

HUMANNESS AS AN ALTERNATIVE TO CASE-LICENSING

Elizabeth Ritter^{1,2} and Martina Wiltschko³

¹Ben Gurion University of the Negev, ²University of Calgary, ³The University of British Columbia

1. Introduction

Impersonal passives in German display a curious restriction: the suppressed AGENT has to be human. The goal of this paper is to develop an analysis of this human restriction (henceforth H-restriction). In particular, we adopt an analysis for impersonal passives according to which the AGENT is not fully suppressed – neither at the level of argument-structure, nor in the narrow syntax. Instead it is realized as *pro* in Spec,vP. Hence the H-restriction is associated with *pro*. We propose that in this context, *pro* comes with a minimal index, which restricts its referents to humans (henceforth H-index). We argue that the H-index serves as an alternative to Case-licensing. That is, in the absence of Case, the minimal H-index serves to license nominal arguments and hence (some) arguments that are not Case-licensed are restricted to humans. Thus, in addition to noun-incorporation, H-licensing is another alternative to Case-licensing.

We develop our argument as follows: In section 2, we introduce in detail, the H-restriction on German impersonal passives. In section 3, we introduce our analysis of H-licensing as an alternative to Case-licensing by situating it in a general theory of nominal licensing. In sections 4 and 5, we discuss two impersonal pronouns that provide independent evidence for our proposal: the Hebrew impersonal *pro* is also restricted to humans (section 4) and so is the German impersonal pronoun *man* (section 5). We then show that not all impersonals are subject to H-licensing in the sense developed here suggesting that impersonal pronouns are not a unified class (section 6). Finally, in section 7 we conclude with a discussion of the nature of H and questions for future research.

2. The Human restriction on impersonal passives

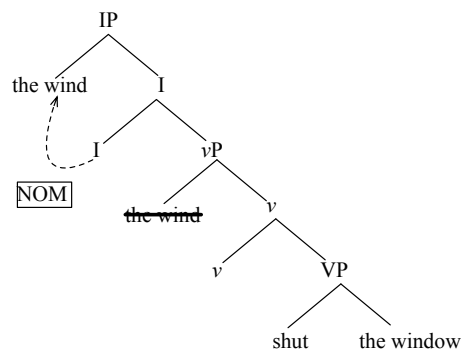
Consider first the difference between a transitive active sentence (1a) and its passivized counterpart (1b).¹ In an active sentence the AGENT is merged in Spec,vp while the THEME is merged as a complement to V. The AGENT argument requires Case and hence moves to Spec,IP to check nominative Case (2a). In a passive sentence, the AGENT is suppressed (indicated by the lighter shade of the font in (2b)). To satisfy the

¹ Abbreviations: 1,2,3 = 1st, 2nd, 3rd person; ABS = absolutive; ACC = accusative; AUX = auxiliary verb; DAT = dative; DET = determiner; ERG = ergative; IMPERS = impersonal pronoun; INF = infinitive; M = masculine; N = neuter; NOM = nominative; PART = participle; PL = plural; PRED = predicate; PRES = present; PRON = pronominal clitic; PST = past; RECP = reciprocal; REFL = reflexive; S = subject; SG = singular; TNS = tense.

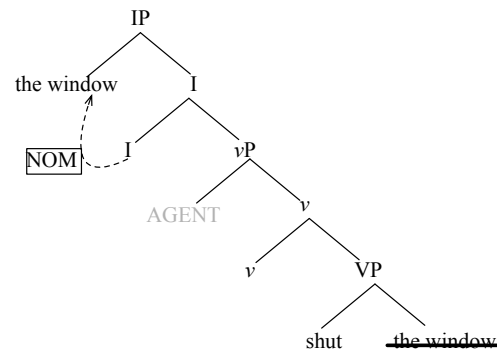
Extended Projection Principle (EPP) the THEME moves to Spec,IP and checks nominative Case.²

- (1) a. Der Wind hat das Fenster zugeschlagen. ACTIVE
 DET.M.NOM wind AUX DET.N.ACC window shut
 ‘The wind shut the window.’
- b. Das Fenster wurde zugeschlagen. PASSIVE
 DET.N.NOM window AUX shut.PART
 ‘The window was shut.’

(2) a. ACTIVE



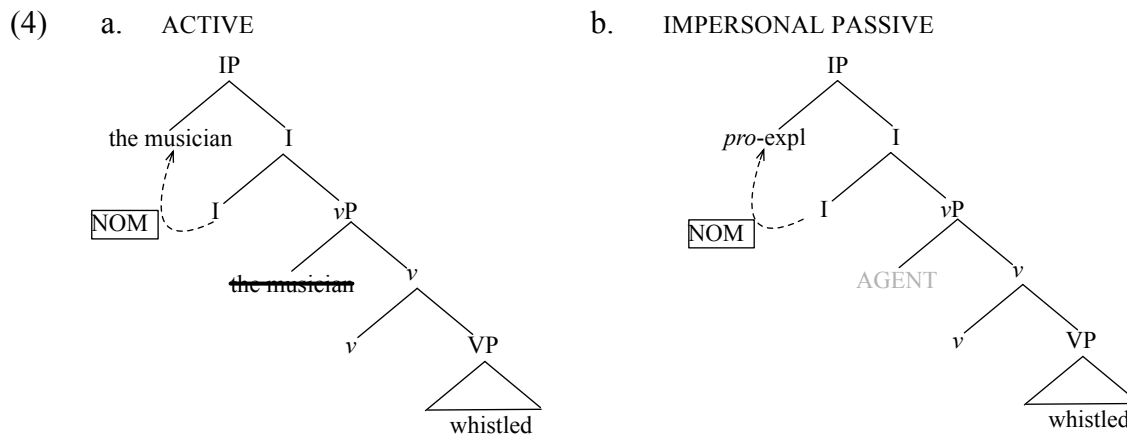
b. PASSIVE



Now consider a sentence with an intransitive (unergative) predicate, as in (3). Unlike English, German allows for the passivization of unergative predicates (3)b. As in canonical passives, the AGENT is suppressed, but unlike in canonical passives, there is no THEME, and hence, no argument is realized as the grammatical subject. This construction is known as the *impersonal passive*. According to some German scholars (Sternefeld 1985, Safir 1985, Grewendorf 1989) impersonal passives are derived by suppressing the AGENT argument and inserting an expletive *pro* in Spec,IP. According to this analysis then, German is a very selective *pro* drop language: it only has expletive *pro*.

- (3) a. Der Musiker pfeif-t. ACTIVE
 DET.M.NOM musician whistle-3SG.S
 ‘The musician is whistling.’
- b. Gestern wurde gepfiffen. IMPERSONAL PASSIVE
 Yesterday AUX whistle.PART
 ‘Yesterday whistling was going on.’

² We assume that there is a syntactic operation that insures that all DPs are Case-licensed. For convenience we adopt the current assumption that this is expressed in terms of Case checking, but nothing critical hinges on the precise mechanism involved.



The puzzle we are concerned with in this paper has to do with a curious restriction on the interpretation of the suppressed AGENT. To see this restriction consider the sentences in (5). In its active version, the verb *pfeifen* ‘to whistle’ is compatible with either a human AGENT, such as *Musiker* ‘musician,’ or a non-human AGENT, such as *Teekessel* ‘teakettle,’ (5a). However, the impersonal passive can only be interpreted as referring to whistling done by humans, not by teakettles (5b).

- (5) a. Der Musiker/Teekessel pfeif-t. ACTIVE
 DET.M.NOM musician/teakettle whistle-3SG.S
 ‘The musician/teakettle is whistling.’
- b. Gestern wurde gepfiffen. IMPERSONAL PASSIVE
 Yesterday AUX whistle.PART
 ‘Whistling was done (by someone/*something).’

A second and related puzzle has to do with the fact that in a canonical passive the suppressed AGENT can be realized as a *by*-phrase (6a). But the same is not true for an impersonal passive where the realization of a *by*-phrase leads to ungrammaticality (6b).

- (6) a. Das Fenster wurde vom Wind zugeschlagen. PASSIVE
 DET.N.NOM window AUX by.DET.M.DAT wind shut
 ‘The window was shut by the wind.’
- b. *Es wird vom Musiker gepfiffen. IMPERSONAL PASSIVE
 It AUX by.DET.M.DAT musician whistled.PART
 ‘There was whistling by the musician.’

We have now seen two properties that differentiate canonical passives from impersonal passives. First, while canonical passives allow for the realization of the suppressed AGENT in the form of an adjoined *by*-phrase this is not the case with impersonals. Second, while canonical passives allow for non-humans to function as suppressed AGENTS, impersonal

passives display an H-restriction on the suppressed AGENT. These differences are summarized in Table 1.

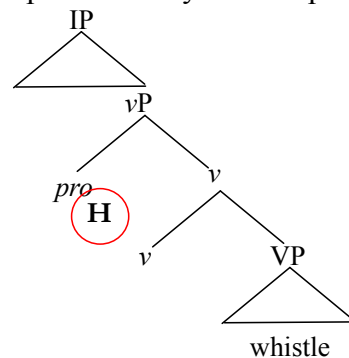
	Canonical passive	Impersonal passive
<i>By</i> -phrase possible	✓	✗
Non-Human agent possible	✓	✗

Table 1: Differences between canonical and impersonal passives

The H-restriction observed with impersonal passives is curious if we assume the standard analysis according to which the AGENT argument is suppressed. How can an argument that is no longer available in the syntax be part of the semantic interpretation of this construction? Recall also that adjoined *by*-phrases are ruled out in impersonal passives. What this means is that there is neither an external argument nor an adjunct to impose the human restriction on. This raises the question as to what is responsible for the H-restriction.

As a first step to understanding the H-restriction, we develop an analysis of the impersonal passive construction according to which this is not really a passive in the sense that the AGENT is not suppressed. This allows us to formalize the observation that “the impersonal passive does not involve any passive semantics” (Abraham and Leiss 2006: 2). We propose that the demoted subject is a silent argument (*pro*) associated with Spec,vP, as in (7). Similar proposals have been made for impersonal passives in other languages including Polish (Maling 1993) and Icelandic (Maling and Sigurjónsdóttir 2002). This analysis provides a straightforward account of the impossibility of a *by*-phrase with impersonal passives: since the AGENT is in Spec,vP it cannot also be realized as a *by*-phrase. Regarding the H-restriction associated with the AGENT, previous analyses have observed that it exists, but so far it has always been stipulated as such (e.g. Abraham and Leiss 2006).

(7) A non-passive analysis of impersonal passives



The question we set out to answer is why this H-restriction on *pro* should hold. We address this question in the next section.

3. Humanness as a licensing mechanism for impersonals

In this section, we develop our main idea in more detail. Given that *pro* in impersonal passives does not occupy a Case position (i.e., it remains in Spec,vP) it has to be licensed in some other manner. We propose that the H-restriction serves as an alternative mechanism to Case-licensing. We begin by defining the notion *licensing* as in (8).

- (8) Licensing =_{def} A mechanism to ensure visibility of a syntactic object in a particular position.

Case licensing is a specific type of licensing that targets full nominal phrases (DPs). We define *Case-licensing* as in (9).

- (9) Case Licensing =_{def} A mechanism to ensure visibility of a full DP in a particular position.

Given the definitions in (8) and (9), Case-checking (or Case assignment) serves as a licensing mechanism. In fact, since the inception of the Case filter (Rouveret and Vergnaud 1980, Chomsky 1981) Case-licensing has been taken to be a necessary licensing mechanism for all nominal expressions. However, it has since been shown that Case is not a universal licensing mechanism (Gil 2001, Danon 2006, Evans and Levinson 2009, Diercks 2012, Wiltschko 2014, Levin 2015, a.o.).

To see this, consider the Hebrew data in (10). Danon 2006 observes that in Hebrew Case-licensing is restricted to full definite DP arguments.³ That is, full DP arguments require the presence of the accusative marker *et* (10a). However, indefinite nominals which are - by hypothesis - nominal phrases smaller than DPs cannot be preceded by the accusative Case marker (10b).

- (10) a. Dan kara *(et) ha-itonim.
 Dan read ACC DEF-newspapers
 ‘Dan read the newspapers.’
- b. Dan kara (*et) (kama) itonim.
 Dan read ACC (some) newspapers
 ‘Dan read (some) newspapers.’

(Danon 2006: 979)

This suggests that Case-licensing is a requirement for full DPs only, and that it does not apply to nominal arguments smaller than DPs, such as NPs or PhiPs. The latter are structurally defective in the sense that they are not maximal extended projections; cf. Cardinaletti and Starke 1999. Given that all syntactic arguments need to be licensed, and assuming that Case-licensing applies to full DPs only, it follows that defective nominals

³ Definite DPs include nouns overtly marked by the definite article *ha-*, pronouns and proper names.

have to be licensed in some other way. Assuming that *pro* in impersonals is structurally and referentially defective (see section 4 for independent evidence), it follows that *pro* has to be licensed by a mechanism other than Case. We propose that the H-restriction serves precisely this function. The human content licenses *pro* in the absence of Case. Note for completeness that it has long been established that structurally defective nominal expressions can be licensed in the absence of Case, namely in the form of *noun-incorporation* (Mithun 1984, Baker 1988). This is an operation that results in the realization of an object noun within the verbal complex, as shown by the contrast in (11).

(11) Samoan

a. Po 'o āfea e tausi ai e ia tama no NI
 Q PRED when TNS care PRON ERG he child
 'When does he take care of children?'

b. Po 'o āfea e tausi-tama ai 'oia NI
 Q PRED when TNS care-child PRON ABS.he
 'When does he baby-sit?'

(Chung 1978, as cited in Mithun 1984: 850)

However, noun incorporation is only possible from a position that is c-commanded by the verb and hence is available to objects, but not subjects (Baker 1988). Since *pro* in impersonal passives functions as the (thematic) subject, it follows that noun incorporation is not available as a licensing mechanism in this construction. We argue that H-licensing, i.e., licensing by the nominal's intrinsic semantic content is another nominal licensing strategy (see section 7 for more discussion of H-licensing).

The hypothesis that human feature content and noun incorporation have the same function is consistent with Evans' (1997) suggestion that the two are in complementary distribution. He observes that noun incorporation is primarily used for non-human event participants whereas pronominal reference is the preferred strategy for human event participants.

4. The Human restriction on Hebrew impersonal *pro*

Our analysis rests on the assumption that Case is restricted to full DPs. We propose that *pro* in impersonal passives is structurally defective and as such is unable to be Case-licensed. However, thus far we have not seen any independent evidence that *pro* is structurally defective. In this section we discuss data from Hebrew that provide independent evidence that impersonal *pro* is structurally defective in a way that referential (personal) *pro* is not. Since referential *pro* is used to refer to a specific discourse referent we adopt the standard convention and represent it with an arbitrary referential index (*pro_i*).

The Hebrew system of verbal agreement falls into two distinct paradigms. In the past tense, verbs agree with their subjects in person, number and gender as shown in Table 2.⁴ In contrast, in the present tense, verbs agree with their subjects in number and gender, but not in person. This is shown in Table 3.

PAST 'wrote'	Singular		Plural	
	masculine	feminine	masculine	feminine
1	<i>katavti</i>		<i>katavnu</i>	
2	<i>katavta</i>	<i>katavt</i>	<i>katavtem</i>	<i>katavten</i>
3	<i>katav</i>	<i>katva</i>	<i>katvu</i>	

Table 2: Verbal agreement for past tense

PRESENT 'is writing'	Singular		Plural	
	masculine	feminine	masculine	feminine
---	<i>kotev</i>	<i>kotevet</i>	<i>kotvim</i>	<i>kotvot</i>

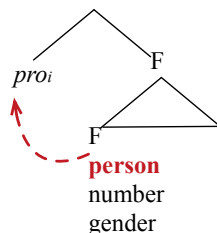
Table 3: Verbal agreement for present tense

What is crucial for our purpose is the fact that person agreement is necessary to identify referential pro_i . This is illustrated by the data in (12) and schematized in (13): referential pro_i is licensed only in sentences with a past tense verb (12a)/(13a); the present tense verb is not compatible with referential pro_i (12b)/(13b).

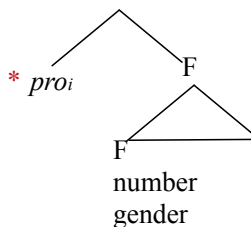
(12) a. ani/ pro_i axal-ti glida
I/pro eat.PST-1.SG ice cream
'I ate ice cream.'

b. ani/hu/ $*pro_i$ oxel glida
I/he/pro eat.PRES.M.SG ice cream
'I am/he is eating ice cream.'

(13) a.



b.



While sentences with verbs in the present tense do not allow for referential pro_i , they do allow for impersonal pro , which is restricted to being interpreted with a non-specific

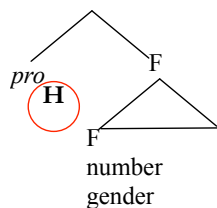
⁴ The same pattern of agreement is also found in the future tense.

human reference.⁵ This is shown in (14): impersonal *pro* is compatible with both present and past verbs.

- (14) a. *pro* šotim hamon mic ba-'arec
 drink.PRES-PL a lot juice in.the-country
 'People drink a lot of juice in Israel.'
- b. *pro* šatu hamon mic ba-yamim hahem
 drink.PST.3.PL a lot juice in.the-days those
 'People drank a lot of juice in those days.'

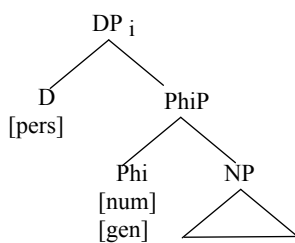
The data above suggest that number and gender agreement is sufficient to identify impersonal *pro*, as schematized in (15).

(15)

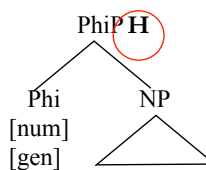


We argue that the difference between referential pro_i and impersonal *pro* is syntactically conditioned. While referential pro_i is associated with a full DP structure (16a), impersonal *pro* is structurally defective because it lacks the DP layer (16b).

(16) a.



b.



We have now argued that Hebrew presents us with independent evidence for the claim that impersonal *pro* is structurally defective. The structural difference between referential and impersonal *pro* has a number of correlates, summarized in Table 4.

⁵ All tenses also allow for expletive and quasi-argument (weather) *pro*.

	Referential <i>pro</i>	Impersonal <i>pro</i>
Syntactic type	DP	small nominal
Specific reference	✓	✗
[person]	✓	✗
Structural Case	✓	✗
Must have human referent	✗	✓

Table 4: Correlates of structural defectiveness

Under our analysis, the complementarity of the requirement for Case and a human referent is not an accident since we have argued that the H-restriction is an alternative to Case-licensing.

From what we have seen thus far, the H-restriction on impersonals may be specifically associated with silent impersonals (i.e., *pro*). How do overt pronouns behave in this respect? We turn to this question in the next section.

5. The Human restriction on German impersonal *man*

The German impersonal pronoun *man* has the same distinctive properties as impersonal *pro*. In particular, *man* can only be interpreted as human, as shown in (17). While the verb *pfeifen* ‘to whistle’ is compatible with a human and a non-human agent, if *man* is used as the subject, it has to be interpreted as a human whistling (17a). This mirrors the effect we saw for impersonal passives where we argued that the agent position is associated with an impersonal *pro* which is subject to the H-restriction (17b).

- (17) a. Man pfeif-t.
 IMPERS whistle-3SG
 ‘Someone/*something is whistling.’
- b. Gestern wurde *pro_H* gepfiffen.
 Yesterday was whistle.PART
 ‘There was (someone/*something) whistling yesterday.’

Next we show that *man* lacks person features, i.e., it is inherently personless (cf. Egerland 2003 for Swedish, Ackema and Neeleman 2016 for Dutch, a.o.). This can be gleaned from the fact that the referent of *man* includes the speaker (1st person), the addressee (2nd person), as well as other humans (3rd person). This can be seen in (18) where the assessment that one cannot display this kind of behaviour necessarily affects everyone, including the interlocutors.

- (18) In ein-em vornehm-en Restaurant tut **man** das nicht -
 in a-DAT sophisticated-DAT restaurant do.3SG IMPERS that not
 ich nicht, und du nicht, und sonst auch niemand.
 I not and you not and otherwise also nobody
 ‘In a sophisticated restaurant, one doesn’t do that - not me, not you, and no one else.’

This behaviour would be unexpected if *man* was intrinsically restricted to 3rd person. Assuming that *man* is personless raises the question as to why it always triggers 3rd person agreement. We submit that it does so by default.

Related to its intrinsic personlessness, we further propose that *man* lacks number features (i.e. is intrinsically numberless). Evidence for this comes from the fact that *man* can serve as an antecedent for the singular reflexives *sich* (19a), as well as the plural reciprocal *einander* (19b). Similar arguments have been used to support claims that cognate impersonal pronouns in other Germanic languages are also intrinsically personless and numberless (Egerland 2003 for Swedish, Ackema and Neeleman 2016 for Dutch, a.o.).

- (19) a. **Man** muss **sich** zwei Mal am Tag die Zähne putz-en.
 IMPERS must.3SG REFL two times on.the day the teeth clean-INF
 ‘You should brush your teeth twice a day.’
- b. In Österreich gib-t **man einander** zu Weihnachten Geschenke.
 in Austria give-3sg IMPERS RECP to Christmas presents
 ‘In Austria people give each other gifts at Christmas.’

As before, the assumed absence of number features associated with *man* raises the question as to how it triggers singular agreement. Again, we suggest that this is merely default agreement.

Another property that *man* shares with impersonal *pro* is the fact that it lacks specific reference. In particular, there are two ways for a nominal to lack specific reference: it can have generic reference or it can have non-specific reference. And crucially both are possible interpretations for *man* (cf. Zifonun 2000: 237, as cited in Giacalone Ramat and Sanso 2007). On the one hand, in (20), *man* is interpreted as referring to all humans driving cars and hence is interpreted generically.⁶ In (21), on the other hand, *man* is interpreted as referring to some non-specific individual whose identity is not known. Hence it has non-specific indefinite reference.

⁶ Interestingly, *man* cannot be interpreted as denoting the kind human as illustrated by the example in i)

- i) *Man* stammt vom Affen ab.
 ≠ humans evolved from apes
 = one evolved from apes

This suggests that reference to kinds requires a full DP structure, which *man* lacks.

(20) **Man** darf beim Auto-fahren nicht text-en.
 IMPERS may at.the car-driving not text-INF
 ‘One must not text while driving.’

(21) **Man** hat letzte Woche bei uns ein-gebrochen.
 IMPERS has last week at us in-break.PART
 ‘Someone broke into our house last week.’

Crucially, *man* is not compatible with specific reference, as illustrated in (22). In particular, *man* cannot introduce a discourse referent and as such cannot serve as the antecedent for cross-sentential anaphora. It cannot, for example, antecede the personal pronoun *er* ‘he’ (22).

(22) **Man_i** hat letzte Woche bei uns eingebrochen.
 IMPERS has.3SG last week at us in-break.PART
 ***Er_i** hat nichts gestohlen.
 He has nothing steal.PART
 ‘Someone broke into our house last week. He didn’t steal anything.’

Another property that impersonal *pro* and *man* share is the fact that they are Caseless. This can be deduced from the fact that *man* can function neither as an accusative Case-marked direct object (23a), nor as the oblique Case-marked object of a preposition (23b).

(23) a. *Ein Blinder kann **man** nicht sehen. *ACCUSATIVE
 A blind.man can IMPERS not see-INF
 ‘A blind man cannot see one.’

b. *Es wird von **man** gepfiffen. *OBLIQUE
 It AUX by IMPERS whistle.PART
 ‘Whistling was done by someone.’

This suggests that *man* cannot bear structural Case, and hence it cannot appear in positions that require structural Case. The only position in which *man* is licit is the subject of a tensed clause (24).

(24) **Man** darf beim Auto-fahren nicht texten.
 IMPERS may at.the car-driving not text-INF
 ‘One must not text while driving.’

This raises the question as to how *man* is licensed in this position. It certainly appears that it bears nominative Case. We propose that this is just an illusion, and that in (24), *man* is realized with default Case. On independent grounds we know that German default Case is nominative: it is morphologically unmarked and in the absence of a Case-

assigner, nominals are realized as nominative (unlike in English where they are realized as accusative).

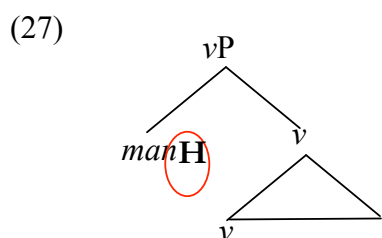
(25) Q: Wer will komm-en?
 who want.3SG come-INF
 ‘Who will come?’

A: Ich/*mich
 I/me

(26) Q: Who wants to come?

A: me/*I

We thus hypothesize that *man* is Caseless and H-licensed in Spec,vP, as schematized in (27).



In this section, we have seen evidence that the H-restriction is not restricted to impersonal *pro*. Rather, the overt impersonal pronoun *man* shows the exact same behavior as impersonal *pro* found in the so called impersonal passive construction in German and as the impersonal subject of active and stative clauses in Hebrew. Their shared properties are summarized in Table 5.

	<i>man</i>	Impersonal <i>pro</i>
Syntactic type	small nominal	small nominal
Specific reference	✗	✗
[person]	✗	✗
Structural Case	✗	✗
Must have human referent	✓	✓

Table 5: *Man* and impersonal *pro* behave alike

Given that impersonal *man* and impersonal *pro* display identical behaviour the question arises as to whether all impersonals exhibit this cluster of properties. We address this question in the next section.

6. Other impersonals

We show here that not all impersonals are structurally deficient, and hence not all impersonals share the same cluster of properties. Consider, for example, the 2nd person pronoun in (28) which can be interpreted either as indexically referring to the addressee, as in the first interpretation of (28), or as picking out people in general, as in the second. The latter use is known as the impersonal use of indexical pronouns. See Zobel 2011, Gruber 2013 for detailed discussion of this phenomenon.

- (28) **Du** darfst beim Autofahren nicht text-en.
 You may-2SG at.the car-driving not text-INF
 = i) ‘You must not text while driving.’
 = ii) ‘One must not text while driving.’

Crucially, indexical pronouns are Case-licensed even if they are interpreted as impersonals. This can be seen based on the fact that unlike *man*, the indexical can be used as an accusative Case-marked direct object, as shown in (29).

- (29) Beim Autofahren kann **dich** das Texten ablenk-en.
 at.the car-driving can you.ACC the texting distract-INF
 = i) ‘Texting distracts you when you are driving.’
 = ii) ‘Texting distracts one while driving.’

The fact that indexicals used as impersonals can be Case-marked suggests that they are not H-licensed. The difference between impersonal *man* and the impersonal use of indexicals suggests that impersonals can be constructed in different ways. While both types of impersonals are restricted to humans, this seems to come about in different ways. Impersonal *man* is subject to an inviolable H-restriction, which functions as its licensing mechanism. We suggest that the interpretation of impersonal indexicals follows from their intrinsic specification as 2nd person, and that this is ultimately due to the fact that speech act participants are typically human.⁷

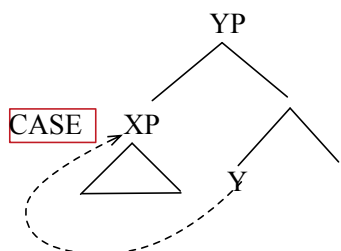
7. Conclusion

In this paper we have argued that the H-restriction associated with (a subset of) impersonal pronouns is contingent on their structural defectiveness. In particular, in the absence of a DP-layer, impersonal pronouns cannot be Case-licensed. However, since all syntactic objects have to be licensed to ensure visibility, such pronouns have to be licensed in some other way. We have argued that H-licensing serves as an alternative to

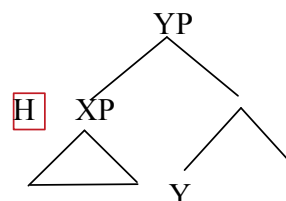
⁷ Similar considerations hold for 1st person pronouns (cf. Zobel 2011).

Case-licensing. While both mechanisms (Case and H) serve to license nominal arguments in a particular syntactic position, Case is a licensing relationship via an external head, while H-licensing is licensing through the intrinsic content of the nominal itself.

(30) a. Case-licensing

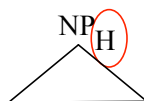


b. H-licensing

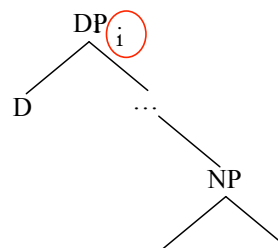


There remains the question as to the formal nature of H, and the implementation of H as a licensing strategy. Since H does not trigger agreement, we can assume that it is not a phi-feature. Note also that phi features are associated with heads, but H is associated with phrases. We submit that H is best viewed as an *index*, another kind of abstract linguistic object that is associated with syntactic phrases. More specifically, we consider H to be a *minimal index*. The reason for this is that it differs from referential indices of the familiar kind in important ways: A referential index serves to identify the referent of the argument it is associated with, but an H-index only serves to restrict the referent of its argument. Additionally, an H-index can be triggered by the content of the head noun, as in the case with the German impersonal pronoun, *man*, but it is not dependent on that content, as is clear from the fact that it can also be associated with *pro*, a contentless null pronoun. Referential indices, on the other hand, are independent of the content of the head noun. Rather, full DPs are associated with referential indices by virtue of their role in discourse (31)b. If this characterization of the nature of H is correct, then we have to conclude that indices are part of narrow syntax, contra Chomsky 1995.

(31) a.



b.



Introducing H as a nominal index leaves us with a series of questions for future research. These questions include the following: i) What is the relationship between a referential index and an H-index? ii) Does the H-index play a role in binding and control? iii) Can other kinds of semantic content function as a minimal index? Though these important issues remain to be addressed, it is clear that the postulation of an H-index is a

step towards understanding the requirement that certain syntactic positions must be filled with a human argument.

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