." (Gr)

When we turn to nonsubjects, there is presently no robust candidate for an impersonal pro. The silent objects surveyed in Nygaard (1906: §18-28) do not have the interpretation of generic human impersonals, and would furthermore need confirmation as DPs by something like a concurring predicate as discussed in section 4.

3.3.4 Nonfinite subjects

So far we have considered finite clauses. We may ask what happens to impersonal pro under raising and ECM (in other nonfinite contexts, we get controlled or arbitrary PRO). It seems available in raising constructions, though it is impossible to tell if it actually raises or agrees (the nominative subject of raising verbs frequently fails to agree in OIc, Nygaard 1906: §66n4; on these raising verbs, see Faarlund 2004: 9.3.2, 10.2.6).

- (33a) Þat var svá síð at eigi þótti ___ mega til bardaga leggja. "That was so late [sc. in the season] that ___ [=one] did not seem to be able to begin a battle". (Jómsvíkinga saga)
- (33b) er þeim tók ___ við at horfa. "when ___ [=one] started to turn against them" (Eb; Hansen 1952: 106)

Under ECM, studying H-impersonals runs into a confound: a separate impersonal ECM construction. It is well known in earlier English, where it is illustrated by *The lady bade ___ take away the fool* (Shakespeare). In English, this construction occurs with a proper subset of ECM verbs; the ECM subject is silent; it is interpreted as a human impersonal, generic or episodic; and the construction long outlived null subjects, including the few impersonal ones in Old English. Analyses include an unmarked passive infinitive (Callaway 1913; cf. *faire-par* causatives, Kayne 1975), arbitrary PRO (Fischer et al. 2004: 7.2), or implicit object (Los 2005: 5.4). In OIc, the construction seems very similar (Falk and Torp 1900: §122, Nygaard 1906: §21a, §207, §217; for NIc., Einarsson 1949: 171-2). It too is unrelated to the H-impersonal: it is frequently episodic, (33a), and the null argument need not be an external argument even with modals, (33b). The impersonal ECM construction makes it difficult to detect whether examples like (33c) are H-impersonals embedded under ECM.

- (33a) hann bað bera merki sitt fram "he bade ___ [=people] bear forth his standard" (Hkr)
- (33b) án þeirar algörvi sannar Páll postoli ___ ekki mega guði líka "without this perfection Paul Apostle affirms ___ not to be able to [=that one cannot] please God" (Nygaard 1906: §217)
- (33c) ok kvað ___ þenna mann mega heita hinn mesta ofláta "and said ___ be able to [=that one could] call this man the greatest show-off" (Vatn)

3.3.5 Impersonal 'he'

A last issue in the syntax of H-impersonals is whether impersonal pro has an overt counterpart in apparently impersonal uses of the overt 3SGM pronoun *hann* 'he' (cf. C-V s.v.). This use of *hann* is virtually absent from the saga-style; (34a) is the only example noted in the present corpus, and it may belong to the following two categories. The use occurs a couple of times in the works of Snorri Sturluson, illustrated by (34b), often attributed the authorship of Eg. It seems rather frequent in language of the law-codes, as in (34c) (see also e.g. Grágas 7, 11, etc.). These examples and others show that impersonal *hann* may but also need not be anaphoric to the human impersonal, arbitrary PRO, or implicit generic arguments. All examples have *hann* as nominative subject, but at least a dative subject also occurs (Grágas 11, 'if it seems to him [=one] more meet to...').

- (34a) Þat var siðr hólmgöngumanna, at *PRO_{arb}* þurfa ekki at bregða sverði sínu á hólmi, *PRO_{arb}* láta heldr sverðit hendi fylgja, svá at þegar væri sverðit tiltækt, er **hann** vildi. "(After that they get ready for the duel; Egil went forward and had helm on head and shield in front of himself and spear in hand, but the sword Dragvandil he fastened to his right arm.) That was a custom of duellers, not *PRO_{arb}* to need to draw one's sword on in a duel, rather *PRO_{arb}* let the sword be attached to the arm, so that the sword were immediately seizable, when **he** [=one] wanted." (Eg; C-V s.v. *hann*)
- (34b) [Enumerated list of Goddesses]
Því er þat orðtak at syn sé fyrir sett þá er **hann** neitar. "(Eleventh Syn: she watches the doors of the hall and closes before those who should not go in, and she is set to defense at assemblies against those suits that she wishes to refute.) Therefore it is an expression that *syn* ['denial'] is given when **he** [=one] denies." (Gylf)
- (34c) [Chapter beginning]
Olgerð hafum **ver** enn heitit at gera **boande oc huspreyia** iamvæge sitt. oc signa þat nott hina helgu til krist þacca. oc sancta Mariu. til árs. oc til friðar. En ef eigi er sva **gort**. þa scal __ böða firi þat. morcom .iij. biscope. En ef **hann** sitr sva vetr .iij. at **hann** helldr eigi olgerðum upp... "We have moreover promised to make ale, farmer and houselady in their equal measure, and sign it with the cross during the holy night in thanks to Christ and saint Mary for prosperity and peace. And if it is not so done, then __ [=one] shall offer for that 3 marks to the bishop. And if **he** [=one] remains so 3 winters that **he** [=one] does not carry out ale-making... (Gulapingslög 7, cit. Keyser and Munch 1846)

It is not clear whether *hann* is the overt counterpart of human impersonal pro or a distinct entity. In some ways, they behave similarly, notably neither being restricted to nominatives. In others, they differ: only 3SGM pronouns are found as impersonals but human impersonal pro seems to allow neuter concord; there is no preference for modal constructions with impersonal *hann*; and impersonal *hann* is rare and stylistically restricted, so that there are styles and stages of the language where it is not found but human impersonal pro is.

From a crosslinguistic perspective, the use of an overt 3SG pronoun as a human impersonal is remarkable and not discussed in recent literature. In fact, one of the most widely shared properties of all human impersonals is the unavailability of anaphoric relationships with 3rd

person pronouns (e.g. Chierchia 1995, Prince 2003), though on this score English *one* is exceptional in American varieties because it allows *he* and *they* as anaphora (Rezac and Joutiteau 2009; cf. Huddleston 1984: 295, Huddleston and Pullum 2002: 10.1). In older literature, Pogatscher (1901: 296ff.) has an important discussion of impersonal uses of overt 3SGM pronouns in Old and Middle English. Pogatscher argues that it originates from their use as anaphora to Old English *man*, originally a bare noun 'a/the person', but grammaticalised to an impersonal pronoun (diagnosable by pronominal placement and by use as anaphor to itself). The same development may underlie impersonal *hann* in OIc. In law-codes *hann* is frequent as anaphor to *maðr* 'a person' or other bare nouns, and the complexity of some codes might lead to confusion about what *hann* is anaphoric to (e.g. Grágas 1). Alternatively, *hann* might refer to the implicit 'the legal person concerned' of lawcodes; there are other anomalies in the usage of *hann* in lawcodes that need to be understood (C-V s.v. *hann*). A separate study of legal language is needed to shed more light on these matters.

3.4 Genericity

Some human impersonals like *one* are restricted to generic contexts, unlike indefinites which are closest to them in meaning among ordinary DPs. If the OIc H-impersonal is generic, we should find contrasts along the lines of *On Sundays one goes to the market – *Last Sunday one went to the market*. It is difficult to study this in a corpus, because the relevant notion of genericity remains to be understood and surprising environments keep on being uncovered (see e.g. Egerland 2003b: 83n10, Moltmann 2006: 276, Rezac and Joutiteau 2006: 8.9). The best heuristic remains trying out generic impersonals like *one*, but with the caveat that there are many subtle conditions that affect the availability of generic impersonals (see e.g. Bolinger 1979 on *one, you*; H.A. Sigurðsson and Egerland 2009: 175 on Icelandic *maður*). This tells us that (35) is a generic context, though it seems episodic; genericity seems to arise here because it is typical to suddenly reach the towncentre on the route (cf. **...then suddenly one turned right on the first intersection and parked*).

- (35) By 10 o'clock they were in the car and coasting down to the hill to Honfleur ... The distance was little more than a kilometre; trees gave way quickly to a busy street; then suddenly **one** reached the contorted towncentre and the spread of the Old Basin, fringed with bright sunblinds. (A. Hunter, *The Honfleur decision*, 1981)

In OIc, the IMC* is generic because modals support generic impersonals by quantifying over situations, and most lexical H-impersonals like (25b) are clearly generic as well. There are some less obvious cases. (37) illustrates generic adjuncts to episodic matrices: in (37a), the adjunct generalises over travellers, in (37b) over perceivers with a deontic component.

- (37a) spurðist honum svá til, sem ekki væri kristni-haldit, þegar er norðr sótti __ á Hálogaland (Hkr) "and he learned that there was hardly any observance of Christianity when __ [=one] made one's way north into Hálogaland" (Hkr)
- (37b) Fell snjór mikill, svá at ógørla sá __ veguna. "A heavy snow fell, so that __ saw the paths unclearly [=one could not see the paths clearly]." (Eg.; Hansen 1952: 103).

Similar generics are found in matrix clauses. In (38a), a generic context seems created by generalisation over groups arriving from diverse locations. Here *one* is difficult, but comparable cases of *one* are discussed by Moltmann (2006: 276) (also Egerland 2003b:n4). (38c) may also fall here: *kenna* in similar episodic-seeming cases has been translated by 'one' (C-V s.v. *kenna* IV.γ) and seems to reflect a conventional generalisation over potential witnesses, even though here there are only two. There remain cases like (38d) where it is difficult to tell whether a generic analysis is reasonable.

- (38a) Eru þá þegar leikar lagðir í Ásbjarnarnesi, ok safnat víða til um heruð; kom __ til vestan ór Miðfirði ok af Vatnsnesi ok ór Vatnsdal ok allt utan ór Langadal; varð þar mikið fjölmenni. (Laxd) "(Hall received Kjartan, his kinsman, with great joy.) Games are then organised right away at Asbjarnarnes, and it was gathered [=people gathered] to them widely about the district; __ [=one, people] came to them from the west out of Midfjord and from Vatnsnes and out of Vantsdal and all the way out of Langadal; there was a great multitude." (Laxd)
- (38b) En vitum var ekki upp skotit fyrir þá sök at sú var siðvenja, at vitar fóru austan eptir landi, en austr þar hafði __ ekki orðit vart við ferð þeira "But the beacons were not kindled because it was the custom that beacons went from the east along land, and in the east there __ [=one] had not become aware.NSG of their journey" (Hkr)
- (38c) [Thorkel attacks Grim; there is no else around.]
Grímr rann þegar á Þorkel, ok takast þeir fangbrögðum; kenndi __ þar brátt aflsmunar, ok fell Þorkell, ok Grímr á hann ofan. "Grim ran at once at Thorkel, and they grasp each other in wrestling; __ [=one] soon recognised a difference in strength, and Thorkel fell, and Grim on top of him." (Laxd)
- (38d) Þrándr lét illa yfir verki þessu ok bauð þó fé til sátta fyrir frændr sína. Leifr ok Gilli gengu at eptirmáli, ok kom __ þar eigi fébótum fyrir. "Thránd expressed regret about this deed, and yet offered money for reconciliation on behalf of his kinsmen. Leif and Gilli went to prosecution, and __ [=one] did not bring a monetary compensation [tr. Finlay and Faulkes 2014: there was no monetary compensation]." (Hkr)

There are two alternative analyses of these examples. One is that OIc H-impersonals are not necessarily generic, though rarely used outside generic contexts. This is the case of French *se*-mediopassives and remains analytically difficult (Zribi-Hertz 2008; Lekakou 2005, Dobrovie-Sorin 2006). The other is that there is a 3SG *pro* referring to a collective like *fólkit* 'the folk' inferred from the context. This would make (38b) a violation of SG because the inferred *pro* is not in a topic-drop context. At present there is no independent support for the inference of singular collectives, unlike for that of plurals discussed in section 4.

3.5 Pseudospecific uses

There are clear counterexamples to the generic restriction on H-impersonals, but they belong to pseudospecific uses of human impersonals. Human impersonals ordinarily need a nontrivial domain to generalise over, but on pseudospecific uses the domain is a singleton set. This use of

impersonals usually brings with it a degree of indirectness due to avoidance of a more directly referential expression, comparable to *Someone [=you] forgot to set the alarm (didn't we dear?)*. Pseudospecific uses are found with both generic/episodic impersonals (*man, on, si*, Egerland 2003ab, McCloskey 2008, Rezac and Jouitteau 2016) and generic impersonals (*one*, Wales 1996: 3.7, *maður*, H.A. Sigurðsson and Egerland 2009).¹² In the case of generic impersonals, pseudospecific uses are available even in apparently episodic contexts of the sort familiar from *One is not amused (one*, Wales 1996: 83; *maður*, H.A. Sigurðsson and Egerland 2009: 163).

Whether a human impersonal has pseudospecific uses, and which ones, varies across speech communities. In the NIc IMC, "[pseudo]specific readings are ... unavailable or at least heavily constrained in the impersonal modal construction" (H.A. Sigurðsson and Egerland 2009: 175). In OIc, by contrast, pseudospecific uses are common. They are introduced in (41): *honum skal __ eigi bregða...* " __ [=one] shall not draw it" a generalisation applicable to all individuals, but *skal þér eigi þessa varna* " __ shall not refuse this to you" is applicable only to the speaker as the owner of the sword Skofnung.

- (41) en með því at þú þykkist þetta gera fyrir mínar sakar, þá skal __ þér eigi þessa varna, er þú beiðir, því at ek ætla Skofnung vel niðr kominn, þóttú berir hann. En sú er náttúra sverðsins, at eigi skal sól skína á hjóltin, ok honum skal __ eigi bregða svá að konur sé hjá. "and since you fell you are doing this for my sake, __ [=I] shall.1/3SG not refuse you this which you ask, because I think Skofnung well placed, if you bear it. This is the nature of the sword, that the sun must not shine on the hilts, and __ [=one] shall.1/3SG not draw it if women are present. (Laxd)

In point of fact, we do not know that in (i) *skal ... varna* is an H-impersonal, rather than referential 1SG pro, as 1SG and 3SG are syncretic for this verb. Other cases like (42) unambiguously show H-impersonals used to refer to a single person, sometimes directly addressed by a vocative (cf. Rezac and Jouitteau 2016: ch. 5 on French *on*). In OIc the point is easiest to make from 2SG because 1SG and 3SG are syncretic in the most frequent modal forms.

- (42a) 'ok skal __ gjalda þegar, bróðir, ok leysa vel af hendi.' "(Then Hrut arbitrated and said: 'For the slaying of Thorvald I fix two hundred silvers' – that seemed then a good weregild –) 'and __ [=you] shall.1/3SG pay at once, brother, and pay with an open hand" (Nj)
- (42b) [Gunnar and company take up position and await the assault of Kol and company.] 'Skal __ renna nú, Gunnarr?' "(Kol spoke, when they went forward:) ' __ [=you] shall.1/3SG run now, Gunnar?'" (Nj)
- (42c) [As his house burns, Njal enters the bed-closet to die, and then Skarphedin says:] Nú mun faðir minn dauðr vera, ok hefir __ hvárki heyrtil hans styn né hósta. "Now will my father be dead, and __ [=I/we] has.2/3SG heard from him neither groan nor cough." (Nj)

¹² The term pseudospecific is adopted from McCloskey (2007); most literature uses the term *specific* both for a human impersonal used for a single individual but with indirectness and without anaphoric dependencies to personal pronouns, and for cases where an apparent human impersonals refers directly, has phi-features like 1PL corresponding to the referent, and allows anaphoric dependencies to personal pronouns with these phi-features (on French *on*, see Kayne 2010, Rezac and Jouitteau 2016).

- (42d) [Thorkel wants to divide his and Gisli's property; Gisli offers alternatives; Thorkel says:]
Ekki er undir, hvat um er talat, skipta skal ___ fínu at vísu. "It is of no importance, what is said about it, ___ [=we] must.1/3SG divide the property." (Gisl)

H-impersonals are most clearly pseudospecific when the context makes it clear that an atomic predicate applies to one person, or a collective predicate to two. When there are more persons, there is an ambiguity: an H-impersonal might apply to that specific group as pseudospecific, or range over the persons in the group as generic, as in (43a). In other cases, an H-impersonal may apply to a particular individual pseudospecifically, or to that individual and others generically, as in (43b). These ambiguities are often reflected in different translations, and often seem a deliberate feature of conversation style in the sagas.

- (43a) Hversu skal ___ nú með fara? 'How shall ___ [=one, we] now proceed with [sc. it]' (Nj)
- (43b) [Aud and Asgerd have been overheard talking of Asgerd's infidelity. Asgerd gives her plan once word gets to her husband: "To put hands around Thorkel's neck, when we come into bed, and he will forgive me this, and call it lies". Aud replies:]
Eigi mun ___ því einu mega fyrir hlíta " ___ [=one, =we, =you] will not be able to rely on that alone" (Gisl)

3.6 Ambiguities with referential pro

Since H-impersonals take 3SG inflection, they may be ambiguous with 3SG pro-drop. It is impossible to detect this ambiguity when an H-impersonal is pseudospecifically of a given person without speaker intuitions, since it then looks just like 3SG pro. However, the ambiguity is common on the generic use of H-impersonals as in (45); translations can reflect this ambiguity, as indicated for (45a), but often prefer the H-impersonal analysis despite the presence of a potential antecedent for 3SG pro, including (45c), (45d).

- (45a) Eigi þarf langt frá því at segja, vita megu þat allir hversu hræddr búandinn mundi vera er hann sá at Þórr lét síga brýnnar ofan fyrir augun; en þat er sá ___ augnanna, þá hugðisk **hann** falla mundu fyrir sjóninni einni samt. "There is no need to tell of it at length, all may know how frightened the farmer would be when he saw that Thor let his brows sink down before his eyes; and [sc. as for] that which ___ [=one, =he] saw.3SG of the eyes, **he** thought that he would fall before his look alone" (Gylf)
tr. Faulkes 2003: (as for) what could be seen of the eyes
tr. Brodeur 1916 tr: when he looked at the eyes
- (45c) var búit skip Ingimundar með farmi þeim, er **hann** kaus, ok því viðarvali, er bezt fekk ___.
"Ingimund's ship was prepared with that cargo which **he** chose, and with the best choice of timber which ___ [=one, =he] got.3SG." (Vatn)
- (45d) Nú fór svá mörgum, at gjørn var hõnd á venju, ok þat varð tamast, sem í æskunni hafði ___ numit. "Now it fared so with many.PL / many.a.one.SG, that hand was ready to habit

[sc. to resort to heathen customs], and that was most familiar, which __ [=he, one] had.3SG learned in youth" (Gr).

- (45e) Pollrinn var svá djúpr, þar er skipit flaut, at eigi kenndi __ niðr. "The pool was so deep, where the ship floated, that __ [=one, =it] did.3SG/PL not touch bottom. " (Laxd; Nygaard 1894: 14)

The 3SG inflection of H-impersonals is also often syncretic with 1SG or 2SG, giving ambiguities between these and pseudospecific H-impersonals like (41) or (44).¹³

- (44) en ef þú ert einn orðinn svá fávíss at eigi hefir __ þetta heyrt "but if you alone have become so lacking in knowledge that __ [=you] have.2/3SG not heard this" (Gylf)

The default analysis for (41) is an H-impersonal, since the IMC* is frequent, while 1SG pro-drop is isolated (Nygaard 1894: 4-5, 1906: 8-9, Kinn et al. 2016: sec. 3.4). 2SG pro-drop is also isolated, but in (44), it is the preferred analysis, because a pseudospecific H-impersonal would constitute a switch from direct (*you*) to indirect (*one*) reference, and this is difficult in a discourse-cohesive context like this (Rezac and Jouitteau 2016: ch. 5).

These ambiguities have an important effect on the study of referential pro. They decrease the already very low numbers of 1SG, 2SG, and 3SG animate pro. They also bleed potential counterexamples to SG. These matters are subjects of the next section.

4 Referential pro-drop

4.1 Types of referential pro and the oddity of OIc

4.1.1 *Introduction*

Referential pro in OIc is a silent argument with DP-like syntax and pronoun-like reference to a familiar referent.¹⁴ It is of considerable theoretical interest, brought out especially in Sigurðsson

¹³ Crosslinguistically, human impersonals tend to 1st person pseudospecific uses (including Germanic *man*-cognates like Nlc *maður*, H.A. Sigurðsson and Egerland 2009). This may be so in OIc as well; further clear examples:

- (ia) [Gunnarr under attack asks Halgerd to make him a bowstring, and Halgerd reminds him of having cuffed her and says that she does not care whether he lives longer or not.]
'Hefir hver til síns ágætis nokkut,' segir Gunnarr, 'ok skal __ þik þessa eigi lengi biðja.' "Each has something to their glory," says Gunnar, "and __ [=I] shall.1SG/3SG not ask this of you any longer." (Nj)
- (ib) [Thorgrim bids Geirmund go on an errand; Geirmund does not want to; Thorgrim cuffs him and tells him 'Then go now, if it seems better to you'. Geirmund answers:]
'Nú skal __ fara,' sagði hann, 'þó at nú sé verra.' "'Now __ [=I] shall.1SG/3SG go', said he, 'though now it is worse [sc.: even worse to go].'" (Gisl)

¹⁴ This description is assumed here as in other work for agreeing finite subjects; other grammatical functions are discussed below. To illustrate DP-like behavior, pro of all types studied here is frequently found with concurring predicates, as in (71b), (78a), (86a), (90a). As with H-impersonals and overt DP subjects, the object position test is useless, and there are both low objects, e.g. (91a), and ones fronted to the expected subject position, e.g.:

- (i) hann lét óvini sína þá eina landsvistina fá, þótt griða beiddust __ "he let only a few of his enemies get sojourn in

(1993) and Walkden (2014), because it does not fit theories of null argument systems and the systems on which they are based, surveyed in Holmberg and Roberts (2010): classical pro-drop (Italian), controlled pro-drop (Finnish), topic-drop (German), or discourse argument drop (Chinese). Here is first presented a review of these systems, how OIc pro-drop has been differentiated from or assimilated to them, and significant amendments to these conclusions. This leads to a series of studies into the most distinctive characteristics of OIc pro-drop, optionality with very low frequency and contextual limitation to exhaustive antecedence. These studies are relativised to particular environments, such as quantified versus referential antecedents, and reveal very different behaviors. Some such environments like quantifier-bound pro contribute to better understanding the major pro-drop system of OIc, while others like pro referring to weapons reflect distinct mechanisms. Only 3rd person pro is considered here and the term pro limited to it unless otherwise specified; 1st/2nd person pro is studied especially in Walkden (2014), Kinn et al. (2016), and here only raised as it bears on 3rd person.

4.1.2 Classical pro drop

In classical pro-drop, null arguments have the behavior of a weak/clitic pronouns and are licensed by agreement. The paragon of this type is Italian. The most obvious way in which OIc and other early Germanic pro differs from Italian pro is its optionality and very low frequency relative to overt pronouns (Sigurðsson 1993, Axel 2007: 6.3, Rosenkvist 2009, van Gelderen 2013, Walkden 2014: 5.3). Yet pro is also more available in OIc than in Italian, namely for relatively low-topicality antecedents (cf. Rusten 2013: sec. 8 on Old English).

In Italian, the situation is roughly as follows: pro is available as unfocused anaphor to a particular kind of salient familiar referent, the "aboutness topic" (Frascarelli 2007), and when available, it is mostly obligatory (Samek-Lodovici 1996, Cardinaletti and Starke 1999). In OIc, overt pronouns seem to be the typical anaphora under any conditions, and pro a rare alternative, but without restriction to aboutness topics. This description will be nuanced below for particular antecedents and structures, but elsewhere it appears true. The following pairs introduce it:

- (50) ...þá svǫruðu marginir, sǫgðu at heldr vildu __ falla með drengskap en flýja fyrir Dǫnum at óreyndu, sǫgðu at oft hǫfðu **þeir** sigr fengið þá er þeir hǫfðu barist við minna lið "then many answered, said that __ wished rather to fall with manliness than flee before the Danes without trying, said that **they** had often gotten victory when they had fought against a lesser host" (Hkr)
- (51a) Eptir þat fór Rǫgnvaldr jarl apr til Gautlands, ok at skilnaði veitti konungr jarli góðar gjafir ok stórar, ok skilðusk __ inir kærstu vinir ok heldu því, meðan **þeir** lifðu báðir. [chapter end] "After that earl Rognvald went back to Gautland, and upon parting the king gave the earl good gifts and great, and __ [=they] parted the dearest friends and stayed so, while **they** both lived." (Hkr; Nygaard 1894: 6)
- (51b) En er hann var í brot búinn, leiddi Erlingr hann út með vingjöfum, ok skilðusk **þeir** með kærleikum. "And when he was ready to sail away, Erling led him out with gifts of friendship, and they parted with affection. (Asbjorn got a good wind...)" (Hkr)

the land, though *quarter* asked.3PL __ [=though they asked for quarter]" (Hkr).

- (52b) [Passage describing the journey of a company for a sejour.] Riðu þeir austr yfir Markarfljót ok fundu þar snauðar konur, ok báðu __, at þær skyldi reiða vestr yfir fljót. Þeir gerðu svá. "They.M rode east over Markarfljot and found beggar women, and __ asked, that __ [=one] should carry them.F west over the river. They.M did so" (Nj)
- (52c) [Passage describing the expedition of a company to find a viking.] En er þeir kómu suðr til Helsingaborgar, fundu þeir þar bát einn ok menn á, ok sǫgðu **þeir**, at ... "And when they came south to Helsingaborg, they found there a boat and people on it, and **they** said, that (Kol was there and would be there for a while)" (Nj)

In (50), the same antecedent in parallel environments within the same sentence is picked up first by pro and then by an overt pronoun, without focus.¹⁵ (51) contrasts pro and pronoun as unfocused anaphora to a sum of two recent antecedents. (52) shows the same parallelism as anaphora to a familiar but not the most salient referent. (52) also shows that pro need not pick up the aboutness topic. Here this is the riders: they and their journey are what the passage is about, and the subject of preceding and following sentences. The beggar women are newly introduced in object position and not picked up after their request. This is a typical environment for a switch-topic anaphor, such as a strong pronoun rather than pro; in English a useful diagnostic is the availability of a demonstrative (Ariel 1990, Gundel et al. 1993, Huang 2000: 5.2; cf. Frascarelli 2007: 703).¹⁶

However, when we look at variants of classical pro-drop, the oddity of OIc is attenuated. Cole (2010) and Jimenez-Fernandez (2016) contrast Italian with Spanish, where pro is still mostly required for aboutness topics, but both pro and overt pronouns can pick up other familiar referents. Inversely, in Spanish the aboutness topic can sometimes be picked up by an unfocused overt pronoun when Italian needs pro (Filiaci et al 2013), with variation across Spanish varieties (Cameron 1992, Otheguy et al. 2007, Martinez-Sanz 2011).

The grammatical mechanisms underlying these differences largely need better study. A full optionality is expected if preference for pro to overt pronouns is inoperative. This proposal is

¹⁵ In particular, in the context *they* does not contrast with *Danes*, which would indeed license an overt pronoun in Italian, rather, the contrast is on fighting with even smaller numbers against other enemies.

¹⁶ This switch topic use of pro is well represented in the texts here (though its frequency cannot be quantified due to undercounting, section 4.3). It might be even better represented in manuscripts: it makes up 3/12 cases in Eg where pro is emended to an overt pronoun in Einarsson (2003). We will see below classical pro-drop systems like Spanish and Czech that allow pro to low-topicality antecedents; even in them, animate cases like (i) prefer switch-topic anaphora to pro. Another sort of low-topicality antecedent found several times is illustrated in (ii): a referent is picked by pro up after a stretch of other aboutness topics without reintroduction as such but through a related referent such as member of a plurality.

- (i) Gylfi sá mann í hallar durunum ok lék __ at handsǫxum... "Gylfi saw a man in the doors of the hall and __ played with hand-knives..." (Gylf)
- (ii) [The Skraelings barter with Karlsefni and Gudrid's expedition; a passage follows not mentioning the Skraelings about a supernatural woman visitor to Gudrid; Gudrid hears a noise, the woman vanishes,] ok í því var ok veginn einn Skrælingr af einum húskarli Karlsefnis, því at hann hafði viljat taka vápn þeira. Ok fóru __ nú brott sem tíðast, en klæði þeira lágu þar eftir ok varningr "and at the same moment was also slain a Skraeling by a housecarl of Karlsefnis, because he had wanted to take their weapons. And __ [= the Skraelings] went now away as quickly as possible, but their cloths and wares lay there behind." (Groen)

advanced in Cardinaletti and Starke (1999: 8.2) for Italian *pro* and *egli*-series pronouns, where both are weak pronouns neither of which is preferred by Minimise Structure. Walkden (2014: 5.3.4) similarly proposes that in early Germanic *pro* and overt pronouns both full DPs. However, Spanish has only partial overlaps of *pro* and overt pronouns, and we should like to know more about it since it is not obvious that in OIc there is simple optionality. Factors both inside and outside pronouns may underlie partial overlap. The former is illustrated by *egli* itself. While Cardinaletti and Starke give an environment where *pro* and *egli* commute, Samek-Lodovici (1996) finds that by and large this is not so, and Cardinaletti (2004: 4.1, 7.2) shows that *egli* differs from *pro* both in propensity for switch and reaffirmed topic use and elements of full DP morphosyntax. Czech illustrates factors outside pronouns: conditions on *pro* and overt pronouns are similar to Spanish and overt pronouns must usually be focused if *pro* is available, but requirements of theme-rheme articulation and rhythmical preferences allow and even require unstressed, unfocused, "filler" strong pronouns (Mathesius 1947, Zimová 2008).

These are all classical *pro* systems and they show that there may be a great deal more space for an apparently optional *pro* in them than would have seemed. However, *pro* remains the rule in them as unfocused anaphor. This is not so in the cohesive *pro* systems discussed next, which seem particularly interesting for OIc.

4.1.3 *Controlled and Cohesive pro*

Controlled *pro* refers to *pro* licensed by a syntactic dependency to its antecedent, usually a species of control: see Holmberg and Sheehan (2010), with further literature. Thus the antecedent-*pro* relationship should be constrained at least by the common conditions on control, mostly shared with local anaphora and movement (Borer 1989): the antecedent should be *superordinate*, defined as argument of a minimal clause that contains the *pro*-clause, and antecedent *pro* *exhaustively* rather than partially, save to the limited extent that partial control exists. These have been argued to be conditions of *pro* in languages like Finnish.

OIc *pro* is clearly not all controlled *pro*: nonsuperordinate antecedence is common, (51), (52), and so is split antecedence, (52). Other relevant configurations are detailed in Nygaard (1894: 7-11), including (55a) with *pro* in a subordinate clause anaphoric to an antecedent in a distinct root clause, and (55b) with *pro* in a matrix clause anaphoric to an antecedent in an adjunct. Exhaustive antecedence is according to SG a constraint on *pro* outside topic-drop environments, but that includes cases like (55a) where it cannot be accounted for by controlled *pro*.

(55a) ok var blánaðr annarr eggteinninn, ok sǫgðu vit Bárðr at dignat mundi __ hafa "and one edge was blackened, and Bard and I said that __ will have softened" (Nj; Nygaard 1894: 10)

(55b) en ef nokkurr er sá þá eigi þar kominn, er í mál þessi hefir gengit, þá skal __ engu fyrir týna nema lífinu "if there is someone not come then who has gone in on this agreement, then __ shall lose nothing except his life." (Nj; Nygaard 1894: 10)

Recent work has questioned whether Finnish actually fits the expectation of controlled *pro*. This issue has long been known for Hebrew. In Hebrew *pro* has been described and analysed as syntactically controlled (Borer 1989, Landau 2004). However, Ariel (1990: 6.1) has shown there to be both nonsuperordinate and split antecedents, very much like those in OIc (cf. Gutman 2004,

Melnik 2007). Ariel develops a theory where discourse cohesion predicts that *pro* prefers certain superordinate antecedents (e.g. *pro* in adverbial but not complement clauses) and easily allows some nonsuperordinate antecedents (e.g. across independent clauses in function of cohesive adverbs). Finnish may be similar (Brattico 2016, Holmberg 2016), though more restrictive (Gutman 2004). However, Ariel's approach has not been applied to these new findings; rather, Brattico (2016) proposes both controlled *pro* and topic-anaphoric *pro*.

The term *cohesive pro* is used here in reference to *pro*-drop in Hebrew and Finnish, where certain control-like environments are preferred, but not all are, and are not the only possibilities. Both systems differ from classical *pro* in not generally preferring *pro* to overt pronouns (Samek-Lodovici 1996 on Hebrew; Holmberg 2016 on Finnish), though *pro* is preferred in certain environments like adverbial clauses (Holmberg 2016) and unrestricted quantifier antecedents (Holmberg 2016), and when *pro* is preferred it is not restricted to the aboutness topic (Brattico 2016). To evaluate the suitability of cohesive *pro* for OIc, we need a study of its frequencies across environments. This is begun below. It does find parallels in OIc to the preference conditions of Finnish and Hebrew *pro*, though there are also findings like switch-topic uses (52) and a preference for inanimates are not known to have parallels.¹⁷

4.1.4 Discourse argument drop, topic drop, and object *pro*

The remaining null argument systems are discourse argument drop and topic drop. They are both the bases of H.A. Sigurðsson's (1993) analysis of referential *pro*-drop in OIc. However, the features currently thought to characterise discourse argument drop do not fit OIc. One is agglutinative structure for pronouns (Neeleman and Szendroi 2007); Walkden (2014: 5.3.3) shows it not to be a property of OIc. Another is the systematic availability of sloppy readings for pronouns and quantifiers (Tomiooka 2003); this too does not seem to be a property of OIc *pro*.¹⁸ One of the major original motivation for invoking discourse argument drop for OIc, exhaustive antecedence, is shown below not to be a property of discourse argument drop at all.

Topic-drop is found in NIc (H.A. Sigurðsson 1992: 5.2.5, 2011, H.A. Sigurðsson and Maling 2008 for NIc.). Topic drop is limited to a single argument drop per root CP, where the "left edge" of the CP must be "empty" and accessible to the dropped argument by a movement dependency,

¹⁷ This description does not consider the best-studied aspect of Hebrew and Finnish *pro*: unlike 3rd person *pro*, 1st/2nd person *pro* is systematically available, whereas in OIc it is more rare than 3rd person. This is one of the two elements that leads Walkden (2014: 5.3) to a theory where early Germanic *pro* is the mirror-image of Finnish. The other is absence of *pro* in subordinate clauses, which is not a feature of OIc (section 5). On most approaches including Walkden's, building on Sigurðsson (2011), the mechanism of 1st/2nd person *pro* licensing in Finnish/Hebrew-type languages is distinct and so separable from 3rd person *pro* licensing.

¹⁸ This needs more study. Sloppy readings are found for definites, pronouns, and classical *pro* on so-called E-type uses, with many restrictions. In the present corpus, (i) may be such an E-type case, or an H-impersonal; in legal language, q.v. section 3, (ii) has been found and does not have an E-type paraphrase in English.

- (i) Helt Ragnfrøðr sínu liði suðr um Stað, því at hann óttaðisk landher, ef drifi __ til Hákonar jarls. "Ragnford brought his force south round Stad, because he feared a land-army, if __ [=it/one, =people] flocked to earl Hakon." (Hkr)
- (ii) Til þeirrar kirkju skal lík færa er biskup lofar gröft að. Búandi er skyldur að ala þann mann er lík færir til kirkju með fimmta mann og hross eða eyk ef þeim fylgir. "__ [=one] shall transport a body to the church that the bishop allows burial at. A farmer is obliged to feed the man who transports a body to a church with four persons and a horse or a beast of draught if __ [=any, one, ?it] accompanies them." (Grágas 2)

and the dropped argument must have a certain salience. These conditions are shared by phenomena that differ otherwise in ways not fully understood (op.cit., Haegeman 2013, and section 5). It is possible that some OIc pro-drop is topic drop, but its formal and likely stylistic conditions severely limit what pro-drop it can account for. It is at any rate hard to detect.¹⁹

A characteristic of both discourse argument drop and topic drop important to H.A. Sigurðsson's (1993) proposal is their availability to nonagreeing arguments. In OIc it does frequently look as if the object of verbs and prepositions is silent (Nygaard 1906: §18-27). However, we do not know how far this reflects a syntactically projected DP/NP of the sort that underlies referential null subjects. One alternative is thematic frame alternations of the sort *Mary ate (it)*, *She fell off (it)* (Kinn et al. 2016: 34n2; cf. e.g. Boer 1900: 95n, Jónsson 1908: 229n). Another is predicate ellipsis with verb raising (Holmberg 2001 on Finnish). These are rarely confounds with silent subjects, save for thematic alternations with L-impersonals that are an issue for 3SGN silent subjects, as discussed for *weapon pro* and *ce pro* below.

There are rare cases where a syntactic dependency indicates a DP-like null object and the VP is otherwise intact. In (58a), there is a concording secondary predicate, which is a good test for silent DPs (Rizzi 1986, Landau 2010, Legate 2014). In (58b) the silent object is moreover an ECM subject, usually excluded from thematic alternations (Reinhart and Siloni 2004).

(58a) Mörðr nefndi sér vátta ok bauð þeim Flosa ok Eyjólfí at ryðja kviðinn. Þeir gengu til at ryðja kvið ok hugðu at ok gátu hvergi __ rengðan "Mord named himself witnesses and asked Flosi and Eyjolf to challenge the inquest.MSG. They went up to challenge the inquest, and reflected thereon, but got __ challenged.MSG nowhere [sc. managed to challenge no witnesses that Mord had named]" (Nj)

(58b) Eymundr konúgr ... lét vera eptir 6 menn í mörkinni, at gæta hesta sinna, ok láta __ búna vera... "King Eymund ... let 6 men remain behind in the wood, to watch his horses.MPL, and let __ be ready.MPL" (Þátrr Eymundar ok Ólafs konúgs)

If only secure cases like these are admitted as object pro in OIc, it might fit the profile of object pro in NIc, namely topic-drop and parallel-antecedent object drop (Rögvaldsson 1990). These should not be linked to subject pro, since the latter is missing in NIc. If, on the other hand, object pro-drop is posited without these grounds, it turns out to pose problems for theories of subject pro that have relied on it. For H.A. Sigurðsson (1993), object pro like subject pro is subject to SG, but this is not the case in (59a): the object is outside a topic-drop environment yet has no antecedent. For Walkden (2014: 5.3.4), there can be only one of subject or object pro per minimal clause, but the two combine in (59b).

(59a) Þar hafði komið hvalr er hann átti (__) í "There had come a whale that he had __ [sc. share] in" (Laxd; Nygaard 1894: §21 with this analysis)

(59b) Einarr þambarskelfir fór með líki Magnúss konungs ok með honum allr Þrændaherr ok fluttu __ __ til Niðaróss. "Einar thambaskelfir went with the body of king Magnus and

¹⁹ Given the typical modern uses of topic drop, we should look for it above all in the laconic conversations typical of the sagas, where it would seem suited for non-imperative/hortative 1st/2nd person drop. However, its formal limits leave out of its scope a good number pros that are clearly 1st/2nd person (e.g. the 2 in the portion of Gr in IcePaHC, 3/7 of those repertoried in Nygaard 1894: 4-5), or ambiguous with H-impersonals (e.g. (41), (44)).

with him all host of the Throendir and ___ conveyed ___ to Nidaros." (Hkr; Nygaard 1906: 17)

4.1.5 SG

H.A. Sigurðsson (1993), extending Hjartardóttir (1987), proposes that OIc referential pro is restricted by a generalisation that may be stated as follows (cf. partly Nygaard 1894: 8n1):

SG: Referential pro without an exhaustive overt antecedent is limited to topic-drop environments (Hjartardóttir 1987: to root clauses).

SG is of central importance in the study of OIc pro-drop, because it seems unparalleled elsewhere, because it motivates a distinctive theory in H.A. Sigurðsson (1993), and because it has been challenged in Kinn et al. (2016). We will see that the challenge may leave a version of SG intact but unproven, and that a new explanation is needed which may lie in cohesive pro.

The chief empirical basis of SG has been the distribution of 3PL animate pro. In potential topic-drop environments, 3PL pro may denote a plurality that has an exhaustive overt antecedent in (52) above, but also the sum of split overt antecedents in (51); a contextually salient plurality, usually the associates of an overt singular antecedent in (61a); or the members of a singular collective in (61b). Outside topic-drop environments, SG allows 3PL pro to be only be the first of these. Each type is well attested (cf. Nygaard 1894: 6-7, 11; in Eg, out of about 25 clear cases of 3PL animate pro in topic-drop environments, 12 are exhaustive, 7 sum, 4 associates, 2 members).

(61a) ok jafnskjótt bjósk konungr sem skyndiligast ok gekk á skip fjögur ok reru ___ inn eptir firðinum "and immediately the king prepared as quickly as possible and went on four ships and ___ rowed.3PL along the firth" (Eg)

Infered (associates)

(61b) Svá mikít gerðu menn sér um at vingask í allri umræðu við Ólaf konung, at mestr hluti manna vildi eigi heyra, at hann mundi fallit hafa, nema létu ___, at hann var í Vindlandi "So important did people consider it to be friendly in all discourse about king Olaf, that the greatest part of people did.3SG not want to hear that he had apparently fallen, but pretended.3PL ___ that he was in Vindland" (Fagrskinna, Nygaard 1894: 7)

Infered (members)

All these uses of 3PL pro have parallels in 3PL overt pronouns, illustrated in (51) above. However, overt pronouns are not restricted by SG:

(61a) þá sótti fram Þorsteinn í móti Bolla, ok þegar þeir fundusk... "Then Þorstein came forward against Bolli, and as soon as **they** met..." (Laxd)

Split antecedence

(61b) Þetta sumar, er nú var frá sagt, kom skip út fyrir þing á Gásam. Var þá sagt frá ferðum Grettis; þar með sögðu þeir um húsbrennuna. "This summer, that has now been told of, a ship came out before the assembly at Gasir. Then Grettir's journeys were told of [sc. by the shipmen]; and therewith **they** [sc. the shipmen] told of the house-burning." (Gr)

Infered

SG is a theoretical conundrum. H.A. Sigurðsson (1993) proposes to account for SG by adopting C.-T. J. Huang's (1984) theory of discourse pro-drop in Chinese, whereby a silent

argument needs an overt exhaustive antecedent. However, discourse argument drop in Chinese has turned out to allow split antecedence (Ariel 1990: 125, Y. Huang 1994: 36-7). Discourse anaphora and other dependencies unconstrained by intervening syntactic structure are mostly supposed to require only denotational compatibility. However, even when such dependencies are given a formal identity requirement, notably theories of NP, VP, and TP ellipsis, it allows split antecedence (Elbourne 2005, Merchant 2016).

In the material studied here and other studies so far, SG hold for both 3SG and 3PL animate referential pro. Most apparent counterexamples have good H-impersonal analyses discussed in section 3. Kinn et al (2016: 70) show that SG does not hold in Old English and Old Swedish for 3PL animate pro. Their counterexamples involve so-called arbitrary 3PL (Cabredo-Hofherr 2003, 2006, Siewierska and Papastathi 2011). It does very rarely occur in OIc, (62a), beside overt (62b). (62a) does indeed violate SG on Sigurðsson's (1993) though not Hjartardóttir's (1987) formulation.²⁰ However, we cannot draw conclusions directly from conditions on 3PL arbitrary pro about other referential (animate) pro: Cabredo-Hofherr (2006) shows that the two have distinct licensing conditions and the former may be available when the latter is not.

(62a) 'Sigurð kalla __ mik', segir hann. "(Then earl Eirik approached and asked: 'who is this fair man?')' __ [=they] call.3PL me Sigurd', says he." (Hkr)

(62b) [Kol kills Svart at Hallgerd's instigation and tells her.]
Nú koma **þeir** upp í skóginn ok finna Svart dauðan ok flytja hann heim. "Now **they** [sc. other people] come up into the wood and find Svart slain and carry him home" (Nj)

Clear counterexamples to SG with 3rd person animate pro have not been found.²¹ However, we do not know how robust this finding is without knowing the expected frequency of

²⁰ In the present saga corpus, no null arbitrary 3PL has been noted, save for (ia), in the legal-formulaic passage Tryggðarmál of Gr known, q.v. section 3; its analogue (ib) in legal codes suggests a 3PL arbitrary pro, but (ia) itself is also analysable with *öllum* as antecedent. Examples of non-SG-violating pro with "complete absence of an antecedent" in Sigurðsson (1993: 252), Nygard (1894: 11) are not arbitrary 3PL of the type studied in Cabredo-Hofherr (2003), and indeed have split or partial antecedents in the larger context.

(ia) svá frá öllum út flæmðr sem víðast varga reka __ "and so from all to be put to flight where __ most widely drive.3PL outlaws [sc. as wide as wolves are driven]" (Gr)

(ib) ...sem **menn** víðast varga reka "where **people** most widely drive.3PL outlaws" (Grágas cit. ONP)

²¹ The closest exceptions to SG met in this study are in (i, ii). Among animates, in (ia) the silent subject may be a *ce* pro 'it, that', and anaphoric to the silent subject of the preceding ECM, as discussed below, or else have as antecedent the predicate bare NP *mann*. In (ib), the silent subject may be anaphoric to the same concept though not the same individual as Kaupa-Hedin (Heim 1998, Elbourne 2005).

(ia) Hón sagðisk eigi vita, hvárt hana hefði yfir flutt maðr eða troll. Prestr kvað (__) mann víst vera mundu, – "þó at fára maki sé __ "She said she did not know, whether a man or a troll had carried her over. The priest said (__) [=it] to have clearly been a man, though __ be match of few [sc. though few be his match]." (Gr)

(ib) [Hoskuld and company ask Hrut who had come to his house, suspecting Gunnar]
Hann segir: 'Hér er Kaupa-Heðinn.' Hoskuldr segir: '*Breiðari* mun __ um bakit: ek get verit munu hafa Gunnar frá Hlíðarenda.' "He says: 'Kaupa-Hedin is here'. Hoskuld says: ' __ will have been broader.MSG of back [sc. more important]: I guess it will have been Gunnar of Hlíðarenda.'" (Nj)

nonexhaustive antecedence of pro outside topic drop environments if SG did not hold. That has not been determined.²² It seems likely that the number of 3PL pro outside topic drop environments is too small to test SG. To illustrate from the two texts studied below for pro: in Eg, of 26 3PL clear animate pros, all but 2 are in topic drop environments; in Gylf out of 4 only 1 is. Eg also reveals the fragility of such low numbers. In Eg, Einarsson's (2003) edition shows 6 further 3PL animate pros that are not counted here because they have been emended to overt pronouns in this and other editions, all involving rare but not unparalleled pro-drop patterns (cf. Nygaard 1894: 8n, 10). One of these is a candidate for SG violation, though analysis as cataphor also needs to be considered:²³

- (65) ...þá reið h^{ann} ofan m^{eð} ecki lið t^{il} fundar v^{ið} víkínga · en er __ funduz þá fóru þar allt vel ræður m^{eð} þei^m... "then he rode down with no host to meet with the vikings. And when __ met, then talks went very well with them..." (Eg, ms. AM 132 f. 78v at <http://handrit.is>, abbreviations expanded in superscript)

To the extent that SG holds, it needs a new explanation. Empirically, it recalls the resistance to split antecedents by pro in Finnish (Holmberg and Sheehan 2010: 141, less strict than for PRO) and Hebrew (Gutman 2004, ex. 8-11, where genuinely good cases are known).²⁴ Two theories have been proposed. For Gutman (2004), split antecedent pro is grammatical in Hebrew, but use of pro rather than an overt pronoun is modulated by pragmatic factors like cohesion, and pro with split antecedents in particular is favoured by the high availability of group readings. For Brattico (2016), the controlled pro relation of Holmberg and Sheehan (2010) is a component of pro licensing in Finnish, but pro can also behave like a regular pronoun in picking up salient topics, with more marginal goodness. Either approach is a candidate for deriving SG. It remains unclear whether the empirical status of SG favours a cohesive pro analysis of the major system of OIc pro.

The discussion of SG so far has been limited to animate pro, where SG was originally motivated. It also holds of inanimate pro not referring to weapons or abstracts, which seems like a very odd category. There are indeed clear counterexamples to SG from weapon and abstract or *ce* pro, but there is also good evidence these are distinct subsystems of pro.

Among concrete, nonabstract inanimates, in (iia) there seems to be a pro referring to an inferred sip, but one cannot exclude an impersonal passive of transitive *koma* 'bring' with omission of the dative object. In (iib), there seems to be pro referring to an inferred drink, but then agreement should be feminine with *drekka* 'drink' (the drink-referring word in the larger context) or masculine with *drykkur* 'drink'; rather, *bera* 'bear' may be objectless.

- (iia) Eigi er sopit, þó at í ausuna sé __ komit "It is not sipped, though __ has come.NSG into the ladle" (Gr)

- (iib) Ekki vildi hann drekka þó at honum væri __ borit "He did not want to drink though __ was brought.NSG to him" (Eg)

²² To illustrate, consider concessive *þó at*, *þótt* 'though' clauses in Hkr, Thidr, Eg, Gylf, G, with as overt subjects 3rd person human pronouns with matrix antecedents. There are 55 cases of exhaustive antecedence, 2 split, 1 associate, so 1 : 18 SG violations. There are only 9 corresponding cases with pro subjects; all are exhaustive, but this does not meet the threshold for confirming SG. However, we cannot extrapolate expectations from overt pronouns to pro without know how other factors affect their proportions, such as discourse cohesion or degree of salience, any more that we could extrapolate this for *they* from facts about *these*.

²³ Kinn et al.'s (2016: 70) SG-violating arbitrary 3PL pro in Old English is also traditionally emended.

²⁴ The Finnish and Hebrew studies both involve pro with superordinate antecedents.

4.2 Weapon pro

Kinn et al. (2016: 56-60) have raised a convincing challenge to SG as a constraint on all referential *pro*. Most counterexamples are discussed below as *ce pro*. The remaining example is (70a), where *pro* must refer to a concrete weapon; another clear case is (70b).

(70a) Og í því kom Finnbogi að og leggur til Jökuls svo að þegar stóð __ í beini "And in that moment Finnbogi came and struck Jökull so that __ [sc. the weapon] immediately stuck in Jökul's bone." (Finnboga saga ramma cit. IcePaHC; Kinn et al. 2016: 56)

(70b) En er Atli skaut at honum, þá fló __ æ fyrir ofan eða neðan "But when Atli shot at it [a squirrel], then __ [sc. the shot] flew always below or above". (Hkr; Nygaard 1894: 10)

These examples belong to a domain of *pro* whose frequency is so outstanding that it needs a distinct theory: *pro* referring to weapons or their strikes, henceforth *weapon pro* (esp. Nygaard 1894: 11, also Heusler 1950: §460.4, Hansen 1952: ch. 6). Typical cases are:

(71b) hann skaut niðr við skildinum svá fast, at stóð __ í vellinum [variant ms.: ...skildinum, svá at *fastr* stóð __ í vellinum] "he thrust down the shield so hard, that __ stood in the ground [variant ms.: the shield.M, so that __ stood *fast.M* in the ground]" (Nj)

(71c) ok hjó til hans með sverði. Kári brá við flötum skildinum, ok beit __ ekki á [variant ms.: ...ok beit **sverðit** ekki á]. "and struck him with a sword. Kari parried with the shield flat, and __ did not bite on thereon [variant ms.: and **the sword** did not bite thereon]." (Nj)

Three corpora have been studied for weapons *pro*: "combat passages" in Nj (5 chapters and other excerpts representing about 1/10 of the saga), likewise in Laxd (about 1/20 of the saga), and Eg (entire). All null or overt pronoun anaphora were counted in three categories: to animates; to inanimates; and to weapons with stereotypical and other predicates, as discussed below. Weapons but not animates also have several full definite anaphora as in (71), as well as one demonstrative, but these were not counted here.

Table: Weapon pro : overt pronoun²⁵

	Weapon stereotyp.	Weapon other	Concrete inanimate	Animate
Nj (combats)	30 ^[+5] : 2 ⁽⁺²⁾	0 : 0	1 : 1	0 : ∞
Laxd (combats)	7 ^[+1] : 0	0 : 0	1 : 1 ⁽⁺¹⁾	3 (all 3PL) : ∞
Eg (all)	11 ^[+3] : 0	0 : 3	12 (1 PL) : 6	29 (26 3PL) : ∞
Eg (<i>at</i> consecutive)	5 : 0	0 : 1	1 : 1	0 : ∞
Eg (coordinate)	9 : 0	0 : 2	4 : 3	26 : ∞

Table resumes the ratios of pro to overt pronouns. With animates the ratio is well < 1 : 10, matching the findings below. Inanimates are only a couple in the Nj and Laxd corpora, but below they will be seen to be at about parity overall, and at any rate 2 : 1 in Eg. With weapons, pro is extremely high overall and nearly exceptionless with "stereotypical" predicates defined below. These asymmetries remain when environment is controlled for, shown from Eg with consecutive *at* 'that' clauses with subject anaphoric to matrix antecedent, and coordinate clauses with subject of the second clause anaphoric to an argument of the first.

The chief issue to address about examples like (71) is whether there is indeed a referential pro or rather the quasiargument of L-impersonals (a worry raised for (70a) by a reviewer of Kinn et al. 2016: 60n12). In one case, referential pro is capable of direct proof, (71b) with *fastr* 'fast.M' thanks to its masculine concord with the antecedent *skildinum*. For the rest, only predicates have been counted that do not have independent L-impersonal uses on the relevant syntax and meaning. All combine not only with pro, but also with subjects denoting concrete weapons like *sverðit* 'the sword', and a few also with subjects denoting weapon impacts like *höggit* 'the strike': see e.g. *bíta á* in the two variants of (71c), *standa í* in (73a) vs. (71b), *koma í* in (73b). The bulk of predicates found with weapon pro is variants of *koma* + PP 'come into, etc.' (36/48), the rest one or two occurrences of a variety of predicates that shows productivity: *bíta* 'bite', *fljúga í* 'fly into', *fljúga í gegnum* 'fly through', *ganga upp á* 'go in', *ganga út* 'go out', *nema staðar* 'stop', *reista* 'carve', *standa í (fast)* 'stand (fast) in', *sökkva* 'sink', *taka í sundr* 'take asunder', *ydda* 'stick out', *vera fast* 'be fast', possibly *hrjóta* 'be flung', plus *kljúfa í* 'cleave into', *hlaupa* 'leap', *ganga í gegnum* 'go through', which have weapon pro subjects through conjunction reduction with one of the other predicates.

Most of the predicates with weapon/strike anaphora as subjects are stereotypical for the action of a weapon in combat, including all those above. With these, there are only 2 overt pronouns to 48 pros. Both occur in (73a), and questions may be raised about the stereotypicality

²⁵ Here and below in counts: ∞ indicates that overt pronouns are in the hundreds and count has gone only far enough to ensure that the number is well more than 10x that of corresponding pro. ^[+n] reflects *taka af* 'take off', which is excluded from the following discussion: it may be an L-impersonal based on its other uses, and it rarely occur with an overt weapon/strike subject, as *höggit tók af síðuna* "the strike took off the side" (Króka-Refs saga); there are 3 violations of SG in this corpus and all with *taka af*. ⁽⁺ⁿ⁾ reflects *þat* 'it, that', ambiguous between pronoun and demonstrative; these cases are excluded from the following discussion. Moreover, neither pro nor *þat* is counted in a several of equative structures of the type *Hrútr hjó til Ásólfis, ok varð þat banahögg* "Hrut struck at Asolf, and it/that was a deathblow" (Nj), where *þat* is predominant (section 4.3); these clearly follow a different pattern, arguably reflecting a *ce* pro with abstract reference. Potential conjunction reductions have been excluded, as discussed in more detail later for animate pro.

hrjóta 'be flung', and the contrast 'sword' - 'axe'; there is a clear role for contrastive focus in the choice of pronoun in (73b). The 3 remaining overt pronouns are found with a non-combat-related predicates: 'come up' after being cast in water, 'lie' in a place, 'be hair-sharp' describing axe as a gift; inversely, none of these non-combat-related predicates take *pro* as subject.

- (73a) Gunnarr skaut svá fast niðr skildinum, at **hann** stóð *fastr* í jorðunni, en tók til sverðsins svá skjótt, at eigi mátti auga á festa, ok hjó með sverðinu, ok kom ___ á höndina Hallbirni fyrir ofan úlflið, svá at af tók ___. Skammkell hljóp á bak Gunnari ok hæggr til hans með mikilli øxi. Gunnarr snerist skjótt at honum ok lýstr við atgeirinum ok kom ___ undir kverk øxinni, ok hraut **hon** ór hendi honum út á Rangá. "Gunnar thrust down the shield.M so hard, that **it**.M stood *fast*.M in the earth, and took to the sword so quickly, that one could not fasten the eyes thereon, and struck with the sword, and ___ came on Hallbjorn's hand above the wrist, so that ___ cut off [sc. the hand]. Skamskel leapt on Gunnar's back and struck him with a great axe. Gunnar turned to him quickly and strikes with the halbeard and ___ came under the horn of the axe, and **it**.F flew out of his hand out in Ranga." (Nj)
- (73b) Hann skaut til hans, ok kom ___ í stykkit, er hann vó upp ór katlinum, ok datt **þat** í ösku niðr. Hann leggr **skeytit** niðr hjá sér ok mataðist sem áðr. Án skaut ör annarri, ok kom **hún** í diskinn fyrir hann, ok fell **hann** í tvá hluti. Þessi sat ok gaf engan gaum at þessu. Þá skaut Án inni þriðju, ok kom **sú** í knífskeptit, er aprt stóð ór hendi honum, ok fló heptit í tvá hluti. "He shot at him, and ___ came into the piece.M that he had lifted out of the pot, and **it**.M fell down into the ashes. He lays the missile down beside him and ate as before. An shot another arrow.F, and **it**.F came into the dish.M before him, and **it**.M fell in two pieces. The other sat and gave this no heed. Then An shot the third time, and **that**.F came into the knife-handle, which stood out of his hand, and the haft flew into two pieces." (Áns saga bogsveigis)

The behavior of weapon *pro* especially with stereotypical predicates is like an island of classical *pro* in an otherwise different *pro*-system. It is moreover consonant with classical *pro* behavior that SG does not hold for weapons *pro*. Two theories are briefly sketched: grammatical and extragrammatical.

A grammatical account should start from the observation that weapon *pro* matches the lexical gender of the antecedent if there is one, as seen from the concord of *fastr* in (71b), like anaphoric pronouns and definites, and unlike the default-gender quasiargument *pro* of L-impersonals. The locus of lexical gender is the NP (nP), so pronouns – including *pro* – have a NP (nP) silent under identity with an overt or inferable antecedent, within a pronominal D-layer (Elbourne 2013). We want to have a type of pronouns with classical *pro* behavior but limited to reference to weapons or strikes. Let us suppose that the silence of classical *pro* follows because its pronominal D-layer is silent, and that it beats overt pronouns because its D-layer is poorer in content than theirs (Cardinaletti and Starke 1999). The limitation of *pro* to weapon reference can be implemented by conventionally associating this poor silent D-layer with certain lexical Ns like *øx* 'axe.F'. Because the set of Ns is limited, inferring an antecedent for them may be easier than for ordinary pronouns, as in (70) where English easily allows definites like *the strike* but not the pronoun *it*.²⁶

²⁶ Indeed traditional descriptions put such cases in a class of anaphora to familiar but not necessarily overt referent, distinct both from L-impersonals and from *pro* anaphoric to overt antecedents (Nygaard 1894: 11, Heusler 1950:

This analysis makes use of a conventional association between a particular the D-layer and a particular lexical NP, and so makes weapon pro idiomatic. Such idiomatic D-NP association is common (e.g. British *hospital* for American *the hospital*; bare kind singular *Man* but not *Human*, *Animal*). Within pronouns, parallels may be found in idiomatic uses of pronouns that do not need an antecedent, such as *it* for *sex* (OED s.v. *it* 1e-g; cf. Tic Douloureux 1971). It is difficult on this approach to incorporate a restriction to stereotypical predicates: the weapon pro DP would need to be selected by predicates like 'bite', yielding an unusual or impossible constructional idiom where the external argument is one of a fixed set but the internal argument is free.

An alternative extragrammatical analysis would appeal to conventions affecting linguistic objects but outside grammatical competence, such as the culture-, register-specific politeness convention of putting 1st person last in coordinations. Weapon pro might be ordinary pro prevalent because of a taboo-like and possibly register-specific convention to avoid overt pronouns for reference to weapons with stereotypical predicates, resulting in overrepresentation of pro and full definites as anaphora. A partial parallel is avoidance of 1SG in certain academic styles, in favour of otherwise less frequent strategies, including passives, *one*-impersonals, authorial *we*, editorial *we*, and full definite *this author*, though there is no report where avoidance targets 1SG overt pronouns but not pro (see e.g. Harwood 2005, Breitkopf 2009, and generally Mühlhäusler and Harré 1990, Wales 1996: ch. 3). On this view weapon pro is not grammatically an island of classical pro in OIc, but it may have originated so, as discussed in section 5.

Both the extragrammatical and grammatical analyses of weapon pro are unusual as theories of referential pro, but so is weapon pro. Its analysis has consequence for theories of linguistic conventionalisation and its diachronic emergence that are taken up in section 5.

4.3 Ce-pro

Other than (70a), the remaining 4 counterexamples to SG found in Kinn et al. (2016: 56-60, ex. 6-10) involve what a reviewer calls "an impersonal arbitrary reading, 'something unspecified', or even a vague reading that comes close to being expletive" (Kinn et al. 2016: 60n12). Here it is tentatively suggested that the null subject is a referential pro at least in some cases, as Kinn et al. (2016) analyse it, but that it may well be special pronoun, with crosslinguistic parallels.

OIc L-impersonals such as (10) or (3) sometimes have translations with a quasiargumental *it*: it is idiomatic, does not need a contextually supplied antecedent, and does not commute with other anaphora: *When **it**/*that came to the point....* Regular anaphoric *it* can be superficially similar when it refers to abstracts of various sorts, such as events, facts, and propositions (Asher 1993: ch. 6, Cornish 1992, Hegarty 2003): *The wound is still bleeding; if **it** comes up, say that **it** will stop.* In English *it* on this use is syncretic with quasiargument *it*, but this need not be the case. In French, 3SGM *il* is quasiargumental, but abstract reference needs *ce/ça*, a phi-invariant element whose other uses are mostly those of a *that*-like demonstrative (Kayne 1984: ch. 10, Zaring 1994, and further below). Other languages also make such distinctions: in Czech 3SGN pro is obligatory for quasiargument but the 3SGN demonstrative *to* for abstract reference (cf. Progovač 1998).

In OIc, abstract reference appears frequently with null subjects; let us call this *ce* pro (cf. Nygaard 1894: 12, 18-20, Heusler 1950: 461.4, Hansen 1952: ch. 4). It proves difficult to

§460). Most other cases in this class refer to abstracts discussed below under *ce* pro with NSG agreement, but *standa i beini* 'stand in the bone' in (70a) should need a concrete weapon as subject and indeed overt ones always are so.

securely distinguish abstract reference from L-impersonals, but examples like (77) are good candidates, because *pro* alternates with overt *þat* 'it, that', *þetta* 'this'.

- (77a) ok sagði honum allt sem farit hafði með þeim konungi ok spurði ef hann vissi nokkut til hverju __ gegndi "and told him all, how it had gone with him and the king, and asked if he knew somewhat what __ [=it] meant". (Eg)

þá fann hann at spillt var slæðunum ok leitaði þá máls um við Ásgerði hverju **þat** gegndi "then he found that the robes had been damaged and sought a talk about it with Asgerd, what **it/that** meant" (Eg)

- (77c) ok kom höggit í höfuð honum, ok varð __ mikit sár "and the blow came in his head, and __ [it] was a great wound" (Hkr)

ok kom øxin á fót honum, ok varð **þat** mikit sár "and the axe.F came on his foot and **it/that.N** was a great wound" (Laxd)

- (77d) [Messengers made Adalstein accept the fostering of the son of Harald, and sailed back] ok kómu apr til Nóregs á fund Haralds konungs, ok líkaði __ honum nú vel, þvíat þat er mál manna, at sá væri ótígnari, er öðrum fósttraði barn. "and came back to Norway to meet king Harald, and __ [sc. the fostering-situation] pleased him now well, because it is a common saying that he is less noble who fosters a child for another." (Hkr)

Knútr konungr spurði þetta, at Egill hafði enn verit í hernaði um sumarit, ok líkaði honum **þat** illa, þvíat hann bannaði mönnum rán ok óspekt í ríki sínu. "King Knut learned this, that Egil again again been harrying over the summer, and **it/that** pleased him ill, for he forbade people plundering and tumult in his dominion." (Knýtlinga saga)

Ce pro controls 3SGN agreement, which can give it away even when there is a potential antecedent:

- (78a) heyrðak áðan læti kýnlig. Hverju var __ *líkast?* "I heard a little while ago strange noises.NPL. What was.3SG __ sc. what you heard] most *like*.NSG?" (Hreiðars þátr; Nygaard 1894: 11 with this analysis)

- (78b) Auðsýnt er nú at hann vill þessi tíðindi vita þótt oss þykki __ eigi *fagrt* at segja. "It is obvious now that he wishes to know these tidings.NPL though __ [sc. what you want to know] do.3SG/3PL not seem to us *fair*.NSG to say" (Gylf)

French *ce* and its counterparts can refer to locations. In OIc null subjects refer to locations especially with verbs of naming (Nygaard 1894: 11-2, Heusler 1950: 461.4):

- (79a) Óðinn tók sér bústað við Löginn, þar sem nú eru __ *kallaðar* fornu Sigtúnar "Odin took residence by the Log.MSG, there where __ (=it) are.3PL now *called*.FPL Old Sigtunar.FPL" (Hkr; Nygaard 1894: 11).

- (79b) '... þá muntu sjá mega hvern þurð þú hefir drukkit á sænum.' **Þat** eru nú fjörur kallaðar.
 "'(...and now when you come to the sea) you can see what decrease.F.SG you have drunk
 in the sea.' It/that are.3PL now called.FPL beaches.FPL" (Gylf)

These examples illustrate another give-away of *ce* pro: reverse predicate agreement with the nominal predicate of *vera* 'be', *verða* 'become', rather than with the NSG subject (cf. H.A. Sigurðsson and Holmberg 2008 for NIc). Reverse predicate agreement is limited to *ce* pro and NSG *þat* "it, that", *þetta* "this", that is to NSG pronouns and demonstratives.²⁷ In (80), MSG is expected through reverse predicate agreement, and cannot be taken as evidence for reference to an inferred *haugr* 'mound.MSG' with Kinn et al. (2016).

- (80) Kallaður er ___ hér Óblauðshaugur "___ is called.MSG Oblaudshaug.MSG here [tr. Kinn et al. 2016: 58: This mound is called Óblauðshaugur]" (Illuga saga Gríðarfóstra)

Kinn et al. (2016)'s challenge to SG is robust, in the sense that there occur referential null subjects – *ce* pro – without overt antecedent outside topic-drop environments, and robustly so. However, it need not affect the domain that motivated SG, animate pro, or indeed concrete inanimate pro. Analytically, it would be straightforward to posit that *ce* pro in OIc is a distinctive silent element, for instance the silent counterpart of French *ce*. Within French, *ce* has a unique morphosyntax that no other pronouns or demonstratives share (Rowlett 2007: 3.8), and crosslinguistically there are other such isolated pronoun types (Cardinaletti and Starke 1999 on 3PL dative as sole weak object pronoun in Italian).²⁸

One indication of a distinctive pro is frequency. Unfortunately, it is difficult to study for *ce* pro, for two reasons. One is that *ce* pro is frequently analytically ambiguous with L-impersonals, including the 3 remaining examples of SG violations in Kinn et al. (2016). This is well brought out by copula + adjective structures. Some such structures like (81a) involve quasiarguments; they are not found with overt subjects in OIc, and use *il* in French. Other cases have been assimilated to them (H.A. Sigurðsson 1992: 5.3.1 for NIc). However, at least some like (81b) alternate with overt subjects in OIc and use *ce* in French. Arguably, the subject here is *ce*-pro

²⁷ In Eg and Gylf, there is nothing like a variant of (79b) with *Hon eru nú fjörur kallaðar* 'It.FSG are now called.FPL beaches.FPL' where *hon* 'it.FSG' is anaphoric to *þurð* 'decrease.F.SG'; in cases of mismatch, gender of the namee, not the predicate name, governs agreement – save that Gylf also shows an interesting complexity with namees that are A'-gaps of relativisation and rightward heavy dislocation: see Faulkes (2005) comments to 13/10, 29/26, 30/37, 39/11, and also at 6/22, 19/38, 5/37.

²⁸ On French *ce/ça*, see Kayne (1984: ch. 10), Zaring (1994), Jones (1996: 3.4.8), Rowlett (2007: 3.8, 4.4.4); on its abstract reference, Johnsen (2010) with literature. Mostly, *ce* is found before 'be' and *ça* elsewhere. This looks like an allomorphic alternation in such pairs as *c'est prêt* 'it is ready' but *ça va être prêt* 'it's going to be ready', but *ce* is clitic/weak while *ça* is strong, and so has deictic and other uses like that *ce* lacks. *Ce/ça* has non-abstract uses, where *ce* is closer to 'it' than 'that', of the type *Is it empty?* referring to a cup when the word for cup is not salient. In OIc only phi-features would indicate whether *pro* has these uses; one line of evidence in reverse predicate agreement, where concrete reference seems to use *þat* and not pro in the present limited corpus, as in (i). *Ce/ça* is also frequently used where English has pro-CP extraposition *it*, as in *it happened one day that...* In OIc both pro and *þat* are available in parallel structures (cf. Heusler 1950: §460.3), but they need a study of their own in light of the complexity of expletive-quasiargument-argument distinctions here (Chomsky 1986: 92 on English, Zaring 1994 on French, Vikner 1995: 7.1 on modern Scandinavian, Thráinsson 2007: 7.1 on NIc; on OIc cf. Rögnvaldsson 1993: ch. 6).

- (i) ok fann ek sex menn á leið ok váru **þat** húskarlar Ármóðs "I drove at night along a wood and found six persons on the road and **it/that** were house-carles of Armod" (Eg)

with referent like 'the distance' inferred from following material (cf. Zaring 1994 on *ce/ça* with adjunct clauses). The proper analysis is intertwined with the expected productivity of constructions with referential subjects versus the idiomatic character of L-impersonals, and needs further work.²⁹

(81a) en er myrkt var __ "but when __ [=it] was dark (they rowed...)" (Eg)

Er __ þó ofseinat nú "Yet __ [= it] is too late now" (Laxd; Hansen 1952: 98)

(81b) skamt var __ til sævar "(Then Loki goes before the net, and when he saw that) __ [= it] was short.NSG [= not far] to the sea" (Gylf)

Þat var skammt frá sjó. "(Odd drew the berserks together in a heap and drew wood there about the outside.) **It/that** was short.NSG [= not far] to sea." (Qrvar-Odds saga)

The other obstacle with establishing a ratio of *ce* pro to its overt counterpart is that we do not know what its overt counterpart is. In English, *it* and *that* differ in meaning for abstract reference (Hegarty 2003). As far as can be told at the moment, *ce* pro might be regular for a given set of referents and *þat* for others. Entirely impressionistically, it does often seem that *ce* pro is regular and frequent and *þat*-alternatives are demonstrative in cases like variants of *ok svá var* "and it was so". One simple regularity in the present corpus is in reference to inferred locations with verbs of naming, where Eg and Gylf use *ce* pro when the location is specified by an adverbial as in (79a), and *þat*, *þetta* otherwise, (79b) (Eg 5 pro : 2 *þat*, *þetta* and Gylf 10+ : 4).³⁰

An intriguing grammatical domain to study *ce* pro further is as ECM subject, which otherwise always seem to have an overt antecedent as per SG. *Ce* pro has been found here with only a few predicates, mainly 'be' on various uses, in all cases alternating with *þat*.

(82a) Sámr kvað __ þá svá vera verða. "(You will yourself most regret this, if you give him life.) Sam said __ then so have to be [=it has to be so]." (Hrafnkels saga Freysgoða)

(82b) Prestr kvað __ mann víst vera mundu "(She said she did not know, whether a man or a troll had carried her over.) The priest said __ [=it] to have certainly been a man." (Gr)

(82c) [A ship keeps being unable to reach the Faroese]

²⁹ Some illustrative examples where English allows *it* and reference may be inferred from overt material: *Var __ kyrt allan þann vetr* " __ [= it] was quiet all that winter" (Laxd; Hansen 1952: 97) | *ok var __ hált mjök á ísinum* "and __ [= it] was very slippery on the ice" (Eb) | *Geysi mikit hús mun Valhöll vera, allþröngt mun __ þar opt vera fyrir durum* "A very great house must Valhall be, __ [= it] must often be very crowded.NSG there before doors" (Gylf). Examples where English does not allow *it*: *nú er snjálaut ... í fjallinu* "now it is snowless.NSG ... in the mountain" (Nygaard 1894: 21) | *Þeir Ásbjörn lendu útan at eyjunni, þar er óbyggt var* "Asbjorn and company landed out at the island.F, where __ was uninhabited.NSG" (Hkr; Nygaard 1894: 21) – the last arguably illustrating a location *ce* pro outside verbs of naming. A further complication: though Kayne (1984: ch. 10) and Zaring (1994) have shown that *ce/ça* is referential in contrast to *il* 'it.M', it is susceptible to lexicalisation in idioms, so French has the same distinction as *How is it going?* (idiomatic) - *How did it go?* (anaphoric) but with *ça*.

³⁰ A couple of plain test-counts of *ce* pro : *þat*, *þetta* do hint at a high absolute frequency of *ce* pro. With *gegna* 'mean, signify', we get Eg 1:2, Nj 1:3, Laxd 2:1, Hkr 2:3, Thidr 7:4, and in ONP citations *hverju/hví gegnir* __ "what does __ mean" 23:13. However, *sæta* 'mean, signify' is only found in Nj and with *þat*, 0:4. With *ok varð* __ *NP_{pred}* "and __ was NP", we get Nj 3 or 4 (all distinct) : 7 (of which 3 with identical NPs).

Þrándr kvað __ svá fara mundu, hversu oft sem þeir leituðu til "Thrand said __ will.INF go [=it would happen] so, however often they tried " (Flateyjarbók cit. F)

A last line of evidence for the distinct status of *ce* pro would be survival when other referential pro was lost. There is reason to pursue this, but it cannot be done here. The matter is left in this uncertain state for future work.

4.4 The major pro system: animacy and quantification

4.4.1 *Background*

The finding that weapon and *ce* pro do not fit the expected frequency of OIc pro suggests a study of 3rd person pro in function of various factors: properties of the antecedent, of pro and its sister predicate, and of the structural and pragmatic relationships between them. Here it is begun for animacy, quantification, and certain structural relationships. Again there prove to be islands where pro has a frequency far higher than the global < 1 : 10 proportion to overt pronouns. The result is partly compatible with one system of pro, in the role of quantification and cohesion, and partly needs comparative work, in the role of animacy.

There is no corpus annotated for antecedence and a manual search is needed. The corpus is Egils saga Eg (c. 65,000 words), chosen as one of the longer sagas of Icelanders, and the Gylfaginning Gylf (cf. 18,000 words), a cotemporaneous mythological narrative possibly by the same author, chosen to balance the paucity of anaphora to inanimates in the sagas. The number of referential pros in these texts is very small once weapon pro and *ce* pro are eliminated, and any patterns very tentative, though the role of quantification is supportable by construction-specific searches on a much larger corpus (c. 548,000 words).³¹

Let us define some terms. *Dependent* pro is pro whose antecedent is *superordinate*: an argument of a minimal clause that contains the pro clause. Dependent pro is thus one whose antecedent c-commands it under standard QR, or stands in a potential control configuration to it modulo lexical restrictions on control. Other pro is *nondependent*. The bulk of it is *coordinate* pro, whose antecedent is in a minimal clause that is sister to the pro clause (with or without overt conjunction and disregarding punctuation). Other nondependent configurations like (55b), (60), (87) are rare.³² Coordinate but not other pro suffers from *undercounting*: it is not counted as pro here when the antecedent is the subject of the preceding clause, because this is a potential conjunction reduction. Undercounting may significantly skew numbers, since it bleeds a configuration where we would expect pro to be common, as an anaphor that prefers aboutness topics that themselves are often coded as subjects. Thus in (1a), the subject of *heldu* is excluded, though equally plausible as conjunction reduction and as pro, cf. *and they parted the dearest of friends, and __/they stayed so while they both lived.*³³

³¹ Counts are conservative and exclude a few cases ambiguous between: 3SG animate pro and H-impersonals; 3SG animate and inanimate pros; 3SG pro and *ce* pro; 3rd person pro and alternative analyses, including ATB extraction, parasitic gap, relative gaps due to ambiguity of *er* as 'when' or 'that'.

³² But perhaps less than seems. 4/12 pros in Eg emended in Einarsson (2003) have adjunct antecedents to matrix pro, which makes up 5/8 nondependent, noncoordinate pros repertoried in Nygaard (1894: 10).

³³ Potential conjunction reduction must be excluded from the study of OIc, since since a system may have conjunction reduction but not pro, even if conjunction reduction involves pro (Rögnvaldsson 1996). Here potential conjunction reduction is defined as sister clauses sharing the same subject, independently of comma, semicolon, and full stop punctuation, which is mostly editorial, including rare cases of split-coordination subject and of oblique

4.4.2 Inanimate pro

Inanimate pro – henceforth exclusive of weapon pro and abstract-reference or *ce* pro – is illustrated below in various configurations.³⁴ For dependent pro, antecedents are subjects, objects, and in PPs, and pro occurs in high and low adverbial clauses, relative clauses modifying nonsubjects, and perhaps complements.

(85a) *Dependent: pro*

En plógrinn gekk svá hart ok djúpt at upp leysti ___ landit "And the plough went so hard and deep that ___ (=it) loosened up the land" (Gylf)³⁵

(85b) *Dependent: pronoun*

...áðr stufan brann svá at **hon** fell ofan. "...before the room.F burned so that **it**.F fell down" (Eg)

(86a) *Coordinate: pro*

subject (Barðdal and Eythórssón 2005). Thus all the silent subjects in (i) count, where editions vary in punctuation that corresponds to junctures ·. This procedure includes cases unlikely to be conjunction reductions, such as the last juncture in (i). This however is often a subtle judgment: to illustrate, (1b) read as a conjunction reduction suggests that the axe had not been softened despite being driven into the gable-end, while with pro it has the more suitable meaning that it not softened despite having passed through fire; but these are not absolutes.

(i) riðu þeir Haukadalsskarð vestr · ok svá sem liggir út á Nes · keyptu ___ þar skreið mikla · ok báru ___ á sjau hestum · sneru ___ heimleiðis er **þeir** váru albúnir "they rode.3PL west to Haukadalssskard · and so as [sc. the path] lies out to Nes · bought.3PL ___ a lot of dried fish there · and carried.3PL ___ [sc. them] on seven horses · turned.3PL ___ home when they were.3PL ready" (Gr)

³⁴ In OIc as in other languages, there occur cases where a concrete inanimate masculine/feminine antecedent is picked up by a neuter pronoun/demonstrative, as in (ib) in contrast to (ia), and if pro occurred instead of *þat*, we could not see this unless there happened to be an agreement mismatch to 3SGN. To go by French, such a pro would be *ce* pro, typically used when the referent does not have a recent, salient linguistic expression, or when the referent is reconceptualised, but also rarely in cases like (ib).

(ia) ok síðan gaf hann Einari skjöld, ok var **hann** in mesta gersemi "and then he gave Einar a shield.M, and **it**.M was the greatest treasure.M" (Eg)

(ib) Hann hafði með at fara skjöld er Þorsteinn hafði sent Agli Skalla-Grímssyni ok var **þat** ágætagripr. "He had on the journey a shield.M that Thorstein had sent to Egil Skalla-Grimsson and **it/that**.N was a precious treasure.M" (Eg)

³⁵ Other examples, focusing on showing different types of arguments anteceding pro in adjuncts and relatives: *at gefa yðr betra drykk, ef til væri ___* "I would be eager... to give you better drink, if ___ were available" (Eg) | *Egill færðisk við ok treysti stafinn til þess er upp losnaði ___ ór gólfinu* "Egil exerted himself against and tried the strength of the post until ___ got loose up out of the floor" (Eg) | *síðan krækti hann fingrinum í augat svá at úti lá ___ á kinninni* "then he hooked his finger into the eye so that ___ lay out on the chin" (Eg) | *út í gegnum vegginn þar er áðr var ___ brotinn* "(they carried him ...) out through the wall.M where ___ had earlier been broken.M" (Eg). Complements are rare in the material here and the couple of candidates might have *ce*-pro: *Fé hafa þeir ok mikit ok hafa fólgt (___) á landi, ok veit ek gørla, hvar er ___* "Great wealth have they also and have hidden in the land, and I know clearly, where ___ [the wealth? or the hiding place?] is" (Nj).

Egill skaut niðr skyraskinum ok var ___ þá nær *tómr*. "Egil put down the curd-bowl.M and ___ was then nearly *empty*.MSG" (Eg)

(86b) *Coordinate: pronoun*

Annan sal gerðu þeir, þat var hǫrgr er gyðjurnar áttu, ok var **hann** *allfagr*. "Another hall.M they made, that was a fane.M that the goddessess had, and **it**.M was *very fair*.M." (Gylf)

(87) *Nondependent other pro*

Var haussinn undarliga mikill, en hitt þótti þó meir frá líkindum, hvé *þungr* var ___. "The skull.M was wonderfully large, but it seemed still farther from likelihood, how *heavy*.M ___ was." (Eg)

Dependent configurations let us examine frequency of pro without undercounting. For inanimates, pro is preferred to overt pronouns: Eg 6 : 3, Gylf 8 : 6. The bulk is adverbial clauses, a couple of relatives to nonsubjects, and one complement clause. The preference for adverbial clauses is consistent with cohesive pro in section 4.1, but it is not an independent factor, because the overt pronouns have the distribution. The antecedents of pro are about equally definites and indefinite bare DPs, beside one quantified DP; they are not necessarily aboutness topics, but accessible enough that a pronoun is the best translation.³⁶

Coordinate pro may suffer from undercounting and cannot be taken at face value; but there is an intriguing difference between Eg 2 : 4⁽⁺²⁾ and Gylf 3 : 20⁽⁺²⁾. This asymmetry correlates with the frequency in Gylf but paucity in Eg of cases like (88). These are extended descriptions of an inanimate, consisting mostly of clauses that predicate an anaphor of its description, and that are not linked to the antecedent with cohesive devices like *ok ... þá* 'and ... then' in (86a). They suggest that overt pronouns favour noncohesive environment and pro cohesive environments, as in cohesive pro-drop.

(88) Fyrst var þó sá heimr í suðrhálfu er Muspell heitir. **Hann** er ljóss ok heitr. Sú átt er logandi ok brennandi, er **hann** ok ófærr þeim er þar eru útlendir ok eigi eigu þar óðul. "Yet first was that world(M) in the south that is named Muspel. **It**.M is bright and hot. That direction is flaming and burning, **it**.M is also impassable to those that are foreign there and do not have there their native land." (Gylf)

³⁶ In some cases, the antecedent is plausibly the aboutness topic, as in (i). In others like (86a), that seems less likely, though the passage refers to the serving of curd-bowls. In still others like (ii), pro is not the aboutness topic, but still highly accessible, as the pronoun shows in English, or better still pro in Czech or Spanish. With animates there are examples where pronoun or pro is less felicitous than a demonstrative, as in (52) and note thereto.

(i) Hann gerði penning, þann er eigi stóð minna en eyri, ok hnitir saman **penninginn**, ok eru tuttugu naddar á (___), tíu á hvárum hlutum, ok þykkir sem heill sé ___, ef saman er ___ lagðr, ok má þó taka (___) í sundr í tvá hluti. "He made a coin.M, one which weighed no less than an ounce, and welds **the coin**.M together, and twenty nails are on (___), ten on each part, and it seems as if ___ is *whole*.M, if ___ is *laid*.M together, and yet one can take (___) apart in two parts." (Gisl)

(ii) Síðan sneið Egill af honum skeggit við hokuna; síðan krækta hann fingrinum í augat svá at úti lá ___ á kinninni "Then Egil cut his beard from him at the chin; then he hooked his finger into his eye so that ___ lay out on the chin. (After that Egil went away and to his companions.)" (Eg)

The total numbers of inanimate anaphora are very small in the corpus studied here, though matched in their principal consequence by the corpus for weapon pro and by anaphora opportunistically noted in the corpus for H-impersonals. This consequence is a major asymmetry between inanimate and animate pro at least in dependent configurations, inanimate being at roughly 1 : 1 to overt pronouns, animates at < 1 : 10 as seen below. The reverse might have been expected, based on the tendencies of pro to favour high-topicality antecedents and for these to be animate. However, other factors may well modify this expectation. In systems where the role of animacy has been studied, overt pronouns can be unavailable for inanimates leaving pro alone (Spanish, Cameron 1992) or pro can be less available than for animates (Gutman 2004 on Finnish versus Hebrew coordinate pro). Mostly the matter remains to be studied.

4.4.3 Animate pro and quantification

Dependent animate pro fits the findings of Kinn et al. (2016), insofar as the few pros, Eg 3, Gylf 4, are outnumbered by overt pronouns at far more than 1 : 10. However, this changes dramatically once a finer net is cast. The pros all have nonreferential antecedents: the quantifiers *engi* 'none' (3x), *fáir* 'few', *allir* 'all', and a relative gap. In turn, the quantifiers do not to bind nominative pronouns in these texts, though they bind nonnominative pronouns.³⁷ This hints at a correlation between dependent pro and nonreferential antecedents.

To study the hint, a much larger corpus is needed. A preview is afforded by a couple of easy-to-search configurations in long texts: Hkr (c. 250,000 words), Thidr (c. 130,000), Eg (c. 65,000), Gylf (c. 18,000), Gr (cf. 60,000). In both configurations the relationship studied is between pro or overt pronoun anaphora and an exhaustive 3rd person human antecedent in the immediately upstairs clause. The configurations and the results are:³⁸

Configuration: *so ADJ that*, where the antecedent is the nominative subject of ADJ

Example: *None is so wise that ___ can tell all his works.*

Results:

Referential subjects usually antecede overt pronouns (Hkr 16 vs. 1 pro, Thidr 18²⁽¹⁾, Eg 5⁽¹⁾, Gylf 2, Gr 6 vs. 1 pro).

Plain quantifiers antecede pro (Hkr *engi* 'none' 4⁴, *margir* 'many.PL' 1, Thidr *engi* 'none' 5⁴⁽¹⁾, *engi NP* 'no NP' 2², *fáir NP* 'few.PL NP' 1¹, Eg 0, Gylf *engi* 1¹, Gr 0).

The remainder antecedes overt pronouns: quantifiers restricted by a doubling pronoun (Hkr *þeir margir*, *báðir* 'they many, both [sc. many, both of them]' 2); relative gap (Thidr 1).

Configuration: concessive *þó at, þótt* 'though' clauses (all subjunctive)

Example: *Luck has not sufficed to anyone in this land though ___ had great might and following.*

Results:

³⁷ Counts of quantifier-bound anaphora exclude E-type anaphora, as in (i), and cases like (50) that are ambiguous between an anaphor that is bound by a quantifier under a conjunction reduction analysis or by an E-type pro.

(i) ok spurði hverr sá væri með Ásum er eignask vildi allar ástir hennar ok hylli ok vili **hann** ríða á Helveg... "and asked who might be that one among the Aesir who wanted to obtain all her love and favour and whether he would desire to ride on Hellway..." (Gylf)

³⁸ The superscripted numbers indicate which if any pros are in subjunctive (ambiguous) clauses, discussed below.

Referential antecedents almost always antecede overt pronouns (Hkr 16, Thidr 18 vs. 1 pro, Eg 7, Gylf 1, Gret 6).

Plain quantifiers usually antecede pro (Hkr *engi* 2 vs. pronoun *fá NP* 1, Thidr *engi* 1, Eg *engi* 1, Gret *fáir* 1 vs. pronoun *engi* 1).

Bare definite/kind NPs mostly antecede pronouns (Hkr 3, Thidr 1 vs. 1 pronoun, Gylf 1), Bare indefinite NPs antecede pro (Hkr 1, Gr 1).

The remainder antecedes pro and may be quantificational (Hkr *þeir nokkurir er* 'those few who...' 1, Hkr *óvini sína þá eina* 'his enemies those alone [sc. only few of his enemies]' 1).

Nygaard's (1894: 8-9) exemplary of dependent pro also shows the role of quantification: of dependent animate pro antecedents, 3 are referential and 7 quantifiers (5 *hverr* 'each', 2²⁽²⁾ *engi* 'none').³⁹ Other sources here where animate pro in dependent configurations has been opportunistically noted – Eb, Ld, Nj – also seem to follow this pattern.

The range of configurations where animate pro has been found is similar to that of inanimates, (90). Typical antecedents are quantifiers as subjects, object, indirect objects. Pro is found in adverbial clauses, nonsubject relative clauses, isolatedly complements.

(90a) ok engi mun verða ef svá *gamall* er __ at elli bíðr __, at... "and there will be no one.M if __ is so *old*.M that __ lives to old age, that..." (Gylf)

(90b) Mun sá allr einn, er nu á dvalar ok þá mun verða svá hræddr, at eigi mun __ vita, hvert hlaupa skal __ "He will be one and the same, who now lingers and then will be so frightened, that __ will not know, whither __ shall run" (Nj)

(90c) þeir létu gera hvern, sem vildi __ "they let each do as __ wished" (Fagrskinna; Nygaard 1894: 10)

Counterexamples to the prevalent correlations are illustrated in (91): even in dependent configurations, there are referential antecedents for pro, and even with the quantifier *engi* 'none' that most favours pro there occur overt pronouns.

(91a) er þeir váru svá gamlir, at fyrir aldrs sakir máttu __ muna þessi tíðendi "when they were so old, that thanks to age __ could remember these tidings" (Hkr)

(91b) at engi skyldi lengr í sekð vera en tuttugu vetr alls, þó at **hann** gerði útleigðarverk á þeim tímum "that none should be longer in outlawry than twenty winters in all, though **he** do outlaw-deeds in that time" (Gr)

The overall proportion for animate pro in all dependent environments is estimated at well < 1 : 10 on samples of Eg and Gylf, consistently with the findings of Kinn et al. (2016: 37, 47). The ratio differs across constructions, but there is no evidence at present that they condition pro. Animate pro is frequent in the constructions above, *so ADJ that* roughly 1 : 3, concessives 1 : 5.

³⁹ One of Nygaard's *engi* examples has been excluded as an L-impersonal (see Faulkes 2005: s.v. *ganga: gengr af*). Most antecedents of pro are 12⁴ inanimates in the variety of environments discussed above; 5 weapon pros; 2 singular collectives, *flest fólk* 'most folk' and *herrinn* 'the army', not counted as animates since they are grammatically inanimate in English (cf. *the army which/*who...*).

It seems far rarer as the subject of *ef*'if clauses with an exhaustive matrix antecedent, Eg 1 : 26, Gylf 1 : 7. However, the 2 pros are anteceded by bare quantifiers, and the 33 overt pronouns by a referential DP. Thus the numbers are expected without saying anything specific about *ef*-clauses. Similarly, there is only a derivatory correlation of pro with subjunctive mood. In Eg and Gylf, 6/7 dependent animate pros are with subjunctive verbs, all concessive clauses are subjunctive, and in the other counts above most pros also occur with subjunctives as shown by superscripts. However, the subjunctive correlates with clause-type, namely concessives, and with the downward-entailing quantifiers 'none', 'few', not directly with pro.

The correlation of pro and nonreferential antecedents recalls the Overt Pronoun Constraint of Montalbetti (1984): directly quantifier-bound variables prefer being pro more strongly than other anaphora. In classical pro systems like Spanish, pro blocks an overt pronoun as unfocused anaphor generally, but more categorically if the anaphor is directly bound by a quantifier (Cardinaletti and Starke 1999: 7.2). In the discourse pro-drop system of Chinese, pro is not obligatory as unfocused anaphor, yet is so when quantifier-bound (Ariel (1990: 6.2). In the cohesive pro system of Finnish, pro is generally optional as unfocused anaphor, and so also with *every Swede*, but preferred with *no Swede* and more so still with bare *no one* (Holmberg 2016). Finnish appears to be a particularly good match for the OIc findings where above all bare quantifiers correlate with pro and the bulk of them is *engi* 'no one'.

Coordinate animate pro has been set aside so far because of the problem of undercounting. At first sight, coordinate 3SG animate pro is extraordinarily infrequent:

3SG	animate	Eg 0 : ∞	Gylf 1 : ∞ (∞ being in the hundreds)
	inanimate	Eg 4 : 3 ⁽⁺²⁾	Gylf 3 : 20 ⁽⁺²⁾
3PL	animate	Eg 25 (12 exhaustive) : ∞	Gylf 4 (1 exhaustive) : ∞
	inanimate	Eg 0 : 0	Gylf 0 : 0

Undercounting likely contributes to this asymmetry. Dependent pro is not affected by undercounting, and 3SG is indeed the most frequent dependent pro, because 3SG are the most frequent antecedents (dependent pro inanimate Eg 3SG 5 to 3PL 1, Gylf 3SG 8 to 3PL 0, animate Eg 3SG 2 to 3PL 1, Gylf 3SG 1 to 3PL 3). Inanimate pro is less affected by undercounting than animate pro, because inanimates are more rarely subjects and so potential conjunction reduction antecedents. 3PL pro is less affected by undercounting than 3SG pro, because it can be not only exhaustively but also partially anteceded, in which case it cannot be undercounted as potential conjunction reduction. This methodological problem must be parried before any conclusions are drawn from apparent discrepancies between dependent-nondependent pros or 3SG-3PL among coordinate animate pros.

4.4.4 *The major system of pro in OIc*

Overall there emerges the following picture of animate and concrete inanimate pro in OIc:

- Optionality, frequency, and animacy: There is no preference for pro save when bound by quantifiers, which is a common characteristic of pro-drop systems and particularly analogous in cohesive pro. With referential antecedents in environments where undercounting does not play a role, animate pro is dispreferred well $< 1 : 10$, while inanimates pro is on the order of $1 : 1$. It is unclear if this asymmetry reflects theoretically different pro-drop systems.

- Control and SG: Both animate and inanimate pro are clearly available in environments that cannot be spanned by control, but preference for control-like relationships characteristic of cohesive pro may be seen in SG, which remains neither disproven nor robust.
- Cohesion: Both animate and inanimate pro show preferences for environments identified as cohesive, notably adverbial adjuncts with matrix antecedents, though this has not been shown to be an independent conditioning factor. With inanimates at least, cohesion may play a role between coordinate clauses, as in cohesive pro.
- Topicality: Antecedents are not restricted to aboutness topics for animates or inanimates, as in cohesive pro, though occasional switch topic uses lack clear analogues.

As far as can presently be told, animate and concrete inanimate pro may be a single system. Let us call this the major system of pro in OIc, beside the restricted systems of weapon pro and *ce* pro. There is nothing quite like the major system elsewhere, but then we have seen that Italian, Spanish, and Spanish varieties, or Finnish and Hebrew, differ significantly from each other on some of the parameters on which the OIc major system differs from classical pro. Several features of the major system suggest the cohesive pro systems of Finnish and Hebrew.

4.5 Casting the net in IcePaHC

By way of bringing out the consequences of the foregoing findings, let us consider how they modify the results of searching for pro in IcePaHC by looking at the fragment of Gr in it (c. 20,000 words, 1/3 of the saga). CorpusSearch returns 39 pros. Of these, 7 do not count here as pro.⁴⁰ The remainder is:

- 8 *ce*-pros, all 3SG (some might be L-impersonals) .
- 7 weapon pros, all 3SG, of which 5 with stereotypical predicates (1 is a weaponised bat).
- 3 inanimates in subordinate clauses with superordinate antecedent, 1 to 3PL indefinite bare NP, 2 to a single 3SG definite singular antecedent (plus 1 intrusive resumptive to a 3PL inanimate)
- 5 animates with antecedents in preceding coordinate clauses, all 3SG, all referential: 2 exhaustive, 1 split, 1 associate, 1 members
- 5 animates with antecedents in superordinate clauses, of which 3 to quantified NPs (*hver* 'each', *hver NP* 'each NP', *margir* 'many.PL'), and 2 to 3PL indefinite bare NPs
- 2 1st/2nd person pros, both 2SG in a subordinate clause with matrix antecedent (plus 1 imperative)

The numbers are small, but they lend cumulative support to the conclusions so far and suggest a consequence for 1st/2nd-3rd person asymmetry studied in Kinn et al. (2016):

- Weapon pro and *ce* pro are particularly robust categories among pro.
- Dependent animate pros correlate with quantificational antecedents

⁴⁰ 3 are pros posited in PPs like *við svó buið* 'with so been.NSG [=as it stands]'; 1 is an accusative subject of *varir* 'beware', 1 is likely a human impersonal pro, 1 counts as potential conjunction reduction, 1 is likely a past infinitive homophonous with 3PL pro.

- Overall 3SG outnumbers 3PL, but 3PL plural dominates among animates, particularly coordinate animate pro, and nonexhaustive antecedence contributes to this.
- 1st/2nd person pro, though sharply less common than 3rd person pro, may be less so once other parameters are controlled for – animacy, clause type, relationship to antecedent.

IcePaHC also helps in estimates about pro : overt pronoun ratios in cases where manual counts are arduous. The fragment of Gr confirms that animates are at well < 1: 10 ratios both overall and in subordinate clauses. Animacy is not coded in IcePaHC, but a good estimate can be had from 3PLM/F, since these almost never refer to inanimates: main clauses 8 3PL pro : 150 3PLM/F overt pronouns, of which in subordinate clauses 3 : 66; and from 3SGM/F, only a handful of which refer to inanimates in this text, 10 : 303, of which subordinate 5 : 159.

5 Conclusion

One aim of this study is to contribute to a theoretically-informed characterisation of OIc silent subjects, in particular the interaction between L-impersonals, H-impersonals and referential pro, the nature of H-impersonals in OIc and their relationship to NIc, and the existence of very different patterns of behavior within 3rd person referential pro. This last finding above all is worth the pursuing in a larger corpus, for it leads to a very different picture at finer scales of detail than globally, but one limited here by small numbers even in long individual texts, due to the rarity of pro. Presently there is no tool available for such a study than manual counts, arduous and error-prone.

The other aim is to bring out theoretical contributions that OIc argumental null subjects can make. The emphasis has been chiefly on the theories of conventionalisation. L-impersonals are limited to arbitrary predicates. H-impersonals in the passage from OIc to NIc have become limited to a modal construction plus a handful of lexical survivors. Referential pro seems to contain distinct subsystems such as weapon pro. This section discusses this issue into a diachronic and synchronic perspective drawing on referential pro.

If we add the findings here to the diachronic trajectory 3rd person pro-drop in Germanic as currently understood, simple loss is broken up by islands of retention or even innovation. The earliest-attested Germanic language with sufficient data is the East Germanic language Gothic. Fertig's (2000) study of subject pro-drop in Gothic suggests a system comparable to that of Spanish in section 4.1. Pro-drop is required for aboutness topics, allowed for other familiar referents, but with preference for overt pronouns at least in some cases of switch topic; there are no asymmetries of clause type. The earliest-attested members of branches of Indo-European closest to Germanic also all have at least this much pro-drop, so it seems a reasonable candidate for Proto-Germanic. However, the later-attested West and North Germanic languages have led Walkden (2014) to the reconstruction of a different and less extensive pro-drop shared by them. One difference is that pro-drop is mainly a root phenomenon, but here OIc is exceptional, and it is might be so by retention, in light of Gothic, or innovation, as Walkden proposes. The other difference is that pro-drop is optional and uncommon even for high-topicality antecedents. OIc fits this profile globally, but there are islands where pro is the rule – weapon pro and quantifier-bound pro – and others where it is common – inanimate pro. By NIc, Kinn et al. (2016) conclude that referential pro-drop has been lost save for topic-drop, either retained from OIc or innovated. However, H.A. Sigurðsson (1993: 248n3) draws attention to a subsystem of pro in literary NIc where "the gap clause must be a subjunctive adverbial adjunct and meet some further

conditions", as in (95). Again there is an island, one which seems to be a retention because referential *pro* was particularly frequent in subjunctive adverbial clauses in OIc, and an innovation because adverbiality and subjunctivity were not defining conditions in OIc.

(95) Hann getur þetta ekki, þótt __ duglegur sé. "He cannot do this even though __ is.3SG.SUBJ efficient.MSG". (H.A. Sigurðsson 1993: 248n3)

In other North-West Germanic languages, islands of anomalously frequent *pro* have been identified by Rusten (2013) and Walkden (2013) in Old English jussive subjunctives and the passive of *hātan* 'call'.

These islands of *pro* are all defined by their unusual frequency. This is a descriptive observation. Configurations of differentially frequent *pro*-drop need not reflect theoretically different *pro*-drop mechanisms. In Ariel's (1990) theory of anaphora, for example, propensity for *pro*-drop depends on factors like topicality and cohesion, which govern all anaphora and not *pro* alone, and this alone leads her to the prediction that in Hebrew *pro* to a matrix antecedent will be more frequent in typical adverbial than complement clauses.

One island of unusually frequent *pro*, quantifier-bound *pro*, is characteristic of cohesive and other *pro*-drop systems, so does not need a separate theory. Weapon *pro* clearly needs a special theory, either grammatical or extragrammatical. It joins other restrictions on null subjects that raise the issue of conventionalisation:

- Restriction of quasiarguments to idiosyncratic syntactic predicates, often with a special meaning (section 2).
- Restriction of DP-like H-impersonals to the complements of an apparently arbitrary subset of modals and an arbitrary list of lexical predicates, at the latest by NIc (section 3).
- Restriction of classical-like *pro*-drop to weapons with stereotypical predicates (section 4).
- Restriction of a high-frequency *pro*-drop to *ce*-like abstract referents, possibly (section 4).
- Restriction of a high-frequency *pro*-drop to inanimates, possibly (section 4).
- Restriction of NIc non-topic-drop *pro*-drop to subjunctive adverbial clauses (above).
- Restriction of high-frequency *pro* to jussive subjunctives and passive *hatan* in Old English in Rusten (2013), Walkden (2013).

The theoretical problem these restrictions pose for conventionalisation is nicely echoed in a well-studied living system, recipe or instructional object *pro*-drop in English. It may be partly constrained in the same way as topic-drop (Haegeman 1987, Massam 1992, H.A. Sigurðsson and Maling 2008; but Ito 1993, Ruda 2014 give good counterevidence). However, it has a number of further largely unparalleled restrictions established in Massam and Roberge (1989), and it remains to be seen whether these should be added to syntax or another domain of grammar as in Massam (1987, 1992) or Bender (1999), or are rather extragrammatical though they govern linguistic expressions, as Culy (1996) argues.

In current Principles and Parameters, grammatical conventionalisation resides in the formal features of functional atoms, which interact with syntactic, PF, and LF dependencies, where the dependencies are local and the interaction is constrained by modularity. A trivial example of such variation is the availability in OIc of a silent version of *kostr* 'choice.M' alone among all NPs/nPs, allowing unantecedent NP/nP drop with solely this interpretation:

- (99) [A ship is driven onto shoals in storm]
Var þá *engi annarr* __ til en stefna á land upp "There was then *no.MSG other.MSG* __
[sc. choice] than to head to land" (Eg)

A more complex example is Old English referential *pro* in jussive subjunctives, where silence of Spec,T depends on features of the C/T system, just as *pro* in English imperatives (Isac 2015). However, even restrictions that seem to fit this domain of conventionalisation may be difficult when it comes to the details. Theories of controlled *pro*/PRO restrict them to c-commanded positions (Holmberg and Sheehan 2010) or to subjunctive complements (Landau 2004), and need modification to allow for a restriction to subjunctive adverbial clauses.

Inherently difficult for this means of conventionalisation are cases whose description suggests nonlocal or cross-modular mechanisms. A good example is Old English silent subjects with the passive of *hatan* 'call', whether analysed as *pro* or as asyndetic subject relatives (Rusten 2013, Walkden 2013). It seems to need interaction between the phonological identity of a verb, the silence of its internal argument and/or of a relative C, and the passive v-system. Such dependencies may be barred on constrained theories of features (cf. Adger and Svenonius 2010) or interactions between syntactic and phonological content (but see Embick 1999). Among alternatives to Principles and Parameters, Construction Grammars are specifically designed for such cases by allowing the coding of arbitrary dependencies in arbitrary structures with arbitrary meanings (Jackendoff 2002).

Within Principles and Parameters, some of the phenomena treated in Construction Grammars have been attributed to the repository of special meanings for roots and structures, the encyclopedia. By design, the encyclopedia is suitable for the distribution of quasiarguments on the approach of Wood (2016) in section 2. It is also suitable for the analysis of weapon *pro* in section 4, which makes it formally the coupling of a functional structure with certain roots like pluralia tantum in Borer (2005: 1.4); the same goes for *ce* *pro* and indeed French *ce* itself. Whether the encyclopedia covers more complex restricted *pro* systems remains to be seen.

Finally, not all conventionalisation of linguistic expressions is grammatical. Culy (1996) posits that diachronically changing conditions on recipe *pro* are extragrammatical. There is no reason to reject the possibility that the choice of *pro* rather than an overt pronoun – generally, or to refer to weapons, or as subject of subjunctive adverbials – is sort of convention that chooses *I* over *me* in *Mary and I, bigger than I, it is I*, on the extragrammatical approach of Sobin (1999). Here adjudicating between analytical options is especially difficult, since there remains much to understand about extralinguistic conventionalisation and its alternatives.

6 Appendix: Sources and abbreviations

The domain of study is the "classical saga style" of OIc prose studied through:

1. A corpus of sagas of Icelanders exhaustively studied for H-impersonals: Eyrbyggja saga, Egils saga, Eiríks saga rauða, Grettis saga Asmundarsonar, Groenlendinga saga, Laxdæla saga, Njáls saga, Vatnsdæla daga; and the mythological narrative Gylfaginning. Citations are from Islenzk Fornrit editions (some at <https://www2.hf.uio.no/polyglotta>, in other editions at <http://heimskringla.no>) save Egils saga from Einarsson (2003) and Gylfaginning from Faulkes (2005) (both at <http://www.vsnrweb-publications.org.uk>). In doubtful cases readings have been checked against (semi-)diplomatic editions (usually available through ONP, or at the Medieval

Nordic Text archive <http://www.menota.org>) or manuscripts (<http://handrit.is>) and examples are so cited when lack of emendation is at stake.

2. A corpus of exhaustively studied for referential pro: Egils saga and the Gylfaginning.

3. Opportunistically, examples drawn from other saga-style narratives, especially Heimskringla cited from the Islenzk Fornrit edition (<https://www2.hf.uio.no/polyglotta>).

4. IcePaHC: Wallenberg, Joel C., Anton Karl Ingason, Einar Freyr Sigurðsson, & Eiríkur Rögnvaldsson. 2011. Icelandic Parsed Historical Corpus (IcePaHC) (http://linguist.is/icelandic_treebank)

5. The studies of null subjects of Nygaard (1894, 1906), Heusler (1950), and Hansen (1952) that draw on the same genres, and the dictionaries of Cleasby-Vigfusson (<https://archive.org/>), Fritzner (<http://www.doink.ch/cgi-bin/fritzner.py>), Ordbog over det norrøne prosasprog (<http://onp.ku.dk/>). Analysis has made use of comments to the Islenzk Fornrit editions, the Altnordische Sagabibliothek editions (http://archive.org), and translations. Cited examples usually cross-reference these sources when they or their variants are discussed there.

Abbreviations:

Sagas		Dictionaries	
Eb	Eyrbyggja saga	C-V	Cleasby-Vigfusson
Eg	Egils saga	F	Fritzner
Eir	Eiríks saga rauða	ONP	Ordbog over det norrøne prosasprog
Gisl	Gísla saga Súrssonar		
Gr	Grettis saga Ásmundarsonar		
Groen	Grœnlendinga saga		
Gylf	Gylfaginning		
Hkr	Heimskringla		
Laxd	Laxdœla saga		
Nj	Njáls saga		
Vatn	Vatnsdœla saga		
Thidr	Þiðriks saga af Bern		

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