Impersonal indexicals: *one*, *you*, *man* and *du.*

Sophia A. Malamud

Abstract.
Impersonal pronouns are pervasive in world’s languages; boundaries between personal and impersonal paradigms are porous. Thus, in many languages, 2nd-person pronouns can be impersonal (i), and vary under the influence of quantificational adverbs like *always* and *rarely*.
(i) In those days, you always/usually/rarely lived to be 60.
Additionally, dedicated impersonal pronouns may have a special association with the speaker, as argued for English *one* (Safir 2004, Moltmann 2006, in print) and German *man* (Kratzer 1997) (ii).
(ii) a. One can see this picture from the entrance. (from Moltmann 2006).’
b. Es war klar, dass man sich nie mehr wiedersehen würde. (from Kratzer 1997)
   ‘It was clear that MAN REFL never again see.again would
   It was clear that we will never see each other again.’

This paper presents a comparative investigation in the interpretation of impersonal pronouns in English and German, each of which shows signs of both indexicality and impersonal, variable interpretation. The analysis places these pronouns within the pronominal paradigms of English and German, presenting a novel combination of independently-motivated type-shifting mechanisms (Pustejovsky 1995) and an expansion of the general theory of pronominal features (Kratzer 2009). I argue that distinct elements in the semantics of the items are responsible for the varying impersonal and the indexical behaviours. This is a step towards understanding the processes that take pronouns from personal to impersonal category, or back.

1. **Impersonals and their study.**
Impersonals present important challenges to formal semantics and pragmatics. Functionalist literature (Myhill 1997, Siewierska 2008) defines a broad function of agent defocusing associated with passives and impersonals across languages. These are termed ‘items with arbitrary interpretation’ or ARBS\(^1\) in a recent formal study by Malamud (in print). Scholars have described as ‘arbitrary’ the interpretations of pronouns and null syntactic elements (PRO, pro) that do not involve antecedents or bound-variable interpretations (Jaeggli 1986, Lebeaux 1984, Cabredo-Hofherr 2002, inter alia). In such constructions, the element in question is pragmatically demoted with respect to topic/salience computation (Prince 2003, Malamud in print). Short passives fit this description; thus, impersonal constructions in which the arb is the ‘logical subject’ (e.g., agent) can be thought of as asyntactic passives (Prince 2003).

From the formal point of view, arbitrary constructions in European languages present a bewildering array of properties, encompassing morphological passives, valency-altering verbal clitics and affixes, such as the Romance SE/SI, dedicated impersonal pronouns such as *man* in German, and

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\(^1\) The term ‘arbitrary items (arbs)’ extends from Spanish 3rd-person plural null pronouns (i) (Suñer 1983, example from Cabredo-Hofherr 2002), which in turn follows usage for agents of infinitival clauses (ii) (e.g., Lebeaux 1984).
(i) Tocan a la puerta.
(ii) [CP PRO To write a dissertation] is hard
   *knock.3pl on the door* ‘Someone’s knocking on the door’ (lit. ‘They’re knocking on the door’)

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one in English\(^2\); and impersonal or generic uses of 2\(^{\text{nd}}\) person singular\(^3\) and 3\(^{\text{rd}}\) person plural pronouns. A careful examination of their semantic and pragmatic properties, however, shows that arbs fall into two natural classes (Malamud in print) – from the pragmatic point of view, those that simply decrease the prominence of the logical subject (passives and 3\(^{\text{rd}}\)-person plural arbs fall into this category) (Malamud in print), and those in which the denotation of the logical subject does not participate in the salience/topichood computation at all (Prince 2003)\(^4\). The discourse-inert arbs that form the latter class cannot serve as antecedents for discourse pronouns.

In this study, I will consider a subset of the discourse-inert arbs in English and German – those that have a use in which they refer to the speaker or hearer (at least in some dialects of the languages in question). This indexical use makes their semantics relevant in the debate about the nature of indexicality (Kaplan 1989, Schlenker 2003, Anand and Nevins 2004, inter alia), and raises the issue of the featural composition of these arbs and, more generally, the interaction of personal and impersonal pronominal paradigms. While much work addresses features of personal pronouns (cf. Kratzer 2009), the realm of impersonals remains underexplored. This paper begins to address this gap, seeking to answer the questions, what are the features of impersonals? What are the restrictions on processes that take pronouns from personal to impersonal category, or the other way?

The particular constructions I will consider are the specialised impersonal pronouns man in German (1a) and one in English (1b), both of which have a first-person-related use, as well as the 2\(^{\text{nd}}\)-person pronouns in English and German, which can be used impersonally\(^5\) (1).

(1)  
   a. Man sieht nur mit dem Herzen gut.  
   (German, from Der Kleine Prinz)

2 Dedicated impersonal pronouns exist in a number of Germanic languages (Kratzer 1997, Egerland 2003, among others), many of them etymologically arising from nouns meaning ‘person’ (Egerland 2003). The two dedicated impersonals in (1) represent etymologically unrelated instances of this strategy. English impersonal one is historically related to the French on from Latin homo (Safir 2004), while German man originates with the German noun Mann (Lockwood 1968).

3 Impersonal use of the 2\(^{\text{nd}}\)-person singular pronoun or its weak counterpart is widespread, but not universal in Indo-European languages.

4 Several researchers present evidence that agentivity is important in licensing this demotive use of dedicated impersonals like German man (Egerland 2003, inter alia). Thus, Cabredo-Hofherr (2010) states that man cannot appear in episodic sentences with unaccusative and passive verbs, except on its speaker-inclusive meaning (i). In such contexts, man would demote the subject denotation, removing it from the list of potential topics (Prince, Malamud in print). In (i), the subject is a theme/patient, not agent, suggesting that man is specially designated for agent demotion (cf. Kallulli 2007).

(i) a. Gestern wurde man verprügelt.  
   b. Gestern kam man um 10 Uhr an.
   Yesterday was MAN beaten up.  
   Yesterday came MAN at 10 hour to
   Does not mean: ‘Yesterday someone was beaten up.’  
   ‘Yesterday someone arrived at 10 o’clock.’

Like all impersonals considered in this study, man is completely discourse-inert. Cabredo-Hofherr (2010), inter alia, suggests that agent-demotion and discourse inertness of man result from featural deficiency. However, as I show below, German man does not conform to the pattern characteristic of impersonal pronouns like French on, which Egerland (2003) analyses as featurally deficient. Thus, arguably, pragmatic properties (such as agent-demotion) of man are separate from its semantic properties. Here, I only address the latter, and leave the former to a separate investigation.

5 2\(^{\text{nd}}\)-person impersonals in English and German share agreement and phonological form of the 2\(^{\text{nd}}\)-person singular pronouns. In English dialects that distinguish plural and singular forms, only the latter can be used impersonally (i, ii are in South Philadelphia English, [yz] is 2\(^{\text{nd}}\) plural), just as in German (iii). This is not a universal restriction; e.g., in French both tu (2\(^{\text{nd}}\) singular) and vous (2\(^{\text{nd}}\) plural) can be impersonal (Benveniste 1966, Laberge 1977, inter alia).

i. [yz] could come over any time. (*impersonal interpretation, only plural addressees meant)
ii. …you never know. (impersonal interpretation ok, and is the one meant here)
iii. Damals musstet ihr vorsichtig sein.

Back.then must.2pl you.pl careful be  
‘In those days, you guys had to be careful.’ (only deictic reading available)
As I will show, these impersonals are not only pragmatically similar in being discourse-inert, but they also share important semantic properties. They are all capable of indefinite-like quantificational variability in contexts where definite NPs fail (Section 3.2); yet can yield bound-variable and donkey-pronoun readings in configurations where indefinite NPs cannot (Section 3.3).

In addition, the arbitrary items that have a reading inclusive of the speaker or hearer present a puzzle. On the one hand, unlike other indefinite NPs, these constructions are used indexically; and on the other, unlike typical indexicals, they exhibit indefinite-like variability under the influence of adverbial quantifiers. This is remarkably similar to the challenge presented by shifting indexicals in attitude reports (Kaplan 1989, Schlenker 2003, inter alia). Indeed, some previous work suggests that one way to explain the variability of *you* is to analyse it as a shifting indexical and to treat the modal and adverbial quantifiers that cause indefinite-like variability as context-shifting operators, termed ‘monsters’ in Kaplan (1989) (Malamud 2005).

However, I will argue that the variable-indexical contradiction is only apparent, because distinct elements in the semantics of the items are responsible for the variable and the indexical aspects of the pattern. In fact, in addition to their variability with adverbial quantifiers, *man* and *one* also shift under the influence of attitude verbs. Following Kratzer (1997) and Moltmann (2006), I argue that this latter pattern is an instance of *de se* interpretation which shifts in logophoric contexts, and not true indexical shifting. The proposal derives the full range of data without positing the existence of monsters (context-shifting operators) outside the domain of attitudes. I propose that impersonals, like other pronouns, are composed of features (Kratzer 2009). Following Egerland (2003), I argue that at least some impersonals, including the ones here, have lexical phi-feature specification.

The structure of this paper is as follows. In the remainder of this section, I will address background and existing literature on the semantics and features of impersonal pronouns, arguing that no adequate analysis exists to-date. Against this background, Section 2 will present my proposal for the semantics of the impersonal pronouns *man*, *one*, *you*, and *du*, in particular arguing that they form a natural class: they are semantically indefinite-like (introducing new variables), and they are indexical. The section presents two theoretical frameworks that I employ: the compositional theory of pronoun features offered in Kratzer (2009), and a lexical semantics framework, the Generative Lexicon, developed in Pustejovsky (1995) and much subsequent work. The section also introduces the notion of a *qua* object. The theory of pronoun features put forth in Kratzer (2009) is expanded to accommodate impersonal pronouns, and the features are combined using both the mechanisms detailed in Kratzer

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6 Another type of arbs is represented by 3rd-person plural pronouns or pro, which are convincingly argued in Alonso-Ovalle (2001) and Malamud (2006) to be semantically identical to their ‘personal’ definite counterparts.

7 Egerland (2003) claims for dedicated impersonals Swedish *man*, French *on*, and Italian *si*, that “impersonal pronouns are not endowed with any inherent phi-feature specification,” unlike generic uses of *you*. My proposal makes German *man* different from these pronouns (and like *you*), despite many semantic and pragmatic similarities between them. In combination with the idea that semantics of impersonal pronouns is linked to their lexical features, this casts doubt on Egerland’s claim. Further investigation is needed to explore the relationship between the semantics of Swedish *man*, French *on*, and Italian *si* and their featural composition; this investigation falls outside the scope of the present paper.
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(2009), and independently-motivated type-shifting mechanisms proposed in Pustejovsky (1995, 2007).

Section 3 discusses the consequences of this proposal for the distribution of the impersonals under investigation. The concluding section 4 presents a discussion of remaining issues, including implications for the impersonal pronoun paradigms.

1.1 Uses, semantics, and features of impersonals.

A number of researchers compared impersonal pronouns within a single language and cross-linguistically; however, no unified theory of their semantics and features has emerged which can capture the full distribution of the four pronouns in this study. What is this distribution?

Generic. First, all four pronouns can appear in generic sentences – that is, in sentences where overt or implicit adverbial/sentential quantification is present (3a), including antecedent clauses of donkey conditionals (3c). In such cases, the quantificational force of the impersonal seems to vary depending on the sentential operator (3a,c). This use is usually termed ‘generic’ in the literature (Egerland 2003, Cabredo-Hofherr 2010, inter alia). Without special contextual support, definite pronouns cannot yield such quantificational variability effect (QVE), while indefinites can.

Bound-variable. Second, all four pronouns can receive essentially bound-variable readings in contexts where definite personal pronouns get such readings, including consequent clauses of donkey conditionals (3b, c).

(3)

a. Damals wurde man normalerweise/selten 60 Jahre alt. (German)

‘In those days, one usually/rarely lived till 60.’ (English)

b. Man behauptete, man habe meine Akte verloren c. ‘If you do it, you usually get killed.’

MAN claimed MAN had my file lost

‘They claimed they had lost my file.’

Existential. Third, in episodic sentences, German man can be interpreted existentially (this use is termed ‘arbitrary’ in Egerland 2003 and subsequent authors) (4a), unlike definite NPs. One is ungrammatical in episodic contexts, while you and du can only be deictic to the hearer there.

Anaphoric. Fourth, all four pronouns can be interpreted as anaphoric to a previous instance of an impersonal (usually, the same pronoun) in prior discourse (4b). For one, you, and du, this may be treated as a case of modal subordination, as in (4c); in every case, the interpretation of the second-occurrence impersonal resembles that of a definite personal pronoun.

8 These categories are not theoretically significant – the list is to ensure discussion of the full distribution of the pronouns.

9 It has been noted by many researchers that, unlike other items with existential interpretations, dedicated impersonal pronouns like the German man cannot provide antecedents for other discourse and donkey pronouns of any kind. This has not always been the case: Lockwood (1968) gives (i) (New High German, Fischart, 16th century).

(i) Wann man ein Ding recht lernt und kann, so mag er sich wohl rühmen deß. (p. 84)

‘If a person learns one thing right, then he may well boast of that.’

Prince (2003), arguing against a proposal in Koenig and Mauner (1999) for French on, points out that this discourse-inertness must be separate from the semantic properties of these pronouns (cf. Malamud in print), since indefinites like someone, implicit agents of passives, and impersonals have similar interpretations in episodic sentences, but differ with respect to pragmatics: regular indefinite subjects are extremely likely to be pronominalised in subsequent discourse; implicit agents of passives, while dispreferred as antecedents of discourse pronouns, are nevertheless possible; while impersonals are completely ruled out. Prince (2003) and Malamud (in print) use Centering Theory (Grosz, Joshi, and Weinstein 1995) to model these pragmatic distinctions.
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(4)  
a. Man hat ein Haus abgebrannt, um das Versicherungsgeld zu kassieren.
   *MAN has a house burned in order the insurance to cash*
   ‘Someone burned a house PRO to get the insurance.

b. Dann ist man entkommen.
   *Then is MAN escaped*
   ‘Then, that person/someone escaped.’

c. You often see this. Then, you’re shocked.
   *Then is MAN escaped*
   ‘Then, that person/someone escaped.’

Indexical-like. Finally, all four pronouns, at least in some dialects of the languages in question, have some connection to conversational participants (see (14, 16) in the next section). Specifically, for one, Safir (2004) and Moltmann (2003, 2006) claim a connection to conversational participants. Safir proposes that one denotes a constant function which includes both speakers and audience in its domain, but does not give an explicit semantics. Moltmann argues that one denotes a variable, which is bound by a generic quantifier (5a). The variable is bundled with a special kind of intensional predicate, the property of someone taking the perspective/putting themselves in the shoes of the variable’s referent, or simulating this referent (5a). The entire statement containing one then becomes a de se property (5b), which the speaker self-ascribes (and invites the audience to self-ascribe when they accept the statement). ‘By simulating others, an agent pretends to be those other people and thus can ascribe properties to them by self-ascribing those properties.’

(5)  
a. Gnx can see the picture from the entrance(<x, λz[z = y]>)
   b. λy[Gnx can see the picture from the entrance(<x, λz[z = y]>)]

She proposes that one contains the features [1st person] and [generic] which capture the presence of this speaker orientation and of the generic operator, and claims that, unlike indefinite expressions that introduce a variable, one is not subject to quantificational variability.

Turning to impersonal uses of second-person pronouns/pro more generally, prior research notes that these uses are restricted to generic uses (Alonso-Ovalle 2002 for Spanish, Laberge 1977 and Laberge and Sankoff 1979 for French, Egerland 2003 for Swedish, Italian, French, Kitagawa and Lehrer 1990 for English, inter alia), like impersonal one. Alonso-Ovalle proposes a denotation for the impersonal 2nd person pro in Spanish that picks out an individual other than the speaker from the reference situation s₁₀. By stipulation, episodic sentences are always interpreted with respect to s, that includes only the speaker and the hearer, and so 2nd person pro ends up being synonymous with the regular 2nd person pronoun. However, this denotation makes incorrect predictions for some generic sentences, which are interpreted with respect to s, of the type described in the restrictor of the generic

10 Alonso-Ovalle (2002) claims that the Spanish 2nd-person weak pronoun, used impersonally, does not show QVE with Q-adverbs, citing (i). Actually, while some speakers agree that QVE is absent with raras veces (i), others find these readings are, in fact, present. Also, Q-adverbs other than raras veces cause QVE in simple (ii) and donkey-sentences (iii). So, this Spanish impersonal does show QVE with Q-adverbs, like English you and German du (Section 3).

i. (En las fiestas de ese departamento) raras veces bebes vino. ‘At the parties of that department, people rarely drink wine.’
   *In the parties of that department few times drink.2SING wine*
   Alonso-Ovalle’s claim: NOT ‘…, few people drink wine’

ii. En aquella época, siempre/normalmente/rara vez/a veces vivías hasta cumplir los 60.
   *In that time always usually rarely sometimes lived.2SING till to complete the 60.*
   ‘In those days, you always/usually/sometimes lived to be 60.’

iii. Si engañas a la mafia, siempre/normalmente/rara vez vives para contarla.
   *If cheat/lie.2SING to the Mafia always / usually / rarely live.2SING to tell it.*
   ‘If you lie to the Mafia, you always/usually/rarely live to tell it.’
operator or adverbial quantifier. For instance, if the speaker of (6), uttered in the restaurant, is actually a worker in the restaurant, Alonso-Ovalle’s denotation predicts that the domain of quantification actually excludes the speaker. However, the sentence is best understood as including the speaker, and asking the hearer to place him or herself into the speaker’s shoes.

(6) En este restaurante, trabajas como un esclavo. (Spanish)

In this restaurant work.2s like a slave
‘In this restaurant, you work like a slave.’

Egerland 2003 considers the impersonal uses of 2nd person pronouns in several languages; while he does not propose a semantics for these items, he argues that they are, featurally, 2nd person singular pronouns (and thus incompatible with plural agreement). My proposal will be compatible with this.

Finally, Malamud (2005) proposes that you is a true indexical 2nd-person pronoun which can shift its reference with quantificational adverbs (Q-adverbs) or the generic operator, similar to the shifting of indexicals under attitudes, as in Amharic (7, example from Schlenker 2003: p.25).

(7) Scenario: John says “I’m a hero.”

ğon ğägna nä-ňň yəl-all. (Amharic)

John hero be.PRF-1sO 3M.say-AUX.3M

(literally: ‘John says that I am a hero.’) ‘John says that he is a hero.’

Technically, she implements this hypothesis as in (8), where (b) ensures that the hearer’s empathy tracks the referent of you even on its impersonal use (required empirically, cf. sections 2; 3.1).

(8) a. $[[\text{you}]^{\text{ec}}] = \text{addressee}(c)$ if the hearer is placed in c and attending to c, and undefined otherwise

b. the addressee of an imaginary context is simply the (soul of the) addressee of the actual speech context placed in somebody else’s shoes.

In episodic sentences, no additional contexts are introduced, and you is simply the addressee of the actual speech act. However, in a sentence with a Q-adverb, the reference of you varies with the imaginary contexts, picking out the person in whose shoes the addressee places him or herself.

This hypothesis is untenable, however, since Q-adverbs can hardly be analysed as quantifiers over contexts (de Swart 1991). The first problem is that, unlike attitude verbs, Q-adverbs like rarely may quantify over situations, times, or worlds; however, no speech acts are naturally associated with them, and thus no speech contexts (no author/attitude holder, and no addressee). Second, infinitely many possible imaginary speech/thought acts, and therefore, infinitely many imaginary contexts, may be associated with each person living in those days in (9a); this makes it hard for an adverb to create the effect of counting people living in those days. In addition, impersonal you may be used in situations where no speech act is possible11, as when you denotes a syntactic object (9b).

(9) a. In those days, you rarely/usually lived to be 60.

b. In SpecIP, you are causing the whole derivation to crash.

Finally, to account for empathy-tracking of impersonal you, quantification over contexts with the definition in (8a) alone is not sufficient. We must restrict ourselves to the worlds in which the hearers or attitude holders imagine themselves in someone else’s shoes (8b). This is an additional assumption in Malamud’s (2005) proposal. In fact, as I will argue below, this is the only assumption we need to derive the impersonal uses of you and du. Once we put the hearer into someone else’s shoes, we do not need to employ quantification over contexts to derive the QVE data.

Turning to the German impersonal man, Kratzer (1997) and Cabredo-Hofherr (2010) examine the distribution, semantics, and features of this pronoun (see also Zifonun 2001). Kratzer 1997

11 Thank you to an anonymous reviewer for mentioning this point.
distinguishes speaker-inclusive (16) and speaker-exclusive (3a, 4a) uses of the pronoun. The former, but not the latter use, she claims, has non-nominative forms *einen/einem*12 and can be modified by predicative *als*-NPs13. She proposes that the two semantic components of *man* are a 1st-person ‘core’ (actually a *de se* pronoun that shifts under attitudes), and a determiner that introduces ‘the group of the speaker’ in the case of inclusive, and ‘the anti-group of the speaker’ in the case of exclusive *man*.

The proposal suffers from several problems: first, the notion of ‘anti-group’ is not well-defined. Second, exclusive *man* does not exclude the speaker – thus, the speaker is normally part of the domain of quantification in generic uses (3a). Finally, the definiteness of *man* would prevent Q-adverbs from yielding the effect of quantifying over *man*, in most contexts (see section 3.2 for details).

In a recent study, Cabredo-Hofherr (2010) separates the use of *man* where it has existential meaning in episodic sentences (4a), from the generic *man* (3a), in addition to the speaker-inclusive use (16). The inclusive use (termed ‘specific’) is discussed little, but the existential and generic are said to differ in several respects. Unlike the generic use, existential *man* cannot be the subject of passives and ergatives, and cannot bind possessive pronouns in the same clause. Neither use supports intersentential anaphora with regular 3rd-person pronouns, and both uses support such anaphora with repeated *man*.

Cabredo-Hofherr advances two proposals to explain the binding and anaphora facts. The first one posits a lexical generic feature, which introduces the generic operator as a part of the meaning of generic *man*, while the existential *man* lacks such feature, causing the cluster of special properties (cf. Egerland 2003). Details remain to be fleshed out. The second proposal suggests that in episodic sentences, the singular possessive pronoun is incompatible with the plural existential *man*, and forces an inclusive interpretation. The main problem with this proposal is that inclusive *man* is, like existential *man*, semantically plural (interpreted close to ‘we’, not ‘I’, and supporting reciprocals).

Finally, I mention two theories that address impersonal pronouns more generally, and might be applicable to the four impersonals examined here: Egerland (2003) comparing Scandinavian *man* and French *on* with 2nd-person impersonals and Icelandic *maður*, and D’Alessandro and Alexiadou (2003) comparing items like Italian *si* with those like Abruzzese *nome*14. Egerland (2003) distinguishes the generic, arbitrary (existential), and inclusive uses of impersonals (cf. Cabredo-Hofherr 2004, 2010). His theory relies on the fact that human impersonal pronouns he examines share the following properties: they can trigger plural or singular agreement, they may have a generic or an arbitrary (existential) interpretation, and the latter use is precluded in episodic (‘specific time reference’) contexts with ergative or passive verbs, and, finally, these pronouns cannot be syntactic objects. He goes on to explain all of these properties through a featural deficiency of the impersonals in question:

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12 These non-nominative forms have a different (and later) origin that *man*, and thus might have distinct properties from the nominative: ‘The oblique cases are supplied by the numeral *ein*’ (Lockwood 1968), leading to the development of a corresponding nominative impersonal pronoun *einer* (different from *einer/irgendeiner* ‘anyone’), similar to *man*.

13 My informants varied in their acceptance of sentences with non-nominative forms; all but one of those who liked the sentences containing these forms accepted them in non-inclusive scenarios. For instance, an anonymous reviewer gives (17a), where *einem* cannot mean we there even on the ‘my country/team’ reading of we.

Similarly, my informants tended to accept sentences with *als* in non-inclusive scenarios; several accepted (17b) as perfectly fine; those who rejected (17b) as strange, accepted other examples with exclusive *als*-NP-modified *man*.

14 I am selecting only one study regarding Italian *si* from a wealth of research on this item and impersonal SE/SI in Romance in general, because the theory in this comparative work is intended to apply to German *man*. I do not cite other research on *si*, because SE/SI are different enough from German *man* to warrant careful consideration in a different paper. Likewise, I omit mention of French *on*, which is a cognate of English *one*, and in many ways similar to German *man*, because its distribution and interpretation differ from *man* and merit a separate investigation.
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they “radically lack inherent lexical content with regard to the categories of person and number (and presumably also gender),” except for a [+human] feature restricting the denotation to humans.

He contrasts these with pronouns like impersonal ‘you’ (which is 2nd-person and singular). Indeed, the 2nd-person impersonals (and one) cannot show plural concord (10).

(10) a. Damals konntest du ein guter Mensch/*gute Menschen sein und trotzdem Wahlkämpfe gewinnen

Then could you a good person / good people be and still elections win

b. ‘In those days you could be a good person/*good people and still win elections.’

c. In this institute, one is usually a happy camper/*happy campers.

d. In this institute, you (guys) are good people/happy campers. (plural deictic only, *impersonal)

Thus, pronouns that are featurally underspecified, are compatible with flexible number/gender agreement. The generic uses of these impersonals are ‘licensed by a generic operator.’ The arbitrary reading is not a result of any feature, but rather of feature underspecification. Finally, Egerland argues that the relationship between VP-internal arguments and the governing verbs is mediated by lexical features. Featural deficiency then precludes arbitrary impersonals from appearing in object positions, or as derived subjects that originate in the VP, such as subjects of passives and ergative verbs. This deficiency is alleviated by the generic operator in the case of generic uses of impersonals.

German man provides evidence against a theory that links together the properties Egerland describes. In particular, while it allows both generic and arbitrary readings, and on the arbitrary use cannot be a subject of passives or ergatives (Cabredo-Hofherr 2010), man does not have the flexibility with respect to gender and number that Egerland observes for Scandinavian man, French on, and Italian si. With respect to verbal agreement, nominal concord, and possessive pronouns, German man is always singular and masculine (Zifonun 2001), as is one (11). This is also the default agreement in English and German. Neither one nor man supports plural nominal/adjectival concord (in contrast to French on) (11). On the other hand, unlike one16, man can support reciprocals (12), suggesting that it is compatible with semantic plurality (cf. footnote 15 on reciprocals). At the same time, man allows, and, in fact, prefers, semantically plural interpretations. Inclusive man is always semantically plural17.

(11) a. In diesem Institut ist man gewöhnlich ein schlauer Mensch / *schlaue Leute. (German)

In this institute is MAN usually a smart person / *smart people

Intended: ‘In this institute, a person is usually smart.’

b. In this institute, one is usually a happy camper/*happy campers. (English)

(12) a. Man grüsste einander wieder. (German, from Cabredo-Hofherr 2004:6, ex.17c)

MAN greeted each other again.

‘People greeted each other again.’

b. *?One used to say hello to each other. (English)

In English, the 2nd-person impersonal can antecede reciprocals (i). Note that in English singular group-denoting NPs can support reciprocals as long as the verbal agreement is plural, as it is here (iii); whereas German group singular nouns can support neither plural agreement nor reciprocals (ii).

i. In those days, you couldn’t talk to each other in the street.  

ii. *Das Kommittee konnte mit einander sprechen.

(English)

The committee could with one other talk

iii. ‘The committee were able to talk to each other.’ (English)

Judgments are shaky and inconsistent on this; in general, as one slowly loses ground in spoken American English, it becomes increasingly difficult to get consistent data about it.

16 This is not a property of speaker-inclusive uses of impersonal pronouns cross-linguistically: for instance, Swedish man is singular on its speaker-inclusive use (Egerland 2003).
I thus conclude that singular agreement morphology is the default agreement for *man*, which is semantically plural or unspecified for number; at the same time, *one* seems to be semantically, as well as morphologically singular. While this is a discrepancy in the syntax-semantics interface that calls for further investigation, the upshot is that the interpretation and distribution of German *man* cannot be explained through mere feature deficiency.

D’Alessandro and Alexiadou (2003) present a feature-geometric analysis focusing on the differences between impersonal pronouns that allow a speaker-inclusive reading, and those that do not. On the speaker-inclusive use, pronouns such as Italian *si* require the inclusion of the speaker in the reference, while on other uses, e.g. generic, the speaker may be present or absent in the set the pronoun ranges over. Speaker-inclusion, they generalise, correlates with the aspect expressed in the clause – imperfective aspect removes, while perfective aspect causes inclusiveness. At the same time, ‘introducing an object which strictly correlates with the speech act’ (an indexical or a deictic pronoun) forces an inclusive reading on the subject *si*, regardless of the aspect. D’Alessandro and Alexiadou explain these generalisations via underspecification in the person feature of *si*, which can be overcome either by agreement with the imperfective aspect (causing an arbitrary or generic interpretation), or through a link to the speech act, resulting in an inclusive reading. Thus, unlike Egerland (2003), they consider (a subset of) human impersonals to be featurally underspecified, rather than deficient. While German *man*, in contrast to *one*, *you*, and *du*, indeed presents a distinction between speaker-inclusive and non-inclusive uses, its properties are different from *si*. First, there is no correlation between perfective aspect/specific time reference and inclusive use – in fact, for speakers of some dialects, inclusive *man* is restricted to generic sentences, while existential *man* may occur in perfective/episodic ones. In addition, introducing an indexical object often serves to force an exclusive, rather than inclusive, interpretation of *man* (cf. Kratzer 1997).

Thus, we have no general theory that accounts for the distribution of the various uses of *one*, *man*, *you*, and *du*. In what follows, I strive for such a theory.

2. The proposal.

2.1 The proposal, informally.

I propose that *man*, *one*, *you*, and *du* are, like other personal and impersonal pronouns, composed of features whose denotations combine to form the denotations of the pronouns. Setting aside the uses on which they receive bound-variable-like readings, the four impersonal pronouns considered here contain features that introduce two elements into the semantics of these pronouns: an indexical component, and an indefinite-like variable. Thus, the four impersonals form a natural class, exhibiting both indexicality and variability.

In *one*, the indexical and variable components are present simultaneously: every use of *one* is a generalisation drawn either on the basis of the speaker’s own experience (e.g., as in (13), if this is the actual experience of the mother) or via the speaker taking the perspective of (simulating) each person in a relevant set (e.g., as in (13), if the speaker empathises with such parents). Noting this, Friederike Moltmann (in print) argues that *one* includes a reference to the speaker. Unlike the direct 1st-person

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18 D’Alessandro and Alexiadou (2003) follow Harley and Ritter (2002) in assuming that (personal) 3rd-person pronouns are specified as [-speaker/-hearer] (rather than unspecified for inclusion of speaker/hearer, as assumed in my proposal).
19 The impersonal pronoun *one* is losing ground in American English; its meaning differs significantly from speaker to speaker. For many of my informants, *one* had no connection to the 1st person. This is unproblematic for the account offered below, and the denotation of *one* in this dialect will fall out from the proposed denotations for other pronouns.
reference in a pronoun like we, the 1st-person connection inherent in one consists of the speakers putting themselves into the shoes of the person that the variable introduced by one stands for (the speaker ‘simulating’ another person) (Moltmann in print).20

(13) One raises kids, sacrifices so much for them, and then they move where one cannot even see the grandchildren!

This speaker-simulation is the basis for the generalisation in the one-sentence; the speaker’s empathy becomes especially apparent in sentences where one appears alongside other impersonals, such as you, or they, and where emotional stances of all the referents are significantly different (14). The notion of simulation involves taking someone else’s perspective, which may, but does not have to, include emotional involvement as in (14).21 Similarly, in sentences with impersonal you/du, hearers’ empathy is solicited, so that they are invited to put themselves into the shoes of (or to simulate) each person in the domain over which you varies (S is ‘speaker’, H is ‘hearer’, si. is ‘simulates’).22 On the impersonal use, you and du retain a connection to the second person through hearer simulation (14).

(14) Speaker-empathy with one, hearer-empathy with you:23

a. In those days in France, they could put one/you in jail for stealing bread. (S/H si. victim)

b. In those days, they/one/you could be thrown in jail for this kind of thing. (noone/S/H si. victim)

c. Damals konnte man dich fuer den kleinsten Fehler ins Gefaengnis stecken. (H si. victim)

Then could MAN you.ACC for the smallest error in jail stick

d. ‘In those days, one could stick you in jail for a smallest error.’ (S si. jailer, H si. victim)

e. Damals konntest du einen fuer den kleinsten Fehler ins Gefaengnis stecken. (H si. victim)

Then could you MAN.ACC for the smallest error in jail stick

f. ‘Those days, you could stick one in jail for a smallest error.’ (S si. victim, H si. jailer)

At the same time, the new variable introduced in every use of one makes the pronoun susceptible to

20 Simulation Theory is primarily a theory of attitude attribution – a person makes third-person attributions by simulating (taking the point of view of) another person, and self-ascribing the attitude (Gordon 1986 and subsequent work, a.o.).

21 For instance, in (i) the speaker (or, for you, the hearer) takes the perspective of the destructive agent without, in fact, emotionally sympathising with that agent. (i) One/You can’t destroy our spirit.

22 These contrasts between different impersonals were reported by 17 German informants, and 20 English informants, who were presented with variants of these sentences with accompanying scenarios (varying order of presentation). The actual empathy-tracking reported was more varied – some informants accepted contexts (described in English in all cases) where man/one did not track either of the conversational participants, while du/you tracked the speaker and/or hearer, while other informants accepted contexts in which man/one tracked the speaker, while du/you tracked the hearer. The two groups of informants overlapped more for German (2 informants did not have speaker-inclusive man) than for English (several of the informants did not seem to have any speaker-empathy associated with one).

23 The relationship between the impersonal and deictic uses of the 2nd-person pronouns is apparent in languages where the shape of the impersonal varies with the hearer. E.g., in German, in contexts where the formal 2nd-person pronoun Sie would be used for hearer deixis, Sie can also be impersonal (i). This is not true in all languages that have impersonal 2nd-person pronouns: impersonal use of the formal 2nd-person pronoun is marginal in Russian, and impossible in Dutch.

(i) Damals mussten Sie vorsichtig sein. (Historian addressing a scientist, about the Middle Ages)

back.then must.SG you SG careful be ‘In those days, you had to be careful.’

24 These conclusions were drawn on the basis of several kinds of evidence: a corpus of naturally-occurring examples of one and you in spoken English, collected by the author; judgments collected from over 20 American English speakers, in which some corpus examples were presented out-of-the-blue, and most likely context of use solicited, and other corpus examples were presented with scenarios incompatible with speaker simulation. Finally, both naturally-occurring and translated examples with du were discussed in a similar fashion with 15 speakers of German.

25 Sentences where one is not introduced in the subject position tend to be degraded. This is not true for you, e.g. (i)

(i) They started making fouls that could hurt your players. So, as a coach, you need to protect your players. (ESPN)
quantificational variability under the influence of a sentential quantifier (15). The impersonal use of *du* and *you* also has the variable component responsible for quantificational variability, as in (15), which means ‘All/Most/Few/Some people in those days lived to be 60’, depending on the adverb.

(15) In those days, *one/you* always/usually/rarely/sometimes lived to be 60.

In contrast to *one*, *you*, and *du*, *man* has uses that are indefinite-like but not indexical (3a,4a), in addition to uses where *man* includes the speaker (16, example from Zifonun 2001). Speaker inclusion in *man* not a matter of simulation, but of direct inclusion in the referent of *man*.

(16) Es ist eine Ewigkeit her, dass man sich nicht gesehen hat. (Kl. Mann, Mephisto, 10)

*It has been an eternity since we saw each other.*

The latter use is subject to dramatic dialectal variation. Several of my informants only have speaker-exclusive *man* (Exclusive-only Dialect). Many others restrict the use of inclusive *man* to non-episodic contexts (Generic Inclusive Dialect). A few of my informants allow inclusive man in both generic and episodic sentences, without any consistent distributional restrictions (Unrestricted Dialect). Finally, Kratzer (1997) reports on a dialect (which one of my informants may be a speaker of) in which non-nominative forms of *man* (accusative and dative forms *einen* and *einem*) disallow speaker-exclusive readings (17a); *man* modified by a predicative NP in an *als*-phrase is also restricted to speaker-inclusive use, making sentences like (17b) unacceptable (Kratzer (1997) Dialect).

(17) a. Im 8 Jahrhundert haben einem die Raubritter oft die ganze Ernte weggenommen.

*In the 8th century, robber-knights often robbed one of one's entire harvest.*


*As guardian(s) of the law has MAN to.me explained that I could here not live*

Both this dialectal variation (17), and the clear distinction between the two uses of *man* (3,4,16) point to the ability of *man* to appear with or without an indexical-like element.

Thus, the relationship between the variable and indexical elements in the semantics of the impersonals varies: in *one*, *you*, and *du* it is akin to identity, yielding a singular pronoun; at the same time in *man* the relationship is additive: the variable element remains the same between both uses of *man*, while the indexical component is added to create a plural *we*-like meaning on the inclusive use.

In the rest of this section, I spell out this proposal formally. A comparison of predictions I make with the empirical evidence follows in Section 3.

2.2 Theoretical background.
2.2.1 Pronoun and their features.

Kratzer (2009) offers a constructionist theory of features for personal and bound-variable pronouns; here, I adopt the main premises of her framework. Pronouns are not lexical primitives, but are rather constructed from (primitive) features, which come in a variety of denotation types. The pronouns enter derivations with the minimum set of features that will give a desired interpretation – these are, thus, interpretable features. Subsequently, pronouns receive their remaining features from anteceding lexical

26 Speaker-inclusion with *man* must involve direct deixis, as with 1st-person pronoun *we*, rather than general inclusion in the domain of reference (the way that the speaker is included in the domain of 3rd-person NP *people*). So, Kratzer (1997) uses sentences like (17b) which pragmatically exclude the speaker, to force an exclusive reading.
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items via agreement – these are, thus, uninterpretable features.

To illustrate using personal pronouns, indexical features [1st] and [2nd] are referential to the speaker and hearer, and (Kratzer states) are of type \( e \) (18). In contrast, 3rd-person pronouns are built from descriptive features, e.g., gender, sort, etc., which have cumulative denotations of type \(<et>\), and a [def] feature with the denotation of the definite article, again yielding type \( e \) (19). Plural features [group] and [sum] participate in the making of plural pronouns, in different ways (18). Finally, since descriptive features have cumulative denotations (i.e., include both atomic and plural entities), feature [singular] imposes a presupposition of atomicity (19a).

Generally, features appear as unordered sets (Kratzer 2009) with a single syntactic category label (18b). However, features appearing under different heads may then combine in a syntactic tree to form a single pronoun (19a). Thus, both unstructured and structured feature combination is possible.

Language-specific lexical insertion rules then specify pronunciation for various feature combinations. In accordance with the ‘Subset Principle’ of Distributed Morphology, an item is inserted if it matches a (nonempty) subset of the features present, and no other item is a better match (Halle 1997, Embick and Noyer 2006). Below are examples of pronouns with their features and meanings:

(18)

a. \([\{\text{we}\}\{\text{1st}\}]\) \(\text{c,i} = \text{group(HEARER(c)+SPEAKER(c))} = \)
= the contextually-determined plurality incl. the sum of you, me and possibly non-participants

b. \([\{\text{we}\}\{\text{1st}\}]\) \(\text{c,i} = \text{the contextually-determined plurality containing me}

(19)

a. \([\{\text{she}\}\{\text{def}\}\{\text{fem}\}]\) \(\text{c,i} = \lambda x.x \text{is an atom (σ (λx.female(x)))) =}
= σx.x is an atom, female(x) = the female

b. \([\{\text{they}\}\{\text{def}\}\{\text{fem}\}]\) \(\text{c,i} = \text{σx.female(x) = the females (one or more)}

I extend this theory by introducing features that play a role in building impersonals. However, the denotations illustrated above are not rich enough to capture the complex behaviour of lexical items or pronominal features during semantic composition, as we will see in Section 2.2.3. To capture the insight that feature-composition behaves in the same ways as the composition of lexical denotations, I draw on the lexical semantic framework of the Generative Lexicon.

2.2.2 Lexical denotations and their modes of composition

The Generative Lexicon (Pustejovsky 1995, 2007, among others) proposes richly structured lexical representations, consisting of four levels: argument structure, event structure, qualia structure, and lexical type hierarchy. The level of argument structure specifies the number and type of arguments a lexical item takes, while the event structure specifies the events and their subparts that the lexical denotation involves. We will not refer to event structure here.

The most novel enrichment of the denotations by comparison to frameworks like Montague Grammar is represented in the Qualia Structure of an item. Qualia can be thought of as Aristotelian modes of explanation, representing specific subparts of lexical denotations. There are four qualia: Constitutive quale describes the relation between an object and its constituents or proper parts; Formal quale distinguishes the object within a larger domain; Telic quale specifies the purpose, function, or role of the object; Agentive quale details factors involved in the origin or “bringing about” of an object. For instance, below is the lexical representation for the word meatball.

(20) \([\text{meatball}]^{ci} = \Gamma \text{Arg1: x Constitutive: meat(x) Formal: ball(x)}\)

27 Following Anand and Nevins (2004), I use the evaluation index \( i \), which, like the context \( c \), includes the world and time of evaluation, and also the author (judge, self) and the audience.
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Telic: $\lambda y \lambda e. \text{Eat}(e, y, x)$
Agentive: $\exists e' \exists z \text{make}(e', z, x)$

The constitutive quale specifies that the object this word applies to is made up of meat. The formal quale tells us that the type of this object is a ball – this is a subtype of a physical object which is a subtype of $e$. These subtyping relations are specified in the lexical type hierarchy. The telic quale allows us to classify meatballs as food (whose purpose is to be themes in eating events). Finally, the agentive quale tells us that meatballs are artifacts, which come into being via an event of making.

These rich lexical representations can combine in various ways. The simplest method of composition is Selection (Type Matching): the type (or a subtype of the type) a function requires is directly satisfied by the argument. This is illustrated below. The word eat selects for food in its complement, which meatball is.

(21) $\llbracket \text{Mary ate the meatball} \rrbracket^{ci} = \text{ate}(e, m, \lambda x \text{meatball}(x))$

When a type mismatch arises, certain environments permit a different method of composition – Coercion, in which the type a function requires is imposed on the argument. A kind of coercion is Exploitation – taking a part of the argument’s representation. For instance, the verb enjoy selects for an event function in its complement (contrast it with like, which permits any type, e.g., propositions).

(22) a. I like/enjoy going to the movies.
b. I like/*enjoy (for John) to go to the movies.
c. I like/*enjoy that John is going to the movies.

In the example below, the complement of enjoy denotes not an event function, but rather a meatball. However, the meatball (whose type is a subtype of $e$) contains an event function in its telic quale. Enjoy coerces the meatball by exploitation of the telic quale, as shown below.

(23) $\llbracket \text{Mary enjoyed the meatball} \rrbracket^{ci} = \llbracket \text{Mary enjoyed eating the meatball} \rrbracket^{ci}$ (on result-of-eating reading) = $\exists e \text{enjoy}(m, \lambda e. \text{Eat}(e, m, \lambda x \text{pie}(x))) (e)$

In my proposal, I argue that pronominal features, like other lexical primitives, have denotations which include qualia structure, and participate in the semantic composition via both selection and coercion.

2.2.3 Qua objects

Regardless of the mode of composition used (selection or coercion), properties may be predicated of individuals via regular predication, or via Qua predication. The result of composing phrases or features denoting individuals (subtypes of type $e$) and those denoting properties is, in the case of regular predication, a proposition, but in the case of the qua predicate, it is a special intensional entity of type $e$ – a Qua Object.

In my proposal for the semantics of one, you, and du, I draw on a crucial insight from Moltmann (in print), who mentions that one can be modelled similarly to the as-construction (24), where one involves a generically quantified variable introduced “as someone whom the speaker simulates” (25). She models this using the notion of a qua object (Fine 1982), which consists of the

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28 Exposition is simplified from Pustejovsky (2007). Compatibility of GL-style denotations with quantification is still a work in progress (Asher and Pustejovsky 2006, Cooper 2007, inter alia); however, I use GL is to constrain type-shifting from individual-type features into properties – a fairly uncontroversial operation to begin with (cf. Partee 1986).

29 Note than Moltmann (2006) does not involve the notion of simulation in her account of one. She analyses one as a complex variable $<x, \text{relevant intentional agent’s self}>$, where the second part of the pair serves as a mode of presentation for the first part. Intuitively, this seems similar to the notion of simulation by the relevant agent’s self, and the relationship between the variable and indexical parts of one seems obscured, rather than simplified, by this notation.
variable $x$ and the property $\lambda y. \text{Simulates}(x, y)$ self-ascribed by the speaker (de se), on the basis of which the main predication applies to $x$ (25b).

(24)  
   a. John as a judge is excellent (though John as a father is pretty bad). 
   b. Superman as a Superman gets more dates than Superman as Clark Kent does. (Asher 2006, 3a)

(25) 
   a. One can see it$_1$ from the entrance. $\simeq$
   b. G$_n$ $[ \text{Can-see-from-entrance}(g(1), x \text{ qua } \lambda y. \text{Simulates}(x, y)) ]$

Following Moltmann’s (in print) account of one, I will model impersonals using the notion of a QUA OBJECT (Fine 1982), and draw parallels with the as-construction. According to Fine, a qua object is a special kind of intensional entity, consisting of a particular, say $a$ (its BASIS), together with a property, say $F$ (its GLOSS), and denoted by “$a$ qua $F$” (Fine 1982:100). Any referential NP has an option of referring to a qua object, rather than its basis. For instance, both options in (26) are references to the basis (the underlying person). However, (27a) is not a contradiction (is referentially opaque), because Superman and Clark Kent refer to different qua objects (27b, from Asher 2006).

(26)  
   a. Superman stood up. 
   b. Clark Kent stood up.

(27) 
   a. Superman is more successful with women than Clark Kent.
   b. Clark Kent/Superman as Superman is more successful with women than CK/S as Clark Kent.

   Some of the basic properties of qua objects are, first, that “for any particular $a$ and any property $F$ there is such a qua object, which exists at times and in worlds when and where $a$ is $F$” (Keller 2004, cf. Lewis 2003). Thus, “John qua judge” exists at times and in worlds in which John is a judge (28a).

Qua objects in Fine’s sense are different from their bases, and are identical only if they have the same glosses. Second, there is a vague but obligatory connection between the gloss and the main predicate: the latter applies “on the basis” of the former (Moltmann 1997). This provides a way to conceptualise regular predication of a qua object as a complex property (main predicate modified by the qua property) applying to the basis. Thus, in (28a), judge provides the relevant scale with respect to which John’s success is measured, while in (28b), John’s potential victimhood is the cause of his desire to flee. This connection can be thought of$^{30}$ as modification that obligatory applies to properties predicated of the basis (in a Centered logic (Joshi and Kuhn 1979) sense of predication, where any predicate is recast as a monadic predicate applying to the argument selected as the centre).

(28)  
   a. $[[\text{John as a judge is successful}]]^{e_1} = \text{successful (j qua judge)}$
   b. John as a potential victim of my malice wants to flee the country.

   This is reminiscent of referential opacity in de re modal predication, achieved via different counterpart relations: “in certain modal predications, the appropriate counterpart relation is selected not by the subject term but by a special clause” (Lewis 1971) (29). We can think of qua objects as latent subjects of modal predication, where the gloss selects the counterpart relation for the basis.

(29)  
   I (as a person) and my body (as a body) are such that they might not have been identical today.

   The formal proposal for the semantics and feature composition of impersonal pronouns below

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30 We might say that qua-object formation takes the generalised quantifier (GQ) denotation of the basis, and outputs a GQ with only those of the basis’ properties with inferential connections to the qua property. However, this raises technical issues (i). If and is sum-formation, and meet selects plural sum arguments, how qua predication can apply to John but not Mary? In (ii), the qua property must only apply to John, yet the sum applies to $e$-type objects. Generally, the qua property does not interact with scope-taking items (iv). Thus, I follow Moltmann in treating qua objects as type $e$ (iii,v). (i) John as a teacher and Mary met.  
   (ii) $(j.P.\text{-qua-teacher}(j){\downarrow}j.P.(m)(\text{met}){{?}})$ (iiii) met($<$ qua teacher $>$ $+$ m) 
   (iv) Every teacher as someone who cares about children signed the petition.  
   (v) $\forall x \text{ signed-p(<x qua cares>)}$
utilises the notion of the *qua* object, and draws on the proposals in Kratzer (2009) and the Generative Lexicon to explain how this semantics arises from the features of impersonal pronouns.

### 2.3 You, du, and one: the story.

A striking distributional fact about English *one*, impersonal *you*, and German impersonal *du* is that these items must be quantified by a sentential operator – a silent generic operator or Q-adverb (30) (Safir 2004, Egerland 2003, Moltmann 2006, Cabredo-Hofherr 2010, inter alia).

(30) a. In those days, one/you usually/rarely/sometimes lived to be 60.
   b. *This morning, one arrived late.
   c. This morning, you arrived late. (* impersonal, only deictic reading is available)

We can describe the absence of *you, du, one* from episodic contexts by using an uninterpretable [gn] (generic) feature requiring a sentential quantifier to apply. An IP containing a pronoun with this feature must be generic, either because of a sentence-initial [gn] feature interpreted as the silent generic operator (Moltmann 2006), or a Q-adverb marking the IP as generic (cf. Cabredo-Hofherr 2010).

Adopting [gn] into our arsenal, I propose these features for *one* and the 2nd-person impersonals:

<table>
<thead>
<tr>
<th>Pronoun</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>One</td>
<td>[se], [arb], [human], [gn]</td>
</tr>
<tr>
<td>You</td>
<td>2nd, [arb], [gn]</td>
</tr>
<tr>
<td>Du</td>
<td>2nd, [arb], possibly [human], [gn]</td>
</tr>
</tbody>
</table>

First, I propose a logophor-building feature [se] with the denotation of a *de se* pronoun (31a), which is responsible for the connection to the speaker in *one*. A pronoun containing [se] in the matrix clause will point to the speaker, since AUTH(i) in the matrix clause is simply AUTH(c), the speaker. Under attitude verbs, the index *i* is rewritten, in particular, shifting AUTH(i) to the attitude-holder.

The 2nd-person feature is directly deictic to the hearer, as expected (31b).

I propose a new impersonal-building feature [arb], which introduces a new (bare) variable into the interpretation (31c, compare and contrast with Kratzer’s (2009) bound-variable minimal pronouns).

(31) a. \[[se]_{i,c} = \text{AUTH}(i)\]\(^2\) (cf. Anand and Nevins’s proposal for *de se* pronouns).
   b. \[[2\text{nd}]_{i,c} = \text{HEARER}(c)\]
   c. \[[arb]_{i,c} = x\]

All three features are of type *e*, so no two of them can be combined from a feature set via function application. Nor can their denotations be put together using a pluralisation operation, since the pronouns involved are singular. For instance, unlike plurals, they cannot have plural adjectival/nominal

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31 While non-local, this relationship between [gn] in a pronoun and in the IP is akin to certain cases of case-valuation, and thus independently justified. For instance, adopting Pesetsky & Torrego’s (2001) proposal that uninterpretable features are misplaced interpretable ones, nominative case is achieved by valuing a misplaced tense feature on the DP. In constructions such as Icelandic (i, from Yip et al 1987, cf. Sigurðsson 1991,Schutze 1997, inter alia), the valuation on the nominative *disease* is by the main tense outside the local phase.

(i) Barninu virtist batna veikin. (Icelandic)
   The child seemed to recover from the disease.

32 I argue against the analysis of *one* in Moltmann (2006, in print), where sentences with *one* are properties self-ascribed by the speaker. This property-approach to *de se* (Chierchia 1989) will not work: as examples with both *one* and an impersonal *you* (i) show, we must be able to include one variable with the property of being simulated by the speaker, and another with the property of being simulated by the hearer.

(i) Then, one could throw you in jail for stealing.
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concord (10); so they are not generated by the features [\text{[sum]}([\text{se}], [\text{arb}])] or [\text{[sum]}([2^{\text{nd}}], [\text{arb}])].

Instead, one of the features becomes an as-phrase-like modifier for the other, selecting the gloss for the variable in question to create a qua object (32)\textsuperscript{33}. The resulting pronouns are of type e.

\text{(32) } ^{33}\text{a. } [\text{one}]^{c_1} \quad \text{(to be revised)} \quad \text{b. } [\text{you}]^{c_1} = x \text{ qua } \lambda y. \text{Sim}([\text{HEARER}(c), y])

How do the denotaions of [\text{se}] and [2^{\text{nd}}] in (31) give rise to the qua properties in (32)? As in many other cases of type mismatch (23), the [\text{arb}] feature combines with [\text{se}] or [2^{\text{nd}}] via coercion, exploiting the qualia structures involved. All conversational participants, including the ‘judge/author’ in the index parameter i, and the hearer of the context parameter c, are persons/communicating creatures (formal quale) whose role is to imaginatively place themselves into various situations – that is, to simulate other people (telic quale). Thus, a detailed representation for the denotation of [\text{se}] and [2^{\text{nd}}] is this:

\text{(33) } ^{a.} \text{Generative Lexicon representation for [se]} \quad ^{b.} \text{GL representation for [2^{\text{nd}}]}

\begin{align*}
x = \text{AUTH} (i) & \quad \text{Formal: } \text{person}(x) \quad \text{Telic: } \lambda y \lambda e. \text{Sim}(e, y, x) \ldots \\
\end{align*}

The silent as or the feature [\text{arb}] itself creates a coercive context, wherein the individual-typed [\text{se}] or [2^{\text{nd}}] yields the property contained in its telic quale, with existential closure of the event argument. The coerced property then applies to the individual variable introduced by [\text{arb}] to form a qua object.

In addition to [\text{gn}], [\text{arb}], [\text{se}], and [2^{\text{nd}}], another feature might be needed to fully describe the impersonal pronouns. One and du, but not you, are restricted to refer to humans (34)\textsuperscript{36}.

\text{(34) } ^{36} a. ‘If you’re in the SpecIP, then you’re ... crashing the whole derivation.’ (naturally-occuring) 

b. *If one is in the SpecIP, then one is... crashing the whole derivation.


\text{If } you \text{ in SpecIP stand } crash \text{ you the whole derivation}

\text{33 When impersonal you seems to involve both the speaker’s and hearer’s empathy, I propose to treat the speaker’s as pragmatically inferred. In (i), hearer empathy is solicited for a generalisation based on speaker’s experience; this can be modeled as an emphasis on speaker’s inclusion in the domain of the variable. In the dialect where impersonal you always involves the empathy of both speaker and hearer, I evoke a higher-level feature [Participant], of which [2^{\text{nd}}] is a sub-feature (Benveniste 1966, Farkas 1990). See footnote 42 for Dutch data supporting the use of this feature.}

\text{(i) Handing in an unsolved homework problem} You just can’t solve this problem!

\text{34 I am leaving the features unmarked for syntactic category, to remain theory-neutral in this respect.}

\text{35 Following the Generative Lexicon literature, both eventive and stative predicates contain an eventuality argument e. This argument may be exploited, as in (i) where the telic event is enjoyed, or existentially closed, as in (59).}

\text{(i) Mary enjoyed the book } \Rightarrow \text{ enjoy (m, } \lambda e. \text{read (e,m, tx book(x)))}

\text{Whenever not crucial for the argumentation, I omit the existentially closed eventuality arguments in my formulas.}

\text{36 Du is ok in (i), where one is strange for most informants. The animals are anthropomorphised; this informal use may be incompatible with one, used formal genres; or else, grammatical humanness is different in English and German.}

\text{(i) Als Huhn in einer Legebatterie hast du kaum Platz, um dich auch nur umzudrehen.}

\text{As hen in a laying cage have you hardly room for you even to turn around}

\text{‘As a chicken in a laying cage, you have no room even to turn around.’}
This restriction can come about in two ways. First, the property contained in the formal quale of [se] and [2nd] might join that contained in the telic quale in the case of one and du, but not you. This leaves unexplained why the formal quale is used in some, but not all cases, even in English. Alternatively, a descriptive feature [human] with the denotation $\lambda x.\text{person}(x)$ might be part of the feature-set. Then, if the [arb] (with or without the qua property coerced from [se] or [2nd]) combines with [human] via function application, we will arrive at $\text{person}(x)$ – a result of type $t$, rather than a pronoun of type $e$.

Kratzer (2009) mentions another way for features of type $<e,t>$ and $e$ to combine: non-restrictive modification, as for “John” in (35a), which yields a conventional implicature (CI) (35b).

(35)  
\begin{align*}
\text{a.} & \quad \text{John, who had to wait in line, finally got in.} \\
\text{CI:} & \quad \text{John had to wait in line.}
\end{align*}

\begin{align*}
\text{b.} & \quad \text{One can see the picture from the entrance. (ignoring the contribution of [se])} \\
\text{Assertion:} & \quad \text{Gn} \ x \ x \ \text{can see the picture from the entrance.} \\
\text{CI:} & \quad \text{person}(x)
\end{align*}

The modifier who had to wait in line introduces a conventional implicature (Potts 2005), without affecting the truth-conditions (35a). Under this proposal, the feature [arb] would contribute to the assertion, while the property of being human would enter the conventional implicature dimension.

This strategy will not work for one or du, however. CIs receive types that prevent them from interacting with any further operators (Potts 2005). So, a CI that results from applying $\lambda x.\text{person}(x)$ to the variable [arb] introduced retains the free variable (35b). Lethally, the same variable in the assertion will be bound in every sentence with one or du, since these pronouns require quantification (35b).

Instead, I propose that the denotation of [human] joins the gloss of the qua object (either as a second qua predication, or more adequately, by becoming a part of the same gloss as the denotation of [se]/[2nd]). While both using another feature and exploiting the formal quale yield the desired result, the etymology of one (from Latin homo ‘person’) suggests the feature [human] for that pronoun.

What is the result of combining [human], [se], and [arb]? Because of the opacity of qua predication, (i) $(x \qua \text{person}) qua \lambda y.\text{Sim}(\text{AUTH}(i),y)$, (ii) $(x \qua \lambda y.\text{Sim}(\text{AUTH}(i),y) qua \text{person}$, and (iii) $x \qua \lambda y.\text{Sim}(\text{AUTH}(i),y) \& \text{person}(y)$ are three different objects. Considering the existence of a dialect in which one does not have a connection to the speaker, while still being restricted to humans, I propose $(x \qua \text{person})$ as the denotation for one in this dialect, and therefore (i) as the most plausible choice. Turning to du, I remain neutral as to the proper combination of the two qua properties, since evidence reviewed so far does not allow me to choose between them.

I follow Kratzer (2009) in assuming that descriptive features are cumulative, and so [human] denotes one or more persons. Yet, one and du are both singular, triggering only singular agreement on the verb, supporting only singular nominal/adjectival concord, and not supporting plural reference. Thus, the feature [singular], introducing the presupposition that the denotation of the pronoun is an atom, must be part of the feature set making up one and du.

(36)  
\begin{align*}
\text{a.} & \quad \llbracket \text{one} \rrbracket^{ci} = (x \qua \text{person}) qua \lambda y.\text{Sim}(\text{AUTH}(i),y)
\end{align*}

---

37 This feature, which has the denotation $\lambda x.\text{person}(x)$ is independently needed in the inventory of pronominal features, since it participates in the building of gender-neutral human-denoting pronouns in languages like Finnish.
The denotations in (32b) and (36) derive the correct truth-conditions for sentences with impersonal *one*, *you*, and *du*, as shown for *you* in (37).

(37) you, rarely, lived to be 60

few’ [x qua $\lambda y. Sim(HEARER(c),y)] [\`x\$↑ live-to-60(x)] lambda-abstraction applies =>
few’ [\`u [x qua $\lambda y. Sim(HEARER(c),y)]&↑x=u][\`\$↑ live-to-60(x)] logical equivalence =>
few’ [\`u [u qua $\lambda y. Sim(HEARER(c),y)]][\`\$↑ live-to-60(u)]

GL-style feature denotations yield a natural explanation for the inability of [arb] to provide the gloss for the *qua* object that arises when it combines with [2nd]/[se], rather than the basis, as proposed: the participant features, but not [arb], have a property ($\lambda y.e. Sim(e,y,x)$) in their representations.

The Subset Principle ensures that the shape of 2nd-person pronouns is the same on personal and impersonal uses. This is because the (singular) 2nd-person pronoun matches both a subset of the feature-set \{[2nd], [arb], possibly [human]\}, as well as the singleton \{[2nd]\} feature-set (corresponding to the personal use), and no other item is a better match (Halle 1997, Embick and Noyer 2006).

2.4 *Man*: the story

*Man* has speaker-inclusive (16) and non-inclusive (39) uses. Let us first address the simpler non-inclusive use. I propose that the impersonal pronoun *man* on this use is built from the features [human] and [arb]. *Man* originated in a noun Mann ‘person’ and is restricted to refer to humans (38), suggesting the descriptive feature [human] is a part of its make-up.

(38) *Wenn man in Spec-IP steht, zerstört man die ganze Derivation.*

If *MAN in SpecIP stands crashes MAN the whole derivation*

As with *du*, *man* can be used to refer to animals (i), where I assume those animals are anthropomorphised.

(i) Als Huhn in einer Legebatterie hat man kaum Platz, um sich auch nur umzudrehen.

‘As a chicken in a laying cage, you have no place even to turn around.’
When I into the boarding.house returned, served MAN already the soup

‘When I returned to the boarding house, they were already serving the soup.’

(40) Damals wurde man selten 60 Jahre alt.

Then was MAN rarely 60 years old

‘In those days, a person rarely lived to be 60.’

Similarly to one, features [human] and [arb] combine not via function application (that would yield person(x), type t, not a pronoun). As before, the two features cannot combine using nonrestrictive modification giving rise to conventional implicatures, since that would leave an unbound variable in the CI, which may well be bound in the assertion (cf. 35).

I propose that non-inclusive man denotes the qua object (x qua λx.person(x)) (reference qua being a person, similar to the as-construction). This results from the feature-set {[human],[arb]}.

At the same time, we have conflicting evidence concerning plurality of man. On the one hand, semantically it permits both singular (41a) and plural (41b, Cabredo-Hofherr 2004:6, 17c) reference, suggesting that its denotation is plural. On the other hand, it allows neither plural agreement on the verb, nor plural nominal/adjectival concord. The concord facts are particularly striking, since in cases of syncretism, such as English you, plural concord is obligatory with plural reference (41c).

(41) a. In diesem Institut ist man ein schlauer Mensch. b. Man grüsste einander wieder.

‘In this institute, one is a smart person.’ ‘People greeted each other again.’

c. You are a happy person (cannot be said to plural addressees).

Thus, I propose that we have a case of a pronoun syntactically unspecified for number. Since the descriptive feature [human] is cumulative, it needs no additional component to permit plural reference. Without a specified number feature, man is unable to trigger number agreement on the verb or govern concord. Therefore, the default meaningless [singular] feature is inserted, triggering singular agreement and concord. The denotation and features of the non-inclusive man are elaborated in (42).

(42) \[
\text{[[man]]}_{c,i} = \text{x qua } \lambda x.\text{person(x) (non-inclusive)}
\]

(43) a. \[
\text{[[was MAN rarely 60 years old]]}_{c,i} = \text{few’ } [\text{λu } [u \text{ qua } \lambda y.\text{person(y)}] [\text{λu} \uparrow \text{live-to-60(u)}]}
\]

b. \[
\text{[[...served MAN the soup]]}_{c,i} = \exists e \exists x \text{ served(ty soup(y), x qua } \lambda x.\text{person(x), e)}
\]

In generic examples (40), the Q-adverb quantifies over the variable introduced by [arb], yielding QVE (43a). There is no existential closure in Dynamic Montague Grammar, since indefinites are dynamic existential generalised quantifiers (cf. Honcoop 1998). So, how can we derive the existential man in episodic sentences

As anonimous reviewer notes, Egerland (2003) says for Italian impersonal si, that if si were plural, sentences like (i) should be ruled out, since they involve singular concord. In fact, German man not only allows, but requires singular concord. However, both the plural *person, and the unmodified denotation of [human] include both singular atoms and pluralities, so singular concord is not ruled out by plural semantics, contra Egerland. To rule it out in cases like (ii), we need an additional presupposition (perhaps introduced by a plural feature) that the denotation involves only pluralities.

(i) Se si è il presidente si è di solito intelligente.

‘If one is the president, one is usually smart’

(ii) Se gli insegnanti sono il presidente, sono ...

‘If the teachers are the president, they are...’
(39) from the bare variable in (42)? Following prior authors, I suggest that man gets help from the verbal domain. Episodic sentences involve an existential quantifier over eventualities. This quantifier binds the free variable, forcing the same scope for the main eventuality and man (44, after Cabredo-Hoffherr 2010). Thus, man fails to interact with scope-taking elements (quantifiers or intensional operators), unlike a true indefinite. 

(44) Man hat mir schon wieder mein Rad geklaut. b. Jemand hat mir schon wieder mein Rad geklaut.

Note that (42) is identical to my proposal for one in the dialect where it has no connection to the speaker (except one is singular, and is not permitted in episodic contexts). The proposal derives other empirical facts: as a 3rd-person pronoun, man triggers corresponding agreement; in quantified sentences the domain may include the speaker, since (s)he is not specially excluded.

Turning to inclusive man, several analyses yield a denotation like that of the 1st-person plural pronoun, common to all dialects that have inclusive man. If we take similarity with wir ‘we’ literally (Kratzer 1997), both pronouns should have features {[group],[1]} (Kratzer 2009). Yet, the impersonal is pronounced man (not wir) and triggers 3rd-person agreement. Also unlike wir, man is not a kind (45).

(45) a. ??/Eines Tages wird man weitverbreitet sein. b. *Man ist überall.

Intended: ‘Someday, we/humans/our kind will be widespread.’ ‘We/humans/our kind are everywhere.’ Alternatively, if we take man to be a de se, rather than a 1st-person pronoun, its features could be {[group],[se]}. Still, the homophony with non-inclusive man remains mysterious. A more unified analysis for both uses of man is supported by the fact that in the Unrestricted Dialect, and in generic contexts in the Generic Inclusive Dialect, there is no grammatical way to force man to be inclusive (this was the case for all but one of my informants who had inclusive man). We might assume that inclusive and non-inclusive man both have the 3rd-person denotation (42), with the inclusion of the speaker inferred pragmatically. However, the existence of a dialect reported in Kratzer (1997), which has two grammatically distinct versions of man, and of the Exclusive-only Dialect is then unexplained.

To accommodate the dialectal variation with respect to inclusive man, I propose that speaker-inclusive man in Unrestricted and Kratzer (1997) dialects is minimally different from the non-inclusive man, and is built from features [sum],[arb],[human], and [se], to yield a denotation from these logical possibilities: (i) AUTH(i) + x qua λx.person(x), (ii) AUTH(i) + x qua λx.person(x), (iii) x + AUTH(i) qua λx.person(x). In the Generic Inclusive Dialect, the pronoun also has the uninterpretable feature [gn] 42, restricting it to quantified contexts. The denotation in (iii) allows man to refer to a sum

41 Whatever the ultimate explanation for the properties of exclusive man in the dialect reported in Kratzer (1997), it would not be featural deficiency, as in her proposal. The interesting distributional differences she reports are not explained in my proposal. Instead, I generate both inclusive and exclusive man denotations, and leave the explanation of the curious properties of exclusive man to future research, not least because I was unable to locate enough speakers of this dialect.

42 Egerland (2003) proposes that pronouns originating in a noun “person” follow the diachronic path in which they first become “generic” (only licensed in quantified sentences), and may go on to acquire “arbitrary” (existential) uses. I propose that vagueness inherent in generic sentences is conducive to feature migration, facilitating the development of impersonals from 2nd-person pronouns, and of speaker-inclusive uses for dedicated impersonals. Thus, the generalisation expressed by a hearer-deictic sentence (i, overt ty) is a subcase of the one with the 2nd-person impersonal (ii, null subject). When the pronoun is deaccented or even dropped, it is easily reanalysed as introducing the variable in the operator-variable structure represented by the generic sentence, in line with the generalisation that places deaccented material in the restrictors of quantifiers (Chierchia 1995b). If this narrative is right, the restriction to generic contexts described by [gn] is a trace of the process via which the variable corresponding to [arb] first appeared.
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of the speaker and some non-human entity - a possibility unattested in my data, and ruled out by my informants. Thus, provided that the speaker (attitude holder) is a person, we end up with two truth-conditionally equivalent denotations (i) and (ii), corresponding to structures in (46).

(46)  i. \([\text{man}]^{ci} = \text{AUTH}(i) + x \quad \text{qua} \quad \lambda x. \text{person}(x)\)

\[
\begin{array}{c}
\text{[arb]} \\
\otimes \\
\text{[se]} \\
\text{[human]} \\
\text{AUTH}(i) \\
\text{qua} \\
\lambda y. \text{person}(y) \\
\end{array}
\]

\(\text{[sum]} + x\)

ii. \([\text{man}]^{ci} = (\text{AUTH}(i) + x) \quad \text{qua} \quad \lambda x. \text{person}(x)\)

\[
\begin{array}{c}
\text{[sum]} \\
\text{[se]} \\
\text{[arb]} \\
\text{[human]} \\
\text{AUTH}(i) \\
\text{qua} \\
\lambda y. \text{person}(y) \\
\end{array}
\]

(47)  \([\ldots \text{MAN saw John (an eternity ago)}]\)\(^{ci} = \exists e \exists x \ \text{saw}(j,[\text{AUTH}(i)+x] \quad \text{qua} \quad \lambda x. \text{person}(x), e)\)

The choice between the two denotations in (46) can be made on theoretical grounds. When [sum] is part of structured feature-combination, and thus projects its own head, Kratzer (2009) argues, it ends up being pronounced as a separate word und ‘and.’ To create a qua object, the features are not combined from an unordered set, but rather in a particular structural configuration. Thus, in (i), [sum] cannot be part of man phonologically. In contrast, in (ii), [sum] occurs as a part of an unordered feature set, and thus can be part of a pronoun, making this the theoretically more plausible denotation.

(i) Jesli (ty) znaesh‘a s Mafijej, (ty) dolgo ne prozhiv‘osh’. (Russian)

If you deal.2sg.pres with Mafia, you.sg long not will.live.2sg ‘If you deal with Mafia, you won’t live long.’

At the same time, in languages where 2nd person pronoun carry more lexical content, such as honorific suffixes in Japanese, the pronoun would resist phonological reduction, and reanalysis as a variable (Kitagawa and Lehrer 1990). Turning to the path from the impersonal to indexical realm, the vague domain over which the variable ([arb]) ranges may include the speaker, the hearer, or both, leading to reanalysis in which the inclusion of the speaker or a conversational participant becomes conventional (cf. D’Alessandro and Alexiadou 2003). Until this inclusive use extends into episodic sentences, it is not easy to detect. An example that perfectly fits this narrative is the Dutch weak 2nd-person pronoun je (Zeijlstra and Aalberse 2008), which started out as deixis to the (singular) addressee, then became a generic impersonal, like English you and German du, and has now extended to episodic uses in which it is ambiguous between conversational participants (ii). During its generic-impersonal stage, which involved simulation by the hearer of a variable that included the speaker in its domain, je has been reanalysed as involving the feature [Participant], rather than its subfeature [2nd] (Benveniste 1966, Farkas 1990, Harley and Ritter 2002, Zeijlstra and Aalberse 2008), which enables it to refer to the speaker or the hearer.

(ii) Er was brand en je belde de brandweer (Dutch)

There was fire and you called the brigade ‘There was fire and you/I called the brigade’

This use supports the idea that in the generic contexts, impersonal je (and perhaps other 2nd person impersonals) now involves simulation by either participant, as a result of the [Participant] feature in addition to [arb] and [gn].
The denotation in (46ii) derives the correct truth-conditions for sentences with inclusive man (47), yields synonymy with wir in most, but not all contexts, allows for shifting under attitude verbs, and does not create a kind denotation.

The summary of the proposed features comprising man on its various uses is given below:

- **Man (exclusive)** is built from the features [arb] and [human]
- **Man (inclusive in Unrestricted & Kratzer (1997) Dialects)** is built from the features [se], [arb], [human], and [sum]
- **Man (inclusive, in Generic Inclusive Dialect)** is built from the features [se], [arb], [human], [sum], and uninterpretable [gn].

On the inclusive uses of man, just as on the non-inclusive uses, the variable introduced by [arb] creates quantificational variability depending on the adverb or operator in generic sentences, and existential semantics in episodic sentences. Principles of lexical insertion ensure that both uses are pronounced in the same way, since the item man matches a subset of features of the inclusive man, and no other item is a better match. At the same time, the absence of a 1st-person feature accounts for the obligatory 3rd-person agreement. Finally, the [sum] feature ensures that inclusive man is always plural (43), without hard-wiring this property into the nature of inclusive impersonals (this allows for inclusive uses of man in languages like Swedish, where it is singular, resembling I rather than we).


Here, I compare the impersonal one, you, du, and man with indefinite and definite NPs, and with indexical and logophoric pronouns, arguing that the proposal above predicts the facts.

3.1 Impersonals, indexicality, and logophoricity.

My proposal predicts that man can be used with an indexical interpretation in main clauses, as in (16), where man inludes the speaker in its reference (44). Not being a true indexical, but a de se pronoun, man cannot enter into antecedence relations with first-person pronouns (48). This means that man is not an impostor in the sense of Collins and Postal (2008), who explore outwardly 3rd-person NPs which are used with a 1st-person reference. (49) shows that impostors do not just have a 1st-person reference, but also carry

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43 My proposal shares with Kratzer (1997) an empirical problem: inclusive man in both analyses is semantically plural (in its truth-conditions and ability to antecede reciprocals), yet it governs obligatory singular verb agreement and nominal/adjectival concord. A meaningful [singular] feature cannot apply – it imposes the requirement that man be atomic, shifting its denotation to an impure atom (a group). However, in German, group-denoting terms with impure atom denotations cannot support reciprocals (i), while inclusive man can. I stipulate that a meaningless [singular] feature is inserted even in the presence of [sum], yielding singular concord while allowing reciprocals.

   (i) *Das Kommittee konnte mit einander sprechen.*
   ‘The committee could with one another talk.’

44 Kratzer treats the non-inclusive use of man as an anti-indexical, that is, an item whose semantics specifically excludes the speaker (Kratzer 1997 p.6). However, as her own examples demonstrate, the only way to ensure that man is speaker-exclusive is to excluded the speaker on pragmatic grounds (i). Also, quantified sentences with man suggest that speaker is never excluded from the domain of quantification. Thus rather than being anti-indexical (truly speaker-exclusive), the impersonal man is unspecified for speaker-inclusion. This is predicted by my proposal, contra Kratzer (1997).

   (i) Als ich in die Pension zurückkam, servierte man schon die Suppe. (Kratzer 1997:1)
   ‘When I returned to the boarding house, they were already serving the soup.’

---
1st-person features, in a structure which permits 1st-person antecedents but only 3rd-person agreement. The contrast between (48) and (49) shows that man is not an impostor, and does not carry a 1st-person feature.

(48) Um unser Familie in dieser Zeit vor Schaden zu bewahren, muss man die Öffentlichkeit meiden. For our family in this time from harm to keep has MAN the public avoid

‘At this time, in order to protect ourselves/our family from harm, one has to avoid the public.’

(49) To save myself from harm, yours truly/the present author will stay out of the news.

In contrast to man, the proposal for one reflects a more subtle relationship to the conversational participants, as noted by Safir (2004)\(^{45}\), Moltmann (2006, in print), Malamud (2006), among others. As I model using the simulation of the referent of one by the speaker, the connection between the speaker and referent is that of empathy, of self-identification, in which the speaker takes ‘directly the perspective of the other person, in order to predict the behaviour of that person or to attribute mental states to him.’ (Moltmann in print, on Simulation Theory (Gordon 1986) within a discussion of one)\(^{46}\).

Both German man and English one contain the logophoric feature [se], and indeed both exhibit shifting behaviour under verbs of attitude (50), switching their reference to the holder of the attitude.

(50) a. Hans believes that one needs a passport to travel to France. (English, Moltmann 2006, 52b)
   b. Man erzählte uns, dass einem Unrecht geschehen war. (German, Kratzer 1997, 1 p.8)

   MAN told us that MAN.dat injustice happened had

   ‘They told us that they had been treated unfairly.’

This raises an important question: are man and one true de se (logophoric) pronouns, as I claim, or are they (shifting) indexicals capable of exhibiting de re readings? The distinction is important – a de se pronoun could only be used to report a self-referential thought (51b), while a true shifting indexical would be usable for a non-self-referential thought accidentally referring to self, such as (51c). In the de re situation (51a), the sentences in (51c,e) are true, while those in (51b,d) are false.

(51) De se vs. de re reference:
   a. Scenario: Churchill sees some politician giving a speech on TV. He remarks that the speech is very good, without realising that the politician is actually himself (Churchill). The next day,

\(^45\) Safir (2004) claims that when one is uttered without further qualifications, it includes the hearer(s). Thus, a Martian addressing humans cannot felicitously say (i), nor can a member of his audience felicitously answer with (ii). He also claims that the sentence in (iii) entails the one in (iv). But the requirement illustrated in (i, ii) cannot be literally true – a mother can make the complaint in (v) addressing only her daughter, who will not be included in the generalisation.

(i) Fortunately, nowadays one is not susceptible to human disease. (iii) One adores cashew nuts
(ii) On the contrary, one is always susceptible to human disease! (iv) Someone in context c adores cashew nuts
(v) One raises kids, sacrifices so much for them, and then they move where one cannot even see the grandchildren!

The chief problem with (iii, iv) is that for most American English speakers, one requires quantification with a modal flavour to it. (iii), when construed as a statement about the speech situation (rather than possible ones), is unacceptable. When (iii) is interpreted as including multiple situations (usually one adores cashews), hearer-inclusion is not entailed.

\(^46\) Unlike man, one (and you) is able to enter into antecedence relations with first-person pronouns (i); however, I do not take this to be evidence of 1st-person features in one. In accounting for the ability of one and you to enter into antecedence relationship with each other and with we, I note that neither one nor you can be anteceded by I (i), despite both impersonals being singular. I hypothesise that the crucial difference between the 1st-person pronouns is that we, but not I, can be used impersonally (ii, iii). Thus, three impersonal pronouns, which are in overlapping distribution and in diachronic flux, can replace one another (i). This can be thought of as an instance of competing forms being used interchangeably; or as a case of one of the pronouns acting as an impostor for another, incorporating the latter’s features in a way that permits antecedence, but disallows adopting the other’s pattern of agreement (Collins and Postal 2008).

(i) To protect our/your/one/s/'my family, one /you, had to carry a gun (ii) We won! (spoken by a sports fan)
   (iii) I didn’t know we actually fought on the shores of Tripoli then. (spoken about the First Barbary War of 1801)
Churchill remembers what a good speech was made by that politician on TV – but other people who were watching didn’t pay attention at the time, and so don’t remember that anyone gave a speech at all.

b. I gave a speech yesterday.

c. [Looking at a TV broadcast of oneself] He gave a speech yesterday.

d. Only Churchill remembers giving a speech

e. Only Churchill remembers his giving a speech  [from Chomsky’s (1981)]

(52) One and reference de re:

a. A psychologist conducts massive experiments in which people are filmed giving speeches, then given a forgetting pill, and then are shown the films of themselves and others speaking. A year later they are asked to recall the films they were shown. By the time the subjects had to recall the films, it turned out that many people forgot they ever gave a speech. However, everyone had very good recollections of the films, and everyone remembered films of their own performances. People recalled the films but didn’t realise they were actually recalling their own speech-giving.

b. One always remembers giving a speech.  (false)

c. One always remembers one’s giving a speech.  (false)

In (52), it is clear that the experiment in (a) falsifies the claim in (b), as expected from the analysis of PRO as a de se referent. Similarly, most of my informants who ventured a judgement on (c)

47 For man, this test requires the embedded man to be obligatorily inclusive - otherwise, it is not a self-referential de re pronoun, but simple 3rd-person reference. Kratzer (1997) proposes two ways to force man to be inclusive - using an als-phrase modifier, or a non-nominative form. However, I did not find speakers for whom these were fail-safe ways of forcing the inclusive reading, and thus was unable to test whether inclusive man is de se or de re.

48 For speakers whose one did not have a 1st-person connection, one could be de re, as expected for a 3rd-person pronoun.

49 The attitude holder that puts herself into the shoes of one may actually be an addressee (i) of the reported attitude

(i) Mary learned/heard that you need to cheat in order to win.  (example from Muffy Siegel, p.c.)

(ii) One should stay away from the sun.

This is similar to the matrix-clause uses of one where it is intended to be applied in the 1st-person manner for practical reasoning by the addresseees (ii, from Moltmann in print). The de se referent AUTH(i) is sufficient to model this.

50 Moltmann (2006) gives (i) in which the bold occurrence of one can have a de re interpretation. This bound-variable one, as I will argue, has a different denotation than the first occurrence of one in (i), as will be elucidated in section XX.

(i) If one gives a speech, noone but oneself can remember one’s giving that speech.
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with impersonal you and du, must be capable of denoting both the regular hearer and the de te referent. This is in contrast to the 1st-person feature, which cannot be responsible for the de se referent involved in one and man. Section 4 will further address asymmetry between first and second person.

Having examined indexicality in impersonals, let us now turn to the second property that makes the pronouns investigated here a natural class – their susceptibility to adverbial quantification, which is modeled by a new variable in their semantics, introduced by impersonal-building feature [arb].

3.2 Impersonal pronouns introduce new variables.

3.2.1 (In)definiteness and quantificational variability.

What makes us think that impersonal pronouns contain the feature [arb] introducing a new variable into the semantic computation?

Lewis (1975) notes that in sentences containing indefinites and adverbial quantification, the adverb seems to quantify directly over the variable introduced by the indefinite (QUANTIFICATIONAL VARIABILITY EFFECT, QVE). These quantificational adverbs (Q-ADVERBS) like always or usually denote quantifiers that at least sometimes target situation or event variables: always (for every situation/event), usually (for most situations/events), etc. (see Lewis (1975), de Swart (1991), Chierchia (1995b) for influential analyses of Q-adverbs). The Q-adverbs yield the QVE with singular garden-variety indefinites and bare plurals, both in single-clause sentences (54a,b), or in ‘donkey’ conditionals (54c). With the right context, definites can yield the effect of varying, too (54d).

(54) Quantificational Variability Effect (QVE)

a. A Penn student is usually/rarely smart.

b. Penn students are usually/rarely smart.

c. If a student here deals with the Mafia, he always/usually/sometimes gets killed.

d. In the admissions process, we interview prospective students by inviting them into the room one at a time. If the kid is tall, he is usually smart.

All sentences in (54) have the effect of the adverb quantifying over the students, quantificational force of the NP varying with the adverb. Thus, (54a,b) have the QVE reading Most/Few Penn students are smart, and (54c) has the QVE reading Most/Few of the student here who deal with the Mafia get killed.

Several semantic analyses exist that can account for this effect of adverbial quantification on indefinites (and properly set-up definites). Two influential treatments of Q-adverbs are the situation-semantic approach in de Swart (1991, 1995) and the dynamic approach in Chierchia (1995b). Here, I follow the latter, using a Dynamic Montague Grammar framework (Groenendijk and Stokhof 1990, Chierchia 1995b, Honcoop 1998). In DMG, indefinites introduce dynamic existential quantification, capable of binding pronouns in subsequent discourse. Q-adverbs are Generalized Quantifiers, capable of binding individuals or events directly – this maintains compositionality and uniform treatment of

51 The ‘donkey sentences’ (after famous examples due to Peter T. Geach (1962)) are those that involve a pronoun which is interpreted as being bound by an operator, yet which is located outside the syntactic scope of that operator.

52 Thanks to two anonymous reviewers for this example and another just like it.

53 Q-adverbs can always quantify over times – on this reading of (38a), ‘usually’ would yield the meaning that some Penn student is smart most of the time, and stupid otherwise. I ignore these temporal readings, irrelevant here.

54 LF-based approaches in Heim (1982), Diesing (1992), and the Discourse-Representation approach in Kamp (1981) must be mentioned. They propose that neither definites nor indefinites are quantificational and both are referential. Both approaches blame the different behaviour of definites and indefinites on their referents: indefinites introduce new variables, which Q-adverbs quantify over, while definites pick up old variables and are unavailable for quantification.
quantification, while capturing Lewis’s insight that Q-adverbs are unselective quantifiers over cases.

The operation of Existential Disclosure (Dekker 1990, Chierchia 1995b) can make indefinite NPs available for adverbial quantification by turning them into properties that restrict the Q-adverb (55a). In contrast, a singular definite in (55b) cannot be turned into such a property (without the presence of additional variables that might be disclosed, as in 54d), since Existential Disclosure can only reach a variable that is bound by an externally dynamic operator (or free). The effect is similar for plural definites and indefinites. Chierchia (1995b) includes a relation to some contextual parameters in his denotation for definite NPs (55b, R is a free variable), similar to the situation-dependent treatment of definites in situation semantics. In cases such as (54d), the variable over admission interviews provides the link from the definite NP to the external context. Note that the variable to which kid applies is not available for disclosure – the Q-adverb can apply to the existentially quantified variable in (55a), or to such a variable representing the contextual parameter in (55b). Thus, in contexts that do not make available such variables over admission interviews, no QVE is predicted with the definite NPs (55b).

(55) a. Usually, [if a kid, is tall] [he, is smart]

- ED and lambda-abstraction apply =>
- logical equivalence =>
- Kind-denoting NPs, including definite ones, always yield QVE with Q-adverbs (56a). This explains the ability of definite pronouns like we to generate variability (56b), since we has a kind denotation (56c).

(56) a. Lions/The African lion is always/rarely/usually intelligent. (QVE: most/few/some lions)

b. As secret agents, we’ve been very lucky. If we deal with the Mafia, we always/usually live to tell it.

c. Some day, we/you will be extinct/widespread/everywhere.

Q-adverbs also generate QVE with German indefinites, and fail with singular definites. In German, kind-denoting plurals may be formally definite, rather than bare, as in English. Such kind-denoting definites yield QVE as naturally as indefinites (57a, compare 57b and 56a).

55 There is an intuitive translation procedure between DMG and situation semantics for this data (Chierchia 1995b). I will follow the DMG, since nothing here hinges on using situations (cf. de Swart 1991, 1995).

56 Only the plural you has a kind interpretation; its use implicates that the speaker and hearer belong to different kinds.

57 Here are donkey-conditionals; indefinites in single-clause QVE examples also function like their counterparts in English. The indefinite in (i) yields QVE (Most smart people are proud), while the definites in (i,ii) do not yield QVE.

(i) Wenn einer/#der Mann klug ist, ist er gewöhnlich stolz.        (ii) #Wenn die Männer klug sind, sind sie gewöhnlich stolz.

‘If someone/the man is smart, he is usually proud.’

The sentences with definites are infelicitous, since they have only one reading – namely, that a specific man or group of men has fluctuating intelligence and pride (where the pride correlates with intelligence at each moment). Since intelligence and pride are usually thought of as being more permanent, the sentences are unacceptable. Note that, as I point out, kind-denoting definites (singular or plural) do yield QVE, as in (iii) and (57a).

(iii) Wenn der Franzose klug ist, ist er gewöhnlich stolz.

‘If the Frenchman is smart, he is usually proud.’

If the Frenchman smart is, is he usually proud. ‘If a Frenchman is smart, he is usually proud.’

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26
(57) a. Die Löwen sind normalerweise/selten/manchmal intelligent. (QVE: most/few/some lions)
   *The lions are usually/rarely/sometimes smart*
   ‘Lions of this kind [e.g. African lions, zoo lions] are usually/rarely/sometimes smart.’
b. Diese Löwen sind normalerweise/selten/manchmal intelligent. (no QVE)
   *These lions are usually/rarely/sometimes smart*
   ‘These lions are usually/rarely/sometimes smart.’

Thus, susceptibility to QVE with Q-adverbs can serve as an empirical test for (in)determinacy in English and German, bearing in mind that kind-denoting definite plurals in German pattern with indefinites in yielding QVE with Q-adverbs.

### 3.2.2 Indefinite-like behaviour of *man, one, you, and du*.

The proposal above treats the impersonal pronouns as introducing new variables. According to the previous section, this should result in QVE readings with Q-adverbs, both in simple clauses, and in antecedent clauses of donkey conditionals. In both languages in (58), the impersonals yield the QVE readings, in which the Q-adverb *usually* creates the effect of quantifying over people, resulting in the interpretation *Most people lived to be 60*. In turn, the Q-adverb *rarely* creates the interpretation *Few people lived to be 60*. This is exactly the indefinite behaviour we have seen in previous section.

(58) a. Damals wurde man normalerweise/selten 60 Jahre alt. (German)
   *Then was MAN usually/rarely 60 years old*
   ‘In those days, one usually/rarely lived till 60.’ (English)
   (QVE available: *most/few people in those days lived to be 60*)
b. Damals hast du normalerweise/selten bis 60 gelebt. (German)
   *Then have you usually/rarely till 60 lived*
   ‘In those days, you usually/rarely lived to be 60.’ (English)
   (QVE available: *most/few people in those days lived to be 60*)

donkey conditionals in (59) finalise the conclusion: since definites are bad in antecedents of such out of the blue sentences (cf. 55b), impersonals in that position must be indefinites/new variables (or kind-denoting definites). The pronouns in (59) yield QVE, where the Q-adverbs (*usually*) seem to quantify over the variable in the antecedent (*most people dealing with the Mafia, most smart people*).

(59) a. Wenn man mit der Mafia verhandelt, wird man normalerweise ermordet. (German)
   *If MAN with the Mafia deals will MAN usually get killed*
   ‘If one deals with the Mafia, one will usually get killed.’ (English)
   (QVE available: some/most people dealing with Mafia get killed)
b. Wenn du mit der Mafia verhandelst, wirst du normalerweise ermordet\(^{58}\). (German)
   *If you with the Mafia deal will you usually get killed*
   ‘If you deal with the Mafia, you usually get killed.’

d. Nowadays, if you’re smart, you’re usually/rarely involved in politics. (English)

Note that neither *man* nor *du* are kinds (60); so they do not belong to the class of kind-denoting definites in German that can also yield QVE.

\(^{58}\) The sentence is only ok on the impersonal reading. E.g., (i) with the plural *ihr* ‘you’, which cannot be impersonal, lacks the QVE reading and can only be asserting the possibility of multiple deaths for the addressees.

(i) #Wenn ihr mit der Mafia verhandelt, werdet ihr normalerweise ermordet.
   *If you.PL with the Mafia deal will you.PL usually get killed*
   ‘You get killed on most Mafia-dealing occasions.’

27
(60) a. ??/Eines Tages wirst du weitverbreitet sein.\(^{59}\) b. Du bist überall (only deictic, e.g. ‘Some day, you will be widespread.’ ‘You are everywhere.’

Thus, the proposal treating the impersonal pronouns as new (free) variables or indefinites is supported by (58, 59), and even German man and du cannot be kind-denoting definites (impersonals in the consequent clauses of donkey conditionals are exceptional and will be addressed below).

How can we determine that impersonals are not indefinites (existential quantifiers), but rather plain free variables? This is difficult to ascertain for those impersonals which must appear in quantified contexts (one, you, and du), since variables and quantificational indefinites are predicted to behave the same there. However, as episodic sentences with existential man show (44), that pronoun is scopally tied to the main eventuality expressed in its clause, and does not interact with other scope-taking items. This is uncharacteristic of true (quantificational) indefinites, and the analysis of man as a bare variable.

Thus, even some kind-denoting definites are precluded from German es gibt existentials:

(63) *Es gibt den Löwen / die Löwen im Universum.

\(\text{It gives the.sg lion.sg / the.pl lion.pl in the universe}\)  

Intended: ‘There are lions in the universe.’

This explanation, however, won’t do, since the definiteness effect is not a clear-cut phenomenon with es war or es gibt. Thus, kind-denoting definites are perfect in es war existentials, in contrast to man:\(^{61}\)

(64) a. Es war der Hund schon entwickelt, als der Mensch auf die Erde kam.  
\(\text{It was the dog already developed when the man on the earth came}\)  

‘Canis lupus familiaris was already developed when homo sapiens made its appearance.’

b. Es waren die Hunde schon entwickelt, als die Menschen auf die Erde gekommen sind.

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\(^{59}\) Note that the English impersonal one and you fail to be kind-denoting (i, ii). Only the plural you can be a kind, only the singular you can be impersonal. (i) *Some day, one will be extinct.  (ii) Some day, you will be extinct. (deictic only)

\(^{60}\) Lockwood (1968) gives the following counter-example, in which the dative form einem (required by gibt) appears in an es gibt sentence: Es gibt einem zu denken dir... (‘There is a person to think you...’)

\(^{61}\) Thank you to the anonymous reviewer who pointed out these examples, demonstrating the contrast between es war and es gibt existentials with respect to kind-denoting definites and man.
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It were the dogs already developed, when the men on the earth come are
‘Dogs were already developed when humans appeared on Earth.’
Moreover, many definites are perfect in existentials (65, from Grewendorf 1989), even with es gibt.
(65) ... weil es den Definitheitseffekt gar nicht gibt.
because it the definiteness.effect at.all not gives
‘... because the Definiteness Effect does not exist at all.’
Thus, it seems that restrictions on es war and es gibt existentials are quite complex; simply calling man definite cannot serve to rule it out from both types of existential sentences62,63.
At the same time, the preclusion of one, you, and du from existential sentences may indeed be the definiteness effect. As I propose, these impersonals, which unlike the non-inclusive uses of man retain a connection to conversational participants, are composites, containing both a variable, and a definite indexical part making them unacceptable in existential there-sentences.
How can we explain the uses of the impersonals where they can be interpreted as anaphoric to a previous impersonal, the anaphoric use (66)? A priori, this seems to go against our treatment of impersonals as new variables. I suspect that this use is an artifact of pragmatic reasoning, where the coherence relationship between the two clauses, together with agent demotion inherent with man forces the inference that the person who escapes is the arsonist (cf. the implicit agents of passives (67), which also involve the coherence relation and agent demotion; and indefinites (68), which do not have demotion and thus project a more robust inference that their referents are distinct).64
(66) a. Man hat ein Haus abgebrannt, um das Versicherungsgeld zu kassieren.Dann ist man entkommen.
MAN has a house burned in.order the insurance to cash Then is MAN escaped
‘Someone burned a house PRO to get the insurance. Then, that person/someone escaped.’
b. Damals musstest du/musste man eine Pistole tragen, um deine/seine Familie zu verteidigen.
Then had you/had MAN a gun carry in.order your/self’s family to defend
Trotzdem konntest du /konnte man noch angegriffen werden.
Nevertheless could you /could MAN still attacked be
‘In those days, you/one had to carry a gun PRO to protect your/one’s family. Nevertheless, you/one could still be attacked.’
(67) a. The house was burned in order to get the insurance. Then, the insurance check was cashed.
b. The table was lifted. Then, it was carried upstairs.
(68) a. Jemand klopfte an die Tür. Dann drehte jemand den Griff und kam herein.
Someone knocked on the door. Then turned someone the handle and came in
b. ‘Someone knocked on the door. Then, someone turned the handle and came in.’
I conclude that my proposal for the semantics and features of the impersonals is in concord

62 We cannot rule our man in these constructions by claiming that it is a (non-kind) definite, as we would frontally contradict the evidence from the QVE sentences, which demonstrate that man is either an indefinite/new variable, or a kind definite, and from sentences with kind-selecting predicates, which demonstrate that man is not kind-denoting.
63 So, what is it that rules out man from the pivot position of existential sentences? While a full explanation is beyond the scope of this paper, I suggest a solution that follows Beaver, Francez, and Levinson (2005). Recasting definiteness effects as markedness effects, they write: “pivot NPs are NPs that are not good candidates for functioning as subjects.” However, man is especially designed to be a good subject and to knock-out the subject denotation from the salience/topichood computation (cf. Prince 2003, Malamud in print); thus it is a bad pivot. So, while my semantics for man does not preclude it from existentials, its pragmatic function does. (Thank you to Gennaro Chierchia for suggesting this.)
64 This pragmatic explanation will not do for the bound-variable readings that the impersonals get in the consequent clauses of donkey conditionals (72). There, indefinites cannot receive a co-varying reading, while definite pronouns do.
with the empirical data, which indicates that *man, one, and impersonal you, du* introduce new variables into the semantic computation. The exception are the bound-variable-like uses, discussed below. My proposal argues for a logophoric/indexical component in these pronouns, supplied by features [se] and [2nd]; at the same time, the feature [arb] makes them susceptible to adverbial quantification.

3.3 Cases when impersonals do not introduce new variables

In those contexts where personal definite pronouns get bound-variable interpretations (69a), impersonals *one, man, you,* and *du* anteceded by another instance of the same impersonal (69b, from Kratzer 1997) seem to have such a bound reading, too. As (69c) shows, expressions introducing new variables into the computation (i.e., indefinites) cannot be bound in this way. How can we reconcile this with the proposal that all four impersonals have the feature [arb] introducing a new variable?

(69) a. Every boy, thinks that he, is a hero.  
   b. Man behauptete, man habe meine Akte verloren.  
   c. A person thinks that a person is a hero.  

I follow the account of bound-variable definite pronouns in Kratzer (2009), where these pronouns are “born” with only one interpreted feature – the index feature, interpreted as a bound variable (70). The other features, which make the bound-variable pronoun pronounceable, are acquired from the antecedent via a chain of local agreement links, giving bound-variable pronouns have the same shape as definite ones. Similarly, I propose that bound-variable impersonals are also such ‘minimal pronouns,’ which get their pronounceable shape from the (true) impersonals anteceding them (71).

(70) a. [ [ 8 ] [ε ] = g(8) (type e)  
   b. Every boy, loves his, mother  
  => Every boy λs loves mother of g(8) =>  
  => Every x boy(x) [ λx↑loves(x,mom-of-x)]

(71) One, should take care of one,’s mother  
  => Gn x qua λy. Sim(Auth(i),y) λs should care for mother of g(8) =>  
  => Gn x x qua λy. Sim(Auth(i),y) [ λx↑should-care-for(x,mom-of-x)]

Donkey conditionals present a challenge for any theory of impersonals that behave as indefinites in the antecedent, and as definites in the consequent clause, a problem originally discussed by Chierchia (1995a, 2000) for Italian *si* (72). The impersonals in antecedent clauses must be indefinite: otherwise they would fail to be bound by the adverb, like the definite *the guy* in (73a).

(72) a. If a guy is smart, he is rarely/usually proud.  
   b. If you’re smart, you’re rarely/usually proud.  
   c. Wenn man  klug ist, ist man gewöhnlich stolz.
   d. ‘If one is smart, one is usually proud.’

(73) a. If *the guy* is smart, he is rarely/usually proud. (no QVE: only a guy with fluctuating pride)  
   b. If a guy is smart, *a guy* is rarely/usually proud. (anaphora: the proud ones are not smart)

In any theory of quantificational variability, an indefinite can be ‘bound’ only in the restriction of a Q-adverb, and existentially closed in other positions (de Swart 1991, Chierchia 1995b). Otherwise, a sentence like (73b) might have an interpretation synonymous with (72a). Yet, impersonal pronouns

65 Kratzer (1997) analyses such sentences as involving logophorically-shifted inclusive denotation for the second *man.*  
   This cannot be right, however, since, e.g., speakers of Generic Inclusive dialect accept this episodic sentence (where *man* cannot be inclusive) on the coreferential reading for the second *man.*
in the consequent clauses are anaphoric to the previous occurrence of the same pronoun. Since (72b-d) involve variables co-varying under quantification, the two occurrences of the impersonals cannot be mediated by extra-linguistic reasoning (contra Koenig and Mauner (1999) for French impersonal *on*). They must be definite: only a definite can be anaphoric, as is illustrated by the lack of anaphora in the consequent clause of (73b) which involves an indefinite a guy.

There are two ways towards resolving this challenge; both have drawbacks. One is to say that impersonals in consequent clauses of donkey-sentences only seem to be the same semantic animals as those in the *if*-clauses. While sounding like their antecedents, these problematic impersonals are really minimal pronouns, as bound-variable pronouns are proposed to be in Kratzer (2009) (70). So, impersonals in the consequent clauses would be like definite pronouns in the same position (72a), which would also start out as minimal pronouns. In both cases, the final shape of the pronoun should be acquired via agreement with the antecedent, which could be an indefinite NP (72a), or an impersonal pronoun (73b-d). When the pronoun adds the features it gets from the antecedent to its own index feature, the result is spelled out as a featural duplicate of the antecedent.

The chief problem with this approach is that the relationship between the antecedent and the minimal pronoun in a donkey sentence is non-local and does not seem to be mediated by a chain of local agreement, unlike the regular bound-variable cases. This violates the constraints on minimal pronouns proposed in Kratzer (2009). To derive regular pronouns in consequent clauses of donkey-sentences, Kratzer treats them as hidden definite descriptions (D-type pronouns, following Neale (1990), Elbourne (2002, 2005)) – a strategy we cannot adopt for indefinite impersonals.

Another approach follows Chierchia (2000), who uses the operation of existential disclosure which allows a Q-adverb to bind a co-indexed indefinite, deriving (74a). To prevent the adverb from binding a pronoun, yielding a reading for (b) equivalent to (a), he stipulates that the index on the adverb must match the index of an indefinite.

(74) a. [[Usually, [if a kid, is tall] [he, is smart]] = most’ [\(\lambda x [\text{kid}(x) \& \text{tall}(x)]\) [\(\lambda x [\text{smart}(x)]\]

b. [[Usually, [if he, is tall] [he, is smart]] = most’ [\(\lambda x [\text{tall}(x)]\) [\(\lambda x [\text{smart}(x)]\]

(75) [[Usually, [if a kid, is tall] [a kid, is smart]] = most’ [\(\lambda x [\text{kid}(x) \& \text{tall}(x)]\) [\(\lambda x [\text{smart}(x)]\)]

Finally, Chierchia rules out derivations like (75) by using Principle C of the Binding Theory, whereby R-expressions cannot be bound. The definition of binding is changed so that the pair consisting of the indefinite in the restrictor and the adverb binds the indefinite R-expression in the scope.

Chierchia treats impersonals as indefinite pronouns. As indefinites, they can be co-indexed with adverbs. As pronouns, their binding doesn’t violate Principle C. This derives impersonals in the

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66 The missing link is a way of establishing agreement that, on the one hand, will derive the correct shapes for minimal pronouns in donkey-sentences, while on the other hand preserving the insights of Kratzer (2009) about the restrictions imposed by the construction of a local agreement chain on the distribution of bound variables. For the present, I suggest that the solution might lie in the approach to donkey conditionals taken in Barker and Shan (2008). In the framework they develop, donkey-pronouns are regular bound-variable pronouns. To apply this framework to impersonal pronouns in donkey conditionals, we need to develop a treatment of Q-adverbs in this framework, and a theory of feature transmission that goes with it. I leave these important projects to future research.

67 A problem arises in using Principle C to rule out indefinites (but not indefinite pronouns) in the scope of Q-adverbs. Definite R-expressions are subject to Principle C (i), yet are ok in the consequents of donkey sentences (ii).

i. *A village, resembles the village.*

ii. *If a painter lives in a village, the village, is usually pretty.*

iii. *If a painter, lives in a village, the village [where he, lives] is usually pretty.*

iv. *If a guy, is tall, that guy, is usually smart.*

v. *If a village, is in the Swiss Alps, the village, is usually pretty.*

Chierchia argues that in these apparent violations of Principle C, it is not the R-expression itself that is bound, but a
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restricter and scope of Q-adverbs (76).

(76) a. [[ Usually, if one is tall] one is smart] = most’ \[ \lambda x \uparrow [\text{person}(x) \& \text{tall}(x)] \] \[ \lambda x \uparrow \text{smart}(x) \]

While the ability of impersonals to appear as bound-variable pronouns () may point to pursuing a bound-variable approach to donkey impersonals, their status as indefinite (new-variable-introducing) pronouns enables us to appeal to the dynamic binding account (Chierchia 2000).

4. Conclusions and further directions

The theory of impersonals developed here offers the first step towards a principled explanation for existence or non-existence of certain kinds of impersonals. To examine its implications, let us look at the larger paradigm of impersonal pronouns in English and German. Pronouns included are those that share the pragmatics of agent demotion (Prince 2003, Malamud in print), and an interpretation that is antecedentless and non-directly-deictic to speaker/hearer. In English and German such items include 3rd-person plural pronouns they/sie, perhaps the 1st-person plural we/wir (though they might not involve demotion), the 2nd-person singular pronouns you/du, and dedicated impersonals one and man. Third-person plural impersonals exist in many languages, and are attested in historical corpora and traditional grammars of English and German (e.g., in German they are found from Luther onwards, Lockwood 1968) (77). Impersonal they is semantically definite – it does not exhibit any QVE with Q-adverbs (Alonso-Ovalle 2002, Malamud 2006, in print). Leaving the derivation of definite impersonal meanings to future work, we can ask if these pronouns must have such definite meanings.

(77) a. Wo ist dein Fahrrad? Sie haben es gestohlen. (from Lockwood 1968)

Where is your bicycle they have it stolen

b. ‘Where is your bicycle? They stole it.’

Could they instead give rise to an indefinite impersonal similar to non-inclusive man? Perhaps.

Indefinite impersonal pronouns are built using the feature [arb]. For the resulting pronoun to be pronounced they/sie, its other features must present a good match for the lexical item. Yet, the non-impersonal they/sie has only two features - a descriptive gender feature and [def]. The descriptive

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pronoun-like element implicit in it. So, (ii) is analyzed as (iii). It is not clear, however, that this pronoun-like variable can be appealed to in all cases: it seems unlikely in (iv, v). This problem is not specific to Chierchia’s proposal, but encountered by any extension of the E-type treatment of pronouns to other definites with bound-variable readings.

68 I am leaving implicit agents of verbal passives for future work, since it is hard to argue that these are pronouns.

69 Whenever such options exist in the language, impersonal pronouns tend to be unfocused, weak, null (i, ii) where corresponding personal pronouns may appear as focused, strong, and overt (iii, iv). Thus, the sentences in (i, ii) have the deictic/anaphoric readings The hearer cannot strangle our song and Salient group of people speaks English in America, while (iii, iv) have the personal readings Our song cannot be strangled and English is spoken in America.

i. Nashu pesnju ne zadushish’. ii. V Amerike govorjat po-anglijski. (Russian)

Our.ACC song.ACC not will.strangle.2s In America speak.3p in-English

‘One/you cannot strangle our song.’ ‘They (=people) speak English in America’


Our.ACC song.ACC you.s not will.strangle.2s In America they speak.3p in-English

‘You (=Addressee) cannot strangle our song.’ ‘These people speak English in America’

This data is very amenable to exactly the kind of analysis I propose - since the personal and impersonal uses arise from different feature combinations, lexical insertion rules may assign them different pronunciations, while maintaining the correct agreement pattern. However, the particular choice of the pronunciation still remains a mystery - nothing rules out the personal pronouns being null while the impersonals are overt. Intuitively, the actual pattern agrees with the pragmatics of impersonals – the demotion of their referent in discourse corresponds to a (phonologically) weaker form.
features that participate in building 3rd person pronouns in English and German include gender features [male] and [female], the feature [inanimate] (for it/es), arguably [human] (for one and man), and a superordinate feature [individual]. What happens when we try putting together [arb] with the features that match they/sie? The feature [human] can combine with [arb] through the qua object formation, as for one. The lexical items that best match the resulting pronoun are one or man, not they/sie. When other descriptive features join [arb], the result is an equally good partial match for one/man or you/du (which match [arb]) and they (which matches the descriptive feature). Thus, without [def], there is simply no way as to create a best-match for they/sie, specifically not while there are competing dedicated impersonals one and man. The feature [def] requires a property to combine with, while [arb] denotation is type e. Perhaps [arb] can be coerced into a property of being equal to x, the new variable, and combined with [def], producing essentially the same denotation as [arb] alone, ‘the unique individual equal to x.’ Again, just these two features have a few equal matches, since 3rd person pronouns all match [def] but not [arb], while indefinite impersonals match [arb] but not [def].

From this discussion emerges the one possible way of constructing an indefinite impersonal pronoun pronounced they or sie: [arb], [def], and a descriptive feature such as [human]. The descriptive feature would combine with [arb] via qua object formation; the result is then shifted to a property of being equal to x qua human, which [def] turns into the unique individual equal to x qua human. I thus predict that, first, an indefinite impersonal they is possible. Second, as the impersonal one continues losing ground in English, the impersonal pronoun built from [arb] and [human], or from [arb], [human] and [def] will be best matched by the lexical item他们, instead of the disappearing one.

Next, the proposal for you/du raises the question, why don’t 1st-person singular pronouns in English and German become impersonal? In fact, nothing in our theory prevents the feature [arb] from combining with the 1st-person feature, yielding an impersonal I (with essentially the same meaning as one, with or without the genericity). Thus, we would predict that a language like English in which you can be impersonal but not I is as probable as a language in which only I can be used as an impersonal. However, I know of no languages of the second type. I will leave this mystery for future research.

A smaller mystery is why the impersonal you or du could not appear in an episodic sentence; that is, what, if anything, rules out the pronoun built from [arb] and [2nd], but without [gn]. I suggest that such a pronoun is not ruled out; it is possible that Dutch je is such a pronoun (see footnote 42 on p. 20 for details). In re-entering the realm of personal pronouns, je lost its [gn] feature, and can now be used in episodic sentences to refer to a conversational participant; but has it discarded the impersonal-building [arb] as well? The distinction between a conversational participant and a person simulated by a participant is hard to ascertain empirically. From examples in Zeijlstra and Aalberse (2008) it does not seem that the episodic je introduces a new variable, though further data needs to be examined. This empirical difficulty is demonstrated in the uses of the 1st-person plural pronoun such as (78), which seem to involve speaker simulation, rather than actual inclusion.

(78)  We won!  (spoken by a fan of a sports team)

We might ask, what about the impersonal uses of we? First-person plural pronouns can be used impersonally, that is, without direct inclusion of the speaker in their reference, in many languages. I suggest that the mechanism that gives rise to the impersonal we does not include the feature [arb] or speaker-simulation. Instead, the flexibility inherent in the denotation of we, a plural, potentially kind-denoting, pronoun referring to the ‘group’ of the speaker (a vague plurality), allows it to extend to impersonal uses in a way akin to impersonal they, and unlike the impersonal (singular) you and du.
In conclusion, this paper proposes a detailed semantics for impersonal pronouns one, man, you, and du in the framework of cross-linguistic comparison between English and German. The analysis utilises the system of rich lexical representations proposed in Pustejovsky (1995), and the concept of qua objects (Fine 1982) to offer a new way to compose pronominal features. The resulting analysis extends Kratzer’s (2009) theory of pronominal features to include an independently motivated type-shifting mechanism for feature-joining, and offers the first step towards a principled way of constraining interactions between the personal and impersonal pronominal paradigms.

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