

Impersonal indexicals: *you* and *man*, *si*.

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Abstract.

This paper presents a comparative investigation in the interpretation of impersonal pronouns in several languages. Indexicals that can shift their reference under the influence of linguistic context has been the subject of much debate (Kaplan 1989, Schlenker 2003, inter alia). Impersonal pronouns that have a reading inclusive of the speaker or hearer present a challenge in this debate, namely, how to reconcile their susceptibility to quantification with their indexical nature? I explore the semantics of three such items: German impersonal pronoun *man* (1a), Italian impersonal *si* construction (1b), and the impersonal use of *you* in English (1c).

(1) a. Man sieht nur mit dem Herzen gut.
MAN sees only with the heart well.
‘One sees well only with the heart.’

b. In Italia, si beve molto vino.
In Italy SI drinks much wine.
‘People drink lots of wine in Italy.’

c. You don’t get this kind of undeveloped countryside anymore.

All three show seemingly contradictory behaviour: in quantificational contexts they can shift their reference, yet sometimes these items can be indexical. I argue that this contradiction is only apparent, because distinct elements in the semantics of the items are responsible for the shifting and the indexical aspects of the pattern. The proposal derives the full range of data without positing the existence of context-shifting operators outside the domain of attitudes.

This investigation raises important issues in semantics: the nature of reference *de se* and indexicality, behaviour of kind terms, and the precise nature of the definite-indefinite divide in various languages.

This paper presents a comparative investigation in the interpretation of impersonal pronouns in English, German, and Italian, each of which has features of both indexicality and impersonal interpretation.

1. The problem.

The existence of indexicals that can shift their reference under influence of linguistic context has been the subject of much debate (Kaplan 1989, Schlenker 2003, inter alia). In particular, Kaplan (1989) argues that operators that can quantify over or shift contexts do not exist in natural language; he terms such operators MONSTERS.

A number of authors have contested this claim on empirical grounds, discovering elements that show both an indexical interpretation and an ability to shift under the influence of certain linguistic operators in a variety of languages: Aghem (Hyman 1979), Navajo (Speas 1999), Amharic (Leslau 1995, Schlenker 2003), Zazaki and Slave (Anand and Nevins 2004). In his 2003 plea for monsters, Philippe Schlenker argues that monstrous operators are pervasive in natural languages. Some recent proposals also argue for existence of both monsters and shifting indexicals, but limit the types of such phenomena that exist in natural languages (Adesola 2004, Anand and Nevins 2004, Sharvit 2004). Schlenker (2003) argues for the existence of shifting indexicals, bringing two examples to bear on the issue: the present tense in Russian, the reference of which shifts when it is embedded into past-tense attitude reports, and Amharic *I*, which also shifts in complement clauses of attitude verbs.

In this discussion, impersonal pronouns that have a reading inclusive of the speaker or hearer present a puzzle. On the one hand, these constructions are used indexically, and on the other, 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. Indeed, some previous work suggests that one way to explain the behaviour of impersonal pronouns is to analyse them as shifting indexicals and to treat the contexts that cause indefinite-like variability as monstrous (Malamud 2005). I explore the semantics of three such items: German impersonal pronoun *man*, Italian impersonal *si* construction, and the impersonal use of *you* in English (1).

(1) a. German (from *Der Kleine Prinz*)

Man sieht nur mit dem Herzen gut.
MAN sees only with the heart well.
 ‘One sees well only with the heart.’

b. Italian (from Chierchia (1995a), pp. 107, 108)

In Italia, si beve molto vino.
In Italy SI drinks much wine.
 ‘People drink lots of wine in Italy.’

c. English

You don’t get this kind of undeveloped countryside anymore.

All three show seemingly contradictory behaviour: sometimes, they get an impersonal interpretation and can shift their reference. At other times, the same items have indexical reference, the most “personal” and stable type. I will argue that this contradiction in behaviour is only apparent, because distinct elements in the semantics of the items are responsible for the impersonal and the indexical aspects of the pattern. The proposal derives the full range of data without positing the existence of monsters outside the domain of attitudes.

The structure of this paper is as follows: in the next section, I will discuss the impersonal behaviour of these three items, and raise fundamental issues in empirical classification of NPs in general. In section 3, I address their indexical behaviour. In section 4, I lay out some important differences between *man*, *si*, and *you*. I then go on to discuss the possible analyses of impersonal *you* in sections 5 and 6, and propose a semantics for this item in section 7. Sections 8 and 9 discuss two alternative proposals for the semantics of *man* and *si*. Section 10 points out some remaining issues these impersonals raise, and Section 11 concludes the paper.

2. Indefiniteness of impersonal pronouns.

2.1. (In)definiteness and quantificational variability.

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 variables: *always* (*for every situation*), *usually* (*for most situations*), etc. (see Lewis (1975) for an influential analysis of Q-adverbs). The Q-adverbs yield the QVE with singular and plural indefinites, both in single-clause QVE sentences (2a,b), or in conditional ‘donkey’¹ sentences (2c).

(2) Quantificational Variability Effect (QVE)

- a. A Penn student is usually/rarely smart.²
- b. Penn students are usually/rarely smart.
- c. If a student here deals with the Mafia, he always/usually/sometimes gets killed.

All sentences in (2) have the effect of the adverb quantifying over the students, with the quantificational force of the indefinite varying depending on the adverb. Thus, (2a,b) have the QVE reading *Most/Few Penn students are smart*, and (2c) has the QVE reading *Most/Few of the student here who deal with the Mafia get killed*.

1 The so-called ‘donkey sentences’ are those that involve a pronoun which is interpreted as being bound by an operator, yet which are located outside the syntactic scope of that operator. The sentences were associated with donkeys and farmers following famous examples due to Peter T. Geach (1962), such as, “If a farmer owns a donkey, he always/usually/sometimes beats it.”

2 Note that there is always a possibility that the Q-adverb quantifies over times – on this reading of (2a), ‘usually’ would yield the meaning that some Penn student is smart most of the time, and stupid at other times. I will ignore these temporal readings – they tell us nothing about definite and indefinite NPs.

Crucially, definites and indefinites behave differently with respect to adverbial quantification (3). While indefinites vary in their quantificational force in the presence of a Q-adverb, definites fail to do so. Thus, the sentence in (3b) does not have the reading *Most tall kids are smart*, unlike the example in (3a).

(3) Indefinites vs. definites: quantification

- a. If a kid is tall, he's usually smart. (has the reading: *most tall kids are smart*)
 b. #If the kid is tall, he's usually smart. (only has the reading: *#a certain kid's height and intelligence mostly fluctuate together*)

Several semantic analyses exist that can account for the differences with respect to anaphora and quantification. The LF-based approaches in Heim (1982), Diesing (1992), and the Discourse-Representation approach in Kamp (1981) propose that definites and indefinites are alike in that neither is quantificational and both are referential. Both approaches blame the different behaviour of definites and indefinites on the nature of their referents: indefinites introduce new variables, while definites pick up old/given ones.

The framework of situation semantics takes the Fregean approach to the definite article, where uniqueness (or maximality) and not givenness is taken to be its primary import (Berman 1987, Heim 1990, von Stechow 1995). The facts in (3) are derived using minimal situations: in (3a), *usually* quantifies over minimal situations containing a tall kid – each such situation contains a different single kid (4a), creating the effect of *usually* quantifying over kids. In (3b), however, the quantification is over minimal situations containing the unique kid in discourse – the same kid in all these situations (4b) – so there is no quantification over kids, and this reading means that the unique kid changes in intelligence from situation to situation.

(4) Indefinites vs. definites: quantification in situation semantics

- a. $\lambda s_0. \text{Most } s_{\min} [\exists x \text{ in } s_{\min} \mathbf{kid}(x) \& \mathbf{tall}(x)] [\exists s' s_{\min} < s' \mathbf{smart}(ty \text{ in } s_{\min}. \mathbf{kid}(y) \& \mathbf{tall}(y)), s']]$

Paraphrase: Most minimal situations with a tall kid extend to situations in which this kid is smart.

- b. $\lambda s_0. \text{Most } s_{\min} [\mathbf{kid}(1x \text{ in } s_0) \& \mathbf{tall}(1x \text{ in } s_0)] [\exists s' s_m < s' \mathbf{smart}(ty \text{ in } s_m. \mathbf{kid}(y) \& \mathbf{tall}(y)), s']]$

Paraphrase: Most minimal situations with the unique tall kid from the topic situation extend to situations in which this kid is smart.

The effect is similar for plural definites and indefinites.

Q-adverbs also generate QVE with German and Italian indefinites (5) (examples in (5) are donkey-conditionals, but indefinites in single-clause QVE environments function as their counterparts in English as well).

(5) Italian QVE patterns

- a. Se uno studente é intelligente, é di solito fiero.
If a student is intelligent, is of usual proud.
'If a student is smart, he is usually proud.'
(QVE available: *most smart students are proud*)

German QVE patterns

- b. Wenn einer klug ist, ist er gewöhnlich stolz.
If someone smart is, is he usually proud.
'If someone is smart, he is usually proud.'
(QVE available: *most smart people are proud*)

(6) Definites are not donkeys: Italian

- a. Se lo studente é intelligente, é di solito fiero.
If the student is intelligent, is of usual proud.
'If the student is intelligent, he is usually proud.'
(no QVE: *now he's smart/proud, now he's not*)
- b. Se gli studenti sono intelligenti, sono di solito fieri.
If the students are intelligent, are of usual proud.
'If the students are intelligent, they are usually proud.'
(no QVE: *now they are smart/proud, now he's not*)

Definites are not donkeys: German

- c. Wenn der Mann klug ist, ist er gewöhnlich stolz.
If the man smart is is he usually proud.
'If the man is smart, he is usually proud.'
(no QVE: *now he's smart/proud, now he's not*)
- d. Wenn die Männer klug sind, sind sie gewöhnlich stolz.
If the men smart are are they usually proud.
'If the men are smart, they are usually proud.'
(no QVE: *now he's smart/proud, now he's not*)

The sentences in (6) are infelicitous, since each of them has 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 particular moment). Since intelligence and pride are usually thought of as being more permanent, the sentences are unacceptable.

Thus, susceptibility to QVE with Q-adverbs can serve as an empirical test for (in)definiteness in

English, Italian, and German.

2.2. Impersonal behaviour of *man*, *si*, and *you*.

Applying our (in)definiteness test to the impersonals, we see that in sentences with adverbial quantification, *man*, *si*, and *you* acquire the quantificational force of the adverb, showing indefinite-like QVE both in simple clauses in (7-9), as well as in donkey-sentences (10-12).

In all three languages in examples (7-9), 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 / Most people are fans of the Yankees*. In turn, the Q-adverb *rarely* creates the interpretation *Few people lived to be 60 / Few people are fans of the Yankees*. This is exactly the indefinite behaviour we have seen in previous section.

(7) German

Damals lebte man normalerweise/selten bis 60 Jahre.

Then lives MAN usually rarely till 60 years.

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

(QVE available: *most/few people in those days lived to be 60*)

(8) Italian

Qui si è di solito/raramente tifosi dell’Yankees.

Here SI is usually / rarely fans of.the Yankees.

‘Here one is usually/rarely a fan of the Yankees.’

(QVE available: *most/few people here are fans of the Yankees*)

(9) English

In those days, you usually/rarely lived to be 60.

(QVE available: *most/few people in those days lived to be 60*)

The quantificational variability in the donkey conditionals in (10-12) below finalises the conclusion: since definites are simply bad in antecedents of such sentences (compare (3b, 6) above), and so the impersonals in that position must be indefinite.

(10) German

Wenn man mit der Mafia verhandelt, wird man normalerweise ermordet.

If MAN with the Mafia deals will MAN usually get.killed.

‘If one deals with the Mafia, one will usually get killed.’

(QVE available: *some/most people dealing with Mafia get killed*)

(11) Italian

Se si è intelligenti, si è di solito fieri.

If SI is smart SI is of usual proud.

If one is smart, one is usually proud.

(QVE available: *most smart people are proud*)

(12) English

Nowadays, if you're smart, you're usually/rarely involved in politics.

Again, the impersonals in (10-12) produce the QVE readings, in which the Q-adverbs (*usually*) seem to quantify over the variable in the antecedent clause (*most people dealing with the Mafia, most smart people*).³

Thus, according to our test, the impersonal pronouns in (9-10) are indefinites.

3. Indexical behaviour.

The impersonal pronouns cannot, however, be analysed simply as indefinite NPs. As many researchers have noted, *man* and *si* can be used with an indexical interpretation (12, 13) (Kratzer 1997, Chierchia 1995, D'Alessandro 2004, inter alia). For German, Kratzer (1997) gives (12), where *man* is interpreted as a 1st person pronoun including the speaker in its reference. For Italian, D'Alessandro (2004) gives (13), with a similar speaker-inclusive interpretation for the subject yielding *We arrived late* as the sentence reading.

(12) German (from Kratzer 1997: 5)

Es war völlig klar, dass man sich nie mehr wiedersehen würde.

It was completely clear that MAN self never again see.again would.

'It was completely clear that we⁴ would never see each other again.'

3 Alonso-Ovalle (2002) claims that the Spanish 2nd-person pronoun, while used impersonally, does not show QVE with Q-adverbs, citing examples such as (a). Actually, while some speakers agree that the QVE reading is absent with *raras veces* (a), others find these readings are, in fact, present. Also, Q-adverbs other than *raras veces* cause QVE in simple clauses (b) and donkey-sentences (c). So, this Spanish impersonal does show QVE with Q-adverbs.

a. (En las fiestas de ese departamento) raras veces bebes vino.

In the parties of that department few times drink.2SING wine.

'At the parties of that department, people rarely drink wine.'

Alonso-Ovalle's claim: NOT *at the parties..., few people drink wine*

b. En aquella epoca, siempre/normalmente/rara vez/a veces vivias hasta cumplir los 60.

In that time always usually rarely sometimes live.2SING till to.complete the 60.

'In those days, you always/usually/sometimes lived to be 60.'

c. Si engañas a la mafia, siempre/normalmente/rara vez vives para contarlo.

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.'

4 While native speakers agree that there is a subtle difference between the inclusive *man/si* and corresponding first-

(13) Italian (D'Alessandro 2004: 39)

Ieri si è arrivati tardi.

Yesterday SI is arrived late.

'Yesterday, we⁴ arrived late.'

In both (12) and (13), the impersonal pronouns have the interpretation that includes a reference to the speaker, a 1st person indexical reference. *You*, of course, is the regular 2nd person indexical pronoun, referring to the hearer of the sentence (14).

(14) English

Yesterday, you came in late.

The deictic nature of such reference provides an apparent contradiction with the impersonal pronouns' impersonal interpretation and indefinite behaviour in QVE contexts. In fact, NPs with non-impersonal indexicals, including *now*, demonstratives and *I* cannot yield QVE (15).

(15) Regular indexicals don't yield QVE with Q-adverbs

a. #The students sitting here now are usually smart. (from Nakanishi and Romero 2003)

b. #These students are usually/rarely smart.

c. #If I am smart, I am usually/rarely proud.

Moreover, *man* and *you* are strongly unacceptable in existential *there*-sentences (16a,c)⁵, unlike indefinite NPs (16b,d).

(16) German (Kratzer 1997, examples 1-3)

a. *Es war man gekommen.

**There was MAN come.*

English

c. *There was/were you in the garden.

b. Es war wer/jemand gekommen.

There was someone come.

'Someone has come.'

d. There was a student in the garden.

person-plural pronouns *wir/noi* 'we'; yet this difference is not truth-conditional and may be due entirely to the competition between these pronouns.

5 Impersonal *si* construction and existential construction in Italian are syntactically incompatible, and so acceptability of *si* in existentials is impossible to test.

Thus, we have a puzzle: if these impersonal pronouns are true indexicals, they should not be susceptible to adverbial quantification; on the other hand, if they are indefinite, how do indexical readings arise and why are these items unacceptable in existential *there*-sentences? In the rest of this paper, I will discuss the solutions to this puzzle for *you*, *man*, and *si*. First, I point out that the solutions for *you* on the one hand and *man*, *si* on the other hand must be different, and then I address these items in turn.

4. The differences between *man*, *si*, and *you*.

The data presented so far concentrates on the similarities between the three impersonal pronouns; however, there are important differences between them, indicating that their semantics might also be quite different. *You* on the one hand and *man*, *si* on the other differ in at least three respects: first, different environments license indefinite and indexical interpretations of the different types of impersonals; second, they differ in their morphological number; third, they differ in the degree of hearer empathy they require.

The first difference concerns the environments in which the different readings are licensed. In particular, in purely episodic contexts, that is, in sentences lacking overt Q-adverbs or silent generic quantification, indefinite NPs as well as *man* and *si* can be interpreted as existentially quantified (17).⁶

(17) German

a. Gestern, hat man ein Haus abgebrannt.

Yesterday has MAN a house burned.

‘Yesterday, someone burned a house.’

Italian (Cinque 1988: 43a)

b. Oggi a Beirut si è ucciso un innocente.

Today in Beirut SI is killed an innocent.

‘Today in Beirut, someone killed an innocent person.’

Thus, both the indefinite (also called *exclusive*) and indexical (*inclusive*) behaviours are available in purely episodic sentences (12, 13, 17). In the same contexts, one of these behaviours is ruled out for *you* - as Alonso-Ovalle (2002) notes for the Spanish counterpart of *you*, impersonal *you* is impossible in episodic sentences, and only the deictic interpretation is available (18).

(18) Yesterday, you burned a house. (Impersonal interpretation for *you* totally unavailable)

⁶ A large body of literature is dedicated to figuring out the precise conditions under which the indexical (also called *inclusive*) and indefinite (also called *exclusive*) interpretations arise for *man* and *si* (see e.g., Kratzer (1997), Egerland (2003), D’Alessandro (2004), among others). While this is an interesting and important topic, I will not be directly concerned with it in this paper.

The sentences in (17) and (18) present a minimal contrast – in a purely episodic context, *man* and *si* can have the impersonal indefinite reading ‘someone’, while *you* can only have the indexical, but not the indefinite interpretation.

Second, *man* and *si*, but not *you*, can denote plural individuals, since they can support reciprocals like *each other* (19). The reciprocal works with both the indexical-like (speaker-inclusive) readings (19a,d) and with the non-indexical readings (19a-c); compare (19e), where only the indexical *you* supports *each other*.

(19) German (Kratzer 1997, p. 7, example 5)

- | | |
|--|--|
| a. Bei uns im Institut hilft man einander.
<i>With us in department helps MAN each.other.</i>
‘In our department people/we help each other.’ | b. Man redete miteinander.
<i>MAN talked with.each.other.</i>
‘People talked to each other.’ |
|--|--|

Italian (Cinque 1988, example 39)

- | | |
|--|---|
| c. Si era parlato l’uno con l’altro.
<i>SI was talked the.one with the.other.</i>
‘People talked with each other.’ | d. Ci si era consigliati l’uno con l’altro.
<i>To.us SI was advised the.one with the.other.</i>
‘We asked advice one from another.’ |
|--|---|

English

- e. In those days, you could talk to each other in public.
(Impersonal reading very degraded or unavailable)

So, the number distinction is independent from the indexical vs. impersonal readings.

Note that *man* and *si* cannot be just conceptually plural group terms, like *team* or *committee*, since in German and Italian, unlike some dialects of English, such group terms do not support reciprocals (20).

(20) German

- a. *Diese Familie spricht/sprechen miteinander.
This family talks / talk with.one.another.

Italian

- b. *Questa familia parla/parlano l’uno con l’altro.
This family talks/talk the.one with the.other.

English

- c. This family ?talk/*talks to each other.

Thus, the impersonals *man* and *si* are true plurals, whereas the impersonal *you* is singular. In fact, in

those dialects of English which distinguish between plural and singular 2nd person pronouns, only the singular one can be used impersonally (21).

(21) South Philadelphia English (you.plural = [yɪz], you.singular = you)

- a. In those days, [yɪz] could smoke in bars.
(only deictic reading: *you, my hearers, could smoke*)
- b. In those days, you could smoke in bars.
(both impersonal and deictic-singular readings ok)

The third and more subtle difference between *man*, *si* and *you* concerns their indefinite behaviour. In particular, even in its impersonal use, *you*, but not *man*, *si*, always requires that the addressee empathise with the agent denoted by *you*⁷. This requirement is best seen in sentences where another impersonal pronoun or an implicit agent is present (22), creating a contrast in hearer's empathy with the referents of the two impersonals. In (22), the hearer's empathy tracks the referent of *you* whether it is the subject or the object of the sentence (compare that with *man* and *si* in (23, 24). In all examples, empathy-tracking follows the referent of *you*, but not necessarily those of *man/si*.

(22) English *you* vs. *one/they*/passive

- a. In those days, one could throw **you** in jail for this kind of thing. (empathise with the victim)
- b. ?In those days, **you** could throw one in jail for this kind of thing. (empathise with the jailer)
- c. In those days, **you** could be thrown in jail for this kind of thing. (empathise with the victim)
- d. In those days, they could throw **you** in jail for this kind of thing. (empathise with the victim)
- e. In those days, they/one could be thrown in jail for this kind of thing. (empathy can go either way)

Thus, (22a,c,d) is infelicitous in the scenario where two police officers are discussing the good old days when law enforcement was easier, and bad guys could be easily put in jail. At the same time, (22b,e) are perfectly fine in such a scenario (to the extent that *one* in the object position in (22b) is acceptable). This is because in (22a,c,d), the referent of *you* goes to jail – and empathy follows the referent of *you*, while in (22b,e) empathy does not have to follow the person who goes to jail, and so we can empathise with the police officers.

(23) German *du* vs. *man*

- a. Damals hätte man dich um Geld bitten können. (empathise with lender)
Then has MAN you for money ask can.
'In those days, someone could ask you for money.'

⁷ All impersonals, to varying degrees, require that *the speaker* empathise with the individual denoted by the impersonal pronoun; this is not the contrast I am after.

- b. Damals wäre man für so etwas ins Gefängnis geworfen worden. (*empathy could go either way*)
Then was MAN for thus something in jail thrown was.
 ‘In those days, one would be thrown in jail for this kind of thing.’
- c. Damals wärst du für so etwas ins Gefängnis geworfen worden. (*empathise with the victim*)
Then was you for thus something in jail thrown was.
 ‘In those days, you would be thrown in jail for this kind of thing.’

Similarly to the English case in (22b,e), the sentence (23b), in which the referent of *man* is facing the possibility of jail, can be spoken by a police officer asking the hearer to empathise with him in reminiscing about the tougher good old days. In contrast, (23c), where the referent of 2nd person impersonal *du* ‘you’ is the potential the victim, lacks this reading, and can only be a call for empathy with the referent of *du* ‘you’. In (23a) the two impersonals come together and, in exact parallel to the English example in (22a), the empathy follows the referent of *du*, and not the referent of *man*.

(24) Italian *tu* vs *si* vs vs *uno*

- a. Ai giorni nostri puoi mandare uno in prigione molto facilmente. (*empathise with the jailer*)
In.the days our can.2ndsing to.throw one in jail very easily.
 ‘Nowadays, you can throw someone in jail very easily.’
- b. Ai giorni nostri si puo mandare uno in prigione molto facilmente. (*empathy can go either way*)
In.the days our SI can to.throw one in jail very easily.
 ‘Nowadays, they can throw you in jail very easily/you can throw someone in jail very easily.’
- c. Ai giorni nostri puoi finire in prigione molto facilmente. (*empathise with the victim*)
In.the days our can.2ndsing to.end in jail very easily.
 ‘Nowadays, you can end up in jail very easily.’
- d. Ai giorni nostri si puo finire in prigione molto facilmente. (*empathy can go either way*)
In.the days our SI can to.end in jail very easily.
 ‘Nowadays, one can end up in jail very easily.’

Italian examples in (24) work in a parallel fashion⁸, showing a contrast in empathy-tracking between 2nd person impersonal and *si*, but no contrast between *si* and *uno* ‘one’. Thus, (24b) in which the referent of *si* dreams of throwing people in jail, but not (24a) in which the referent of 2nd person impersonal imprisons others, is compatible with the scenario in which the speaker is describing the bad times nowadays, when the police can easily put someone in jail, and asking for hearer’s empathy with the victims of the police. That is, hearer’s empathy obligatorily follows the referent of the 2nd person

⁸ Restrictions on the distribution of 2nd person singular impersonal, passives, and *si* prevent examples that are exactly parallel to those in (21, 22), but the empathy-tracking is illustrated by examples in (23) just as well.

impersonal, but can easily abandon the subject of a *si*-impersonal.

I conclude that while appearing similar, *man* and *si* on the one hand, and *you* on the other hand actually have different semantics. In the next sections, I will consider the semantics of *you*.

5. Take one: ambiguous *you* – and why not.

To reiterate, the challenge presented by *you* is how to reconcile its indefinite-like susceptibility to quantification with its indexical nature. As we saw in section 2, in sentences with quantificational adverbs, *you* acquires the quantificational force of the adverb. This is characteristic of indefinites. However, *you* is a second-person pronoun – an indexical pointing to the addressee, and lacking existential interpretation in episodic sentences.

I am going to consider three possible ways of resolving this challenge, in turn. In this section, I will entertain and reject the hypothesis that deictic and impersonal *you* are different lexical items. Deictic *you* then is the usual kind of indexical. Impersonal *you* is a regular indefinite. I will next consider the idea that *you* is a shifting indexical in section 6. On the deictic use, no context-shift has occurred, and so *you* refers to the addressee. On the impersonal use, a particular kind of context-shift has been introduced by the Q-adverb. I will ultimately reject this hypothesis as well. Finally, in section 7 I will propose that *you* is a composite of two parts: one part strictly indexical and the other a variable.

First hypothesis (wrong): Should we say that there are really two lexical items: the deictic *you*, and the impersonal *you*, and that the impersonal *you* is simply an indefinite?

There are several strong arguments against this approach.

5.1. Impersonal *you* is all over the place.

The chief argument against the ambiguity hypothesis is that impersonal *you* (singular, wherever such distinction exists for the 2nd-person) appears with astounding systematicity in language after language. The impersonal use of singular 2nd-person pronoun is attested in Slavic, Romance, Germanic, and Dravidian languages, among many others. The explanatory power of our theory would be lost if we were to ignore this ubiquitous connection.

The ambiguity hypothesis is equivalent to the claim that *you* is like the word *bark* in English, with the senses “the sound of a dog” and “a small boat” being entirely unrelated. Thus, we would expect the frequency of co-occurrence of deictic and impersonal *you* in the same language to be similar to frequency of co-occurrence of “the sound of a dog” and “a small boat” with the same sound.

5.2. *You* means *you*, my hearer.

In fact, even on its impersonal use, *you* has an intimate connection to the addressee. In particular, recall that every use of impersonal *you* involves an appeal for the addressee’s empathy, so that the addressees are asked to put themselves into someone else’s shoes. This is most noticeable when impersonal *you* occurs in the same sentence with another impersonal (22a-c, repeated below). In (22a,c) the actual addressee is asked to empathise with those persons who receive respect in England. Arbitrary *one* is not

very good in object position (22b); however, to the extent to which the sentence in (22b) is acceptable, the addressee is asked to empathise with those persons who show respect in England.

(22) Empathy-tracking with *you*

English

- a. In those days in England, one had to show you some respect.
- b. ?In those days in England, you had to show one some respect.
- c. In those days in England, you had to be given some respect.

On a theory that impersonal *you* is a distinct lexical item from the indexical *you*, this empathy-tracking is completely mysterious.

5.3. Another reason to unify *you*.

Here, I point out a previously unobserved pattern of arbitrary and deictic interpretations for sentences involving several 2nd person pronouns. In multiple-pronoun contexts (25), *you* does not have all logically possible reading. However, when the order of the arguments is switched so that the subject, and not the object contains the embedded pronoun, all four readings are available (26).

(25) In those days, you could marry your cousin.

- a. Addressee could marry addressee's cousin
- b. One could marry one's cousin
- c. *Addressee could marry one's cousin
- d. One could marry addressee's cousin

(26) In those days, your cousin could marry you.

- a. Addressee's cousin could marry addressee
- b. One's cousin could marry one
- c. Addressee's cousin could marry one
- d. One's cousin could marry addressee

The missing reading in (25c) is entirely mysterious if the impersonal and deictic uses of *you* are unrelated, since under this account the rise of this reading is not different from the interpretation of (27) below. The deictic *this man* and the indefinite *a stranger* in (27) are perfectly fine where the deictic *you* and the indefinite *you* in (25c) are impossible.

(27) In those days, this man had to support a stranger's child.

In fact, behaviour of the 2nd-person pronoun in multiple-pronoun sentences replicates the behaviour of other variables in such sentences – *de se* pronouns in dream reports, and sloppy variables in VP-ellipsis.

Percus and Sauerland (2003) present the following data, where different readings arise in the scenario where John dreams that he is Bill. Then, the two pronouns in a dream report have two potential antecedents: John and Bill (John's dream-self). This gives rise to some incestuous, but also to some mixed readings. Note that the (c) reading for (28) (<real-self, dream-self>) is unavailable, while in (29) where the arguments are switched, all four readings are present.

(28) John dreamed he married his granddaughter.

- a. ok John dreamed John married John's granddaughter
- b. ok John dreamed that he, as Bill, married Bill's granddaughter
- c. * John dreamed that John married his=Bill's granddaughter
- d. ok John dreamed that he, as Bill, married John's granddaughter

(29) John dreamed his granddaughter married him.

- a. ok John dreamed John's granddaughter married John
- b. ok John dreamed that his=Bill's granddaughter married Bill
- c. ok John dreamed that this dude John's granddaughter married him=Bill
- d. ok John dreamed that his=Bill's granddaughter married this guy, John

Hardt (2003) notes that this pattern is parallel to the pattern of sloppy and strict readings observed in Dahl (1973) for sentences with VP-ellipsis involving multiple pronouns (Dahl's puzzle) (30). The (c) reading (strict-sloppy) is again absent in (30). As Fiengo and May (1994) observe, all four readings are available in (31) where the arguments have been switched and the sloppy pronoun is embedded in the subject rather than the object.

(30) John said he saw his mother, and Bill did, too.

- a. ok Bill said John saw John's mother
- b. ok Bill said Bill saw Bill's mother
- c. * Bill said John saw Bill's mother
- d. ok Bill said Bill saw John's mother

(31) John said his mother saw him, and Bill did, too.

- a. ok Bill said John's mother saw John
- b. ok Bill said Bill's mother saw Bill
- c. ok Bill said John's mother saw Bill
- d. ok Bill said Bill's mother saw John

Fiengo and May (1994) observe that c-command relationship between the two pronouns affects the interpretation: a strict variable forces all those it c-commands to be strict as well.

Percus and Sauerland (2003) make the same observation for the data in (28, 29), a generalisation they term the Oneric Reference Constraint (ORC): a real-self *de se* pronoun forces all the *de se* pronouns it c-commands to also refer to the real self. The generalisation involving c-command holds for 2nd-person pronouns in (25, 26) as well: a deictic *you* forces all the *you*'s it c-commands to be also deictic.

This simple structural constraint describing a common pattern for 2nd-person pronouns, dream reports, and VP-ellipsis calls for a unified account for all three phenomena⁹. In particular, any analysis that has a hope of capturing this data should provide a unified treatment of deictic and impersonal uses of the 2nd-person pronoun.

5.4. Impersonal *you* is not a normal indefinite.

Even if we accept the ambiguity hypothesis, impersonal *you* is not a regular indefinite. Recall that in sentences lacking overt Q-adverbs or silent generic quantification, regular indefinites are interpreted as existentially quantified (32a). In contrast, impersonal *you* is impossible in such sentences, and only the deictic interpretation of *you* is available there (32b).

(32) *You* is not a regular indefinite

- a. A linguist/linguists just burned a house.
- b. You just burned a house. (*impersonal reading of *you*)

I thus reject the ambiguity proposal as untenable, and will look for a unified semantics for the impersonal and deictic *you*.

6. Take two: *you* as a shifting indexical.

In this section, I will pursue, and ultimately reject, the hypothesis that *you* is an indexical 2nd-person pronoun which can shift its reference under the influence of quantificational adverbs. This hypothesis was pursued in Malamud (2005).

The challenge presented by the impersonal *you* is very similar to the theoretical challenge presented and addressed by Schlenker (2003) in proposing a semantics for the 1st-person pronoun in Amharic, and the present tense in Russian. There, the interpretation of these indexicals shifts in attitude reports to the holder and time of reported attitude, respectively (33), so that the indexicals appear to be bound by the attitude verbs. The theoretical challenge presented by Amharic and Russian is reconciling the indexical nature of present tense or first-person with their shifting behavior in attitude reports.

⁹ I will not be providing an analysis for all three patterns. For an attempt at a unified account for the dream-reports and Dahl's puzzle, see Hardt (2003). This account, however, relies on a syntactic movement which makes wrong predictions about multiple pronouns inside islands. How to account for the multiple-pronoun data in all three domains is a question that, while extremely interesting, lies beyond the scope of this paper.

(33) Russian present tense

- a. Scenario: Last month, John said “I am building a house.”

V proshlom mes'ace Van'a skazal, chto on stroit dom.

In last month John said that he builds.PRES house.

‘Last month John said that he was building a house.’ (literally: ‘Last month John said that he is building a house.’)

Amharic¹⁰ 1st-person pronoun

- b. Scenario: John says “I’m a hero.” (example from Schlenker 2003: p.25)

ğon ġägna nä-ññ yəl-all.

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

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

Schlenker reanalyses attitude verbs, previously treated as quantifiers over worlds or situations, as quantifiers over contexts. A context is a tuple <author of attitude, recipient of attitude, time, world>; an indexical then refers to one of the coordinates of this tuple. This analysis for (33b) would be as indicated in (33c), where <John, x2, t1, w1> is the context of the reported speech act.

(33) c. **SAY**_{<John,x2,t1,w1>Ci} **be.hero**(AUTH(c_i), time(c_i), world(c_i))

In Schlenker’s framework, the only types of context-shifting operators (termed MONSTERS by Kaplan (1989)) are attitude verbs; all attitude verbs are monsters; the locus of cross-linguistic variation is which, if any, indexicals can shift under their influence. Anand and Nevins (2004) cite evidence from Slave showing that the picture is a bit more complex. Slave, an Athapaskan language, demonstrates that not all attitude verbs are monsters, since different indexicals in that language shift under the influence of different verbs. For instance both 1st and 2nd person indexicals shift under the influence of *tell*, but only 1st person shifts under the influence of *want* (34).

(34) a. Slave *tell* – embedded 1st and 2nd person shift

[segha ráwɔd’í] sédidi yìlé.

[1.sg-for 2.sg-will-buy] 2.sg-tell-1.sg PAST.

‘You told me to buy it for you.’

b. Slave *want* – embedded 1st person shifts

sú [leshuyie k’eguhw’e] yerinewe.

Q [spoon 1.sg-will-lick] 2.sg-want.

10 Special thanks to Aviad Eilam for correcting my Amharic transcriptions in accordance with the conventions of Leslau (1995).

‘Do you wish that you lick the spoon?’ (‘Do you want to lick the spoon?’)

c. Slave *want* – embedded 2nd person does not shift

denexare [wojɛ] yenɪwe.

sister [2.sg-will-sing] 3.sg-want.

‘Sister wishes that you sing.’ (‘Sister wants you to sing.’)

Anand and Nevins (2004) argue that the locus of variation is the monster and not the indexical: depending on the context-shifting operator involved, different indexicals will shift, both within a language, and cross-linguistically.

The hypothesis that impersonal *you* is a shifting indexical would further expand the cross-linguistic typology of monsters, arguing that not only attitude verbs, but also Q-adverbs may shift (certain) indexicals in some languages.

6.1 *Always a monster?*

Second hypothesis (also wrong): *You* is a shifting indexical, like Amharic *I*, and Q-adverbs are monsters. Q-adverbs quantify over contexts, shifting the meaning of *you*.

We can treat *you*, both on its arbitrary and deictic use, as an indexical, always referring to the addressee coordinate of the context. Extending Schlenker (2003), we could reanalyse quantificational adverbs (previously treated as quantifiers over situations, cf. Lewis (1975), Kratzer (1989), von Stechow (1994)) as quantifiers over contexts.

The new contexts introduced (and the worlds or situations in them) are imaginary contexts with a speaker and an addressee in an act of speech partially described by some restrictor phrase (e.g., for (9) repeated below as (35) an act of speech occurring in those days).

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

The actual speaker and, via recognition of speaker’s intent, the actual addressee pretend to place themselves into the imaginary context’s speaker and addressee respectively.

This restriction is part of the presupposition associated with *you*: the hearers are asked to place themselves (and attend to) the context introduced in the sentence (36).

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

In sentences that involve no quantification over contexts, *you* will be forced to pick the addressee of the speech context, resulting in the obligatory deictic interpretation as in (37a). *You* picks out the addressee coordinate of the context c_0 , while the verb refers to the situation s_0 , which is one of the coordinates of

the context c_0 (37b).

The presupposition is then filtered out, since the addressee is already in the context of speech, and presumably attending to it.

(37) Deictic readings of *you*

a. You burned a house.

b. $\lambda c_0. \exists x. \mathbf{house}(x) \ \& \ \mathbf{burn}(\text{addressee}(c_0), x, s_0)$

c. Paraphrase: There is a house and the hearer of context c_0 burned this house.

When quantification over contexts is introduced, *you* will additionally have the option of referring to the addressee coordinate of the quantified context, leading to QVE as in (38a). *You* then co-varies with the context, acquiring the quantificational force of a Q-adverb (38b); in predicates that require situation variables, the variable s is one of the coordinates of the context c .

The empathy effect results from the nature of the context: the addressee of the imaginary context is simply the (soul of the) addressee of the actual speech context placed in somebody else's shoes.

(38) Impersonal readings of *you*

a. [In those days] You usually/rarely loved the queen.

b. $\lambda c_0. \mathbf{Most} \ c / \ \mathbf{Few} \ c. \ \mathbf{love}(\text{addressee}(c), \iota x[\mathbf{queen}(x,s)], s)$

c. Paraphrase: Imagine the contexts of hypothetical speech acts in those days in which I am the speaker and you identify with the hearer. For most such speech acts, the hearer loves the queen.

A consequence of this proposal is that languages will differ along three dimensions: which items can quantify over contexts in them (verbs of attitude or Q-adverbs), which indexicals can use this quantification to shift, and which indexicals shift with which operators. Just as in Slave different verbs shift different indexicals (34), so in Amharic, where verbs of attitude quantify over contexts, Q-adverbs don't, since first-person pronoun doesn't show impersonal-like QVE (39).

(39) $\text{əne} \ \text{kä-niw} \ \text{york} \ \text{sälä-hon-ku} \ \text{bəzugize} \ \text{yä-yanəkin} \ \text{budən} \ \text{ə-dägf-allähu.}$

I from-New York as-be.PRF-IS usually PM-yankee team S-support.IMP-AUX.IS.

'If I am from New York, I am usually a supporter of the Yankees.'

(No QVE reading, just temporal 'sometimes I support them, sometimes I defect')

At the same time in Russian, attitude verbs shift the indexical present tense. However, attitude verbs do not shift the 2nd person pronoun *ty* 'you', which shows variability with Q-adverbs. Thus, in Russian, attitude verbs may be associated with operators that just shift the time, while Q-adverbs may be

associated with operators that just shift the addressee.

While this analysis seems to derive the data, and places *you* into the cross-linguistic typology of shifting indexicals, there are several arguments against treating *you* as a shifting indexical and Q-adverbs as monsters, which I will review in the next section.

6.2. Why *always* is not a monster.

In trying to derive the indefinite behaviour of impersonal *you* by turning Q-adverbs into monsters, we run into two immediate problems.

First, it is not clear what kind of contexts Q-adverbs introduce. Attitude reports, by virtue of being attitude reports, have an author (attitude holder), possible addressee (if the attitude is expressed), a time and a world that are associated with the act of speech or thought that the attitude verb describes (40).

(40) Attitude verbs and contexts

- a. John told me that a unicorn was in the garden.
- b. Context introduced by *told*: author=John, addressee=Sophia, time = $t_1 < t_{\text{now}}$,
world = w_1 in which unicorns exist
Context of utterance: author=Sophia, time= t_{now} , world= w_0 in which, to my knowledge,
unicorns do not exist

In contrast, Q-adverbs like *rarely* may be quantifying over situations, times, or worlds; however, no speech acts are naturally associated with them¹¹. Indeed, in sentences like (41), the situations described may have no speech or thought going on in them at all. So, if *rarely* does not introduce contexts of thought or speech, what contexts does it introduce?

(41) Q-adverbs and contexts

- a. In those days, you usually/rarely lived to be 60.
- b. John rarely eats meat.

More importantly, we run into a counting problem in trying to count those contexts and derive the truth-conditions of the sentences: in (41a), it really seems like we are counting people who live in those days, not “contexts.”

In principle, we could have dozens of imaginary speech acts per person ‘in those days’, predicting that (41a) is true in cases when most contexts (but not most persons) satisfy the condition – but in fact the only things we are counting are persons, not imaginary speech acts. Thus, if we can imagine that John the Old lived till 100 years of age and participated in 10000 imaginary speech acts during that time, while another 500 people in the same village lived till 50 years of age and participated

¹¹ This argument was first made in Anand’s (2005) response to Malamud (2005).

as hearers in only 5000 total imaginary speech acts between them, then (41a) is false – most people in those days failed to live till 60. However, counting contexts predicts that (41a) is true – for most imaginary contexts in those days, the hearer of that context lived to be 60 (in fact, he lived to be 100).

This is similar to the proportion problem that arises when QVE readings are derived for sentences with indefinites in situation semantics (42). In principle, every American can be involved in thousands of situations – so an analysis in (42b) would incorrectly count many situations for each person. To resolve this problem, an appeal to minimal situations is made – we shrink the slice of reality that is inside the situation till it only contains a person; then we count those tiny situations. To distinguish two different situations containing the same person, we would have to include the notion of time, or other additional circumstances, which would make the situation non-minimal. Thus, we end up counting people via counting minimal situations (42c) (cf. von Stechow 1997/2005, inter alia).

- (42) a. An American usually lives to be 60.
 b. Most situations s containing an American are such that the American in s lives to 60.
 c. Most minimal situations s_{\min} containing an American are such that the American in s_{\min} lives to be 60.

The proportion problem for contexts, however, cannot be resolved by minimising them. That is because contexts/speech acts are different from situations in that they involve (minimally) a time and a world of speech or thought, in addition to one or two people involved in speech or thought. Inclusion of time is necessary to account for shifting time indexicals in Russian (43a) and Zazaki (43b).

- (43) Russian: John said “I am building a house” last month.
 a. V proshlom mes'ace Van'a skazal, chto on stroit dom.
In last month John said that he builds.PRES house.
 ‘Last month John said that he was building a house.’ (literally: ‘Last month John said that he is building a house.’)
 Zazaki: Hesen said “I kissed Rojda yesterday” a week ago.
 (from Anand and Nevins (2004), p. 2, example (7))
 b. Hefte nayeraraver, Heseni mi-ra va ke o vizeri Rojda paci kerd.
Week ago Hesen.OBL me-at said that he yesterday Rojda kiss did.
 ‘A week ago, Hesen said that he kissed Rojda eight days ago.’ (literally: ‘A week ago, Hesen said that he kissed Rojda yesterday.’)

In both (43a) and (43b), the attitude verb shifts the context so that the time coordinate changes to last month and a week ago, respectively. Thus, we cannot shrink the contexts to include only persons and not times.

To derive correct truth-conditions for a sentence like (41a), repeated below, all the imaginary speech contexts which involve the same addressee should count only once.

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

However, since contexts are unshrinkable, the contexts corresponding to potential speech acts occurring with the same persons at different times must be counted separately. We are thus stuck with the proportion problem, and the multiple contexts per person living in those days yield the wrong truth-conditions for sentences like (41a).

6.3. Simple monsters don't suit *you*.

The shifting-indexical account of impersonal *you* has two additional drawbacks. First, to account for empathy-tracking of impersonal *you* (22), quantification over contexts alone is not sufficient. We must restrict ourselves to the worlds in which the hearers imagine themselves in someone else's shoes. This is an additional assumption not motivated independently. In fact, as I will argue in the next section, this is the only assumption we need to derive the impersonal and deictic uses of *you*. Once we put the hearer into someone else's shoes, we will not need to employ quantification over contexts to derive the QVE data.

Finally, the shifting-indexical analysis of *you* may fail to derive the multiple-pronoun data in (25, 26). In a recent paper, Anand and Nevins (2004) argue for a *Shift-Together* constraint on shifting indexicals (p.5):

(44) Shift-Together Constraint: **All indexicals** within a *speech-context domain* must pick up reference **from the same context**, where a speech-context domain is the scope of a verb-of-saying up to the scope of the next c-commanded verb-of-saying.

The multiple-pronoun data in (25), (26) violates this constraint by allowing some mixed readings. That is, unlike true shifting indexicals (45a), which must shift together even when the two items are not in a c-command relationship, 2nd person pronouns are allowed to have different interpretations in such contexts (45b).

(45) 2nd person pronouns don't shift together

Zazaki (from Anand and Nevins 2003: p.7 example (21))

a. Hesen va kε [pyaay kε mi-ra hes kene] [pyaay kε mi-ra hes ne kene] ame zuja.

Hesen said that [people that me.OBL like do] [people that me.OBL like not do] came together.

i. ok H. said that people who like me and the people who don't like me met

ii. ok H. said that people that like AUTH(u) and the people that don't like AUTH(u) met

- iii. * H. said that the people that like me and the people that don't like AUTH(u) met
- iv. * H. said that the people that like AUTH(u) and the people that don't like me met

English

- b. In those days, your sister and your stepdad could meet in private.
 - i. ok Addressee's sister and addressee's stepdad could meet
 - ii. ok One's sister and one's stepdad could meet
 - iii. ok Addressee's sister and one's stepdad could meet
 - iv. ok One's sister and addressee's stepdad could meet

I thus conclude that the 2nd person impersonal cannot be analysed as a shifting indexical.

7. The proposal for *you*: body and soul.

I propose a unified analysis for the impersonal and deictic use of *you*. I do so by, first, separating addressee's SELF and addressee's PERSONA in the reference of *you*. This separation is independently made in accounting for individuals in counterfactuals like (46). In (46), *you/I* refer to addressee/speaker themselves (their souls/minds/selves), describing a (counterfactual) situation where they are in Mary's shoes/persona/role.

(46) Counterfactuals

- a. If you/I were Mary, you/I wouldn't be dating this horrid guy she's with! =
- b. = If your/my *self* had Mary's *persona*/role, this self (in Mary's role) wouldn't be dating this guy

By examining counterfactual statements more closely, we can see that the particular set of properties that are common between personas of the same self vary widely depending on the sentence (47). In (47a), my self acquires Bush's presidential powers as part of the persona, but retains my own ideas about war and peace in the Middle East. In contrast, in (47b), my self acquires Bush's ideas about war as a part of the persona¹².

12 In his seminal proposal, Lewis (1973) analyses counterfactuals using possible world semantics: "Something has for *counterparts* at a given world those things existing there that resemble it closely enough in important respects of intrinsic quality and extrinsic relations, and that resemble it no less closely than do other things existing there" (p.39). For sentences 'If I were you...', he writes, "the antecedent-world are worlds where you and I are vicariously identical; that is, we share a common counterpart. But we want him to be in *your* predicament with *my* ideas, not the other way around" (p. 43). This serves as an argument for the existence of multiple counterpart relations stressing different aspects of comparison: e.g., one relation based on predicament, and another based on ideas. As (47) shows, the true generalisation about the ingredients of self and persona are not about ideas and predicaments.

(47) Variation in personas¹³

- a. If I were President Bush, I would not have started the war in Iraq.
- b. If I were President Bush, I would be a raving war-monger.

In (46a), my self-awareness and point of view (my *self*) occupy the body-counterpart of Mary in a world which is otherwise just like the actual world. Thus, in all counterfactuals in which the antecedent requires two individuals to be the same person (i.e., to share a counterpart in some world), the subject's contribution to this combined person (i.e., the counterpart relation for the subject) will be based on the self / point of view, while the other NP's contribution (counterpart relation) can be based on anything other than the self¹⁴.

The notion of self is a matter of perspective and self-awareness. As discussed in the rich literature on *de re/de se* distinction, it is this property which distinguishes the referents of *de se* expressions (Lewis 1979, Chierchia 1989, among others). To illustrate, in both sentences in (48, 49), John has an attitude/dream about himself, and each sentence in (48, 49) has two readings. (48) is ambiguous between a reading in which John is aware that his attitude is self-referential (48a, *de se*), and also a reading in which John doesn't know that he is in fact referring to himself (48b, *de re*) – perhaps if he sees himself on TV and doesn't realise that the person in the TV is him.

(48) John hoped that he would lose the contest.

- a. *De se*: John thought “I hope I will lose the contest.”
- b. *De re*: John thought “I hope this guy will lose the contest.” (this guy happens to be John)

Similarly, in a scenario where John dreams that he is Brigitte Bardot (adapted from Lakoff 1972), his self-awareness and perspective will be associated with Brigitte's body; in the same dream John may see his own (John's) body (animated by some other soul). Then, John can say (49), in which the 1st person pronoun can refer to John's self inside Brigitte's body (49a, *de se*) and also to John's body (49b, *de re*), or he can also say (50), in which the 3rd person pronoun can refer to Brigitte's body/persona/shell, occupied by John's self.

(49) I dreamed that I was Brigitte Bardot and I was walking down the street.

13 These types of examples were brought to my attention by audiences at Carnegie Mellon University philosophy department talk, and at Umass-Amherst semantics seminar on pronouns.

14 The concept of *self* we are employing here is very different from Lewis's (1968) definition of an individual's essence. The essence of an object is a property consisting of “the intersection of its essential attributes, the attribute it shares with all and only its counterparts” (p. 122). Thus, Lewis writes, “All your counterparts are probably human; if so, you are essentially human. All your counterparts are even more probably corporeal; if so, you are essentially corporeal.” But the self of a person can inhabit the shell of an inanimate object (i) or even an abstract concept (ii); beyond the attribute of *having the same perspective/point of view* or *sharing self-awareness as the same person*, it is hard to think of an attribute that is shared by all the personas.

(i) If I were a stone, I would not be able to feel any pain.

(ii) If I were the essence of peace and happiness, I could manage to get John and Mary back together.

a. *De se*: John's dream: Brigitte walking down the street

b. *De re*: John's dream: John walking down the street

(50) I dreamed that I was Brigitte Bardot and she was walking down the street.¹⁵

Reference to persona: John's dream: Brigitte's body with John's self walking down the street

Building on the frameworks of possible-world semantics for counterfactuals and the notion of reference *de se*, we can formalise our notion of persona, as in (51).

(51) Definition:

a. *Persona* or *shell* y of x in s is an entity/individual existing in the situation s , which has a subset of the properties of individual y that does not include y 's point of view/self/soul, and which includes the point of view/self/soul of individual x .

b. We write $persona(y,x,s)=1$ if such an entity exists¹⁶.

c. We say x 's self inhabits y 's persona/shell.

Since normally each body has exactly one soul, the assumption that the worlds involved are minimally different from each other ensures that the combination of x 's self and y 's body does not retain y 's soul. This assumption of minimal difference is built into the interpretation mechanism for counterfactuals and into any procedure that involves multiple possible worlds. Thus, in (46a), Mary's counterpart does not have Mary's self, but only mine.

I propose that in addition to the reference to addressee's self, *you* contains a variable over personas of the addressee (an indefinite) (52).

(52) $\llbracket \text{you} \rrbracket^c = \lambda s. \lambda P. \exists y \text{ persona}(y, \text{addressee}(c), s) \ \&P(y, s)$

Paraphrase: an individual whose shell is inhabited by addressee's self

In a context without any adverbial quantification in (32b, 37a), repeated below as (53a), the reading would be "There is an individual in the situation s whose shell is inhabited by the addressee's self, and who burned a house in s ," as shown in (53b).

(53) Deictic uses of *you*:

a. You burned a house.

¹⁵ This example is very slightly less natural, perhaps through competition with (49).

¹⁶ In fact, the formula $persona(y,x,s)$ is true iff the counterpart of x 's self in s inhabits in s the counterpart in s of the shell of y ; in other words, the counterpart in s of x with respect to the counterpart relation based on self, inhabits in s the counterpart in s of y with respect to the counterpart relation based on the shell (based on something other than the self).

- b. $\lambda s_0. \exists y \exists z \text{ house}(z, s_0) \& \text{persona}(y, \text{addressee}(c), s_0) \& \text{burned}(y, z, s_0)$
 c. Paraphrase: There is an individual in s_0 , such that the addressee burned a house while in the shoes of this person = Addressee's *self*, in some body, burned a house in s_0

Normally, the individual whose shell the addressee's *self* occupied when burning the house – the addressee's persona – is the addressee him/herself; that is, we usually assume that people inhabit their own shoes. However, if prior context provides a belief that the addressee is a witch and can possess other people's bodies, and so could burn a house while in someone else's shoes, that reading also becomes possible.

In QVE contexts, the variable over personas is bound by the Q-adverb (depending on the framework, by situation-semantic or other means). Thus, (54a) would read 'For most/few people living then, if you're in the shoes of that person, that person lives to be 60' as shown in (54b). In the situation-semantic implementation in (54b), the minimal situations chosen are the ones containing a person and located 'in those days'.

(54) Arbitrary uses of *you*:

- a. In those days, you usually/rarely lived to be 60.
 b. $\lambda s_0. \text{Most/Few } s [\text{In-those-days}(s) \& s \in \text{Min}(\lambda s'. \exists y \text{ persona}(y, \text{addressee}(c), s'))]$
 $[\forall s'' s_{\min} < s'' \text{ Lived-to-60}(\text{ty. persona}(y, \text{addressee}(c), s), s'')]$
 c. Paraphrase: For most people y from those days: if addressee's self is placed in the persona of y , this combination of addressee's self and y 's persona lives to be 60¹⁷

Demonstrating the normal flexibility of the counterpart relation (cf. 47), a different context can serve to remove humanity from the set of properties shared by the addressee and the shell-providers (55).

(55) In those days, you had freedom to roam only if you were a cow.

In contrast to *you*, *I* contains no such variable over personas (56a), allowing counterfactuals (46a, 47), as shown in (56b), but not the impersonal use¹⁸.

17 A paraphrase spelling out explicitly all the counterpart relations and worlds: For most people y from those days: in all the accessible worlds w in which the counterpart of addressee with respect to self in w is also the counterpart of y with respect to the shell in w , the-counterpart-of-your-self-placed-in-counterpart-of- y lives to be 60 in w .

This paraphrase spells out the fact that the composite of the addressee's self and the shell of a person living in "those days" will not exist in the actual world – after all, in actual world the addressee's self lives inside addressee's shell. Thus, the situations mentioned in the formula in (54b) are partial slices of non-actual (though accessible) possible worlds.

18 I omit such complications as modal base and ordering source in the formulas for conditionals in general and counterfactuals in particular, to simplify the presentation.

(56) The meaning of *I*:

a. $\llbracket I \rrbracket^c = \text{AUTH}(c)$

b. $\llbracket \text{If I were Mary, I wouldn't be dating that horrid guy} \rrbracket^c =$

$= \lambda s_0. \forall w [\text{be}(\text{Mary}, \text{AUTH}(c), w)] [\neg \text{date}(\text{AUTH}(c), \text{the-horrid-guy}, w)]$

As the attentive reader will note, the main difference between the present proposal (53) and the monster analysis (attempt two, repeated below in (57a)) is that here, we keep the context put, so that the addressee of the context is always the same person – the actual hearer. The variability in examples like (41a, 54a) does not result from the change of hearer (as shown in (38), repeated below in (57b)), but from the change in the shoes/bodies the hearer occupies in different situations (as shown in (54)).

(57) a. $\llbracket \text{you} \rrbracket^{s,c} =$ addressee(c) if the hearer is placed in c and attending to c
undefined otherwise

b. In those days, you loved the queen.

$\lambda c_0. \text{Most } c / \text{Few } c. \text{love}(\text{addressee}(c), \text{ix}[\text{queen}(x,s)], s)$

Paraphrase: Imagine the contexts of hypothetical speech acts in those days in which I am the speaker and you identify with the hearer. For most such speech acts, the hearer loves the queen.

This proposal captures all the properties of the constructions with *you*. First, while in QVE sentences *you* behaves exactly like an indefinite, in certain contexts where indefinite NPs receive an existential reading, *you* has no existential, but only a deictic reading. This is explained as in (53) – since *you* contains an indefinite persona, episodic sentences yield an existential interpretation for a persona, resulting in the “addressee’s self in some persona” reading. An episodic sentence contains only a reference to a single situation, which in turn forces the addressee to stick to a single persona/body. Thus, we predict that an episodic context will allow only a deictic interpretation for *you* (the hearer in some body), and will never have an existential reading (some person).

Second, every use of *you* involves an appeal to the hearer’s empathy, and the empathy is not limited to humans, as shown in (55). We need no additional stipulation to explain this “across the board” empathy. Every impersonal *you* is a hidden conditional, involving a supposition that the addressee places him- or herself in someone else’s shoes. The reference of impersonal *you* is not limited to human beings, since even animals and inanimate objects can provide bodies/personas for the hearer.

Third, the denotation of *you* remains clearly singular in our analysis, capturing the fact that, unlike impersonals like *man* or *si*, *you* does not support reciprocals like *each other*.

At the same time, the present analysis is superior to other approaches. Because we treat the deictic and the impersonal uses of *you* in a unified manner, none of the arguments against the ambiguity analysis (first attempt) apply. The current proposal also escapes the problems encountered

by the monsters analysis (second attempt). First, we make no independent stipulation to explain the empathy-tracking of *you*, which falls out naturally in the current proposal. Second, recall that the monster analysis ran into a counting problem in deriving the readings of QVE sentences with *you* (41a): to achieve the effect of counting the persons living in those days, we had to count all the contexts with the same addressee as a single context, ignoring the time and world coordinates of those contexts. In contrast, in our analysis, Q-adverbs quantify over situations, and not contexts, allowing us to apply the standard solution to the counting problem by invoking minimal situations (von Stechow 1997/2005).

Thus, by separating the references to body and soul in the denotation of *you*, we have derived the full range of readings for sentences with the 2nd person pronoun, while avoiding the troubles that previous proposals run into.

8. *Man/si*, kinds, and the first person.

We now move to consider possible analyses for the other two impersonals, *man* and *si*. Recall that *man* and *si* differ from impersonal *you* in several respects. First, they receive existential readings in episodic sentences, whereas *you* must be deictic in such contexts. Second, they do not require hearer empathy in the same degree as impersonal *you*. Third, they can be morphologically and semantically plural, since they support reciprocals like *each other*. Yet another difference concerns dialectal variation in German and Italian: in some dialects, these items don't have the indexical readings, and are always interpreted impersonally.

Thus, a semantic analysis of these items must have the following features: it must derive the QVE effects and the existential readings, and so should contain an indefinite variable; it must allow or require plurality which is not limited to group interpretation; and it must be flexible in deriving the indexical readings to accommodate the within-dialect and inter-dialect variation. In this section, I will consider, and ultimately reject, a very attractive analysis of *man* and *si* that has these features. The analysis will treat the impersonal pronouns as kind-denoting expressions, making it possible for them to undergo indefinite-like QVE, to denote pluralities, and to allow indexical readings. However, this approach runs into a fundamental problem: *man* and *si* are completely incompatible with kind-selecting predicates, and so simply cannot be kind-denoting. Section 9 will then present an alternative account, which preserves the advantages of the first approach, while avoiding the claim that *man* and *si* denote kinds.

In her 1997 presentation, Angelika Kratzer suggests that *man* syntactically is a combination of two elements: one encoding indexicality (similar to a 1st person pronoun), and the other (a silent determiner) specifying whether the combination will include or exclude this first element (58).

(58) Kratzer's (1997) denotation for *man*

- a. $\text{man/si} = [\text{Det}_{\text{MAN/SI}}]$
- b. $[[\text{Det}_{\text{IN}}]]^{c,w} = \lambda x. \text{ the group of } x \text{ in } w$
- c. $[[\text{Det}_{\text{EX}}]]^{c,w} = \lambda x. \text{ the anti-group of } x \text{ in } w$
- d. $[[\text{MAN/SI}]]^{c,w} \approx \text{ the speaker of context } c$

This analysis makes the denotation of *man* and *si* on the inclusive reading identical to that of the 1st person plural pronoun *we*. Indeed, a closer look at the 1st person plural pronoun reveals that it often shows unexpected behaviour for a definite, indexical expression. First, *we* is susceptible to QVE with Q-adverbs, like an indefinite (59a). In fact, the interpretation of (59a) is equivalent to that of (59b), which involves another morphologically definite NP containing the 1st person.

- (59) a. Nowadays, we always/usually/rarely live to be 60.
 b. Nowadays, my kind / people of my kind always/usually/rarely live to be 60.

Note, however, that the NPs in (59b) are explicitly kind-denoting expressions, which, in general, are subject to indefinite-like QVE (60).

(60) English

- a. Students are always/usually/rarely/sometimes smart.

Italian

- b. Gli studenti sono di solito/raramente intelligenti.

The students are of usual/rarely smart.

‘Students are usually/rarely smart.’

German

- c. (Die)Studenten in Penn sind gewöhnlich stolz auf den Präsidenten.

(The)Students in Penn are usually proud of the president.

‘Penn students are usually proud of the president.’

Chierchia (1998) provides a framework for deriving the quantificational variability effects with kinds. This approach assumes that common nouns may sometimes be born in the guise of kinds – intensional individuals, which are semantically represented as functions from worlds into the plurality comprising all instances of the kind in the world. Thus, in English, *dogs* is such an intensional individual, the dog-kind, or the function from possible worlds to the totality of dogs in each world. Depending on the language-particular parameter, nouns either always denote kinds (e.g., in Chinese), or always denote properties (e.g., in Romance languages like Italian), or sometimes properties and sometimes kinds (e.g., in Germanic languages like English and German).

All the languages under consideration here are ones that at least sometimes allow common nouns to have the basic denotation of properties, that is, sets of individuals. Singular count nouns denote sets of singular atoms (e.g., {**apple1**,**apple2**,**apple2**}), plural nouns denote sets of atom-sums or atom-sets (e.g., {**apple1**,**apple2**,**apple1+apple2**} or {{**apple1**},{**apple2**},{**apple1,apple2**}}).¹⁹

¹⁹ Mass nouns are like plural count nouns in that they denote sets of sums that form a join semilattice under a part-whole relation. They differ from plural count nouns only in that the denotation of atomic/singular layer is vague in this case (what counts as the minimal unit of water?).

The definite and indefinite articles combine with the properties that the common nouns denote, turning them into full NPs. In addition, there are type-shifting operators that are applied as a last resort when no determiner with the same denotation is available. Two of them – \cup and \wedge convert a kind into a property (e.g., \cup **furniture** is the kind **furniture** converted into the set of sub-pluralities of the plurality comprising the furniture-kind, that is, into the set containing pieces of furniture and their sums) and, when defined, a property into a kind (e.g., \wedge **students** turns the property of being a student into the student-kind).²⁰

This last operation, Chierchia proposes, is not always defined. For instance, a property of being Gennaro Chierchia has only singular instantiations in every world, so \wedge **Gennaro-Chierchia** is not a good kind. Chierchia (1998) argues that property-denoting expressions containing indexicals fail to generalise into a kind. Thus, a property of **sitting here** does not have generaliseable behaviour of a kind, so the kind \wedge **people-sitting-here** is undefined. In light of these arguments, it is surprising that, as the examples in (59) show, this restriction does not hold for expressions containing the 1st person pronouns. In fact, NPs with 1st person indexicals pass every standard test for kind-hood, such as combining with predicates that select for kinds (61).

(61) First person kinds

- a. Someday, we'll be extinct/widespread.
- b. Nowadays, we have spread to every corner of the Earth – we are everywhere.

Given this ability of 1st person indexicals to form kinds, it is not surprising that they exhibit QVE, like other kind terms (60). In fact, kind-denoting definites and even demonstratives are susceptible to QVE (62).

- (62) a. The students at Penn are always/usually/rarely smart.
 b. This plant is always/usually/rarely poisonous.

In fact, Kratzer (p.c.) argues that the differences arising in our (in)definiteness test established in

²⁰ In Romance, all nouns are properties, and so they require a determiner to be turned into arguments; Italian permits a null determiner in certain syntactic contexts (focus positions, object position). To create kind-denoting expressions, an intensionalised iota operator (\wedge), pronounced as its non-intensionalised version, the definite article, applies to appropriate plural nouns, as shown in (i) below.

In Germanic languages, nouns are either properties (count nouns) or kinds (mass nouns). The shifter \wedge is needed to turn plural count nouns into arguments, allowing bare plurals in argument positions (iia). In English, the availability of this shifter blocks the use of the intensionalised denotation of the definite article (\wedge) to create the same meaning (iib). For reasons requiring further research, in German this is not ruled out: thus, while bare plurals are the normal way to express kind terms in German, the language also permits definite plurals as kinds.

- | | |
|---|---|
| Italian: widespread (\wedge dogs) | English: widespread (\wedge dogs) |
| i. I cani sono diffusi. | ii a. Dogs are widespread. |
| <i>The dogs are widespread.</i> | b. *The dogs are widespread. |
| 'Dogs are widespread.' | |

examples (2-5) may not be due to the definiteness or indefiniteness of the NPs involved in these examples, but to the availability of an unbound situation variable for the Q-adverb to quantify. She brings examples such as (63) to bear on the issue.

- (63) a. In this town, the firemen are sometimes/usually/always the policemen.
 b. In this country, the president is usually smart.

The argument is at least partially valid: in fact, severely restricting the situation makes even an indefinite immune to Q-adverb quantification (64).

- (64) #A student sitting over here now is usually smart.

At the same time, examples in (63) are crucially different from the QVE with indefinites and kinds in (2-4, 60). To see that, consider the truth of (63b) and (65a) in the scenario given in (65b).

- (65) a. In this country, presidents are usually smart
 b. In country X, monarchy was toppled in late 1949 and the country became a republic. There are presidential elections every year, and the only restriction is a term limit of two consecutive terms. Starting in 1950, Mr. Dufus runs for president every time that he is eligible. He was elected in 1950, and re-elected in 1951. In 1952, Mr. Dufus was ineligible and Mr. Genius was elected, but in 1953 Dufus ran again, and again served for two terms. In 1955, Mr. Smarty was elected for one year. This pattern has been repeating ever since: Dufus serves his two terms, then another person is elected for one term (a different person each time), and then Dufus again. It so happens that Mr. Dufus is very stupid, while the various people elected in between his presidential stints are all very smart.

While (65a) is true in this scenario – most people who served as presidents of country X are smart, (63b) is false – indicating that what “usually” ends up counting in (63) is not the people, but the presidential terms/units of time. Thus, I conclude that sentences in (63) do not exemplify true QVE, but rather show that some definite NPs contain a time or situation variable. Thus, we can maintain QVE with Q-adverbs as our test for (in)definiteness, with two acknowledgements: first, that restricting the situation will make an indefinite immune to Q-adverbs, and second, that all kind-denoting expressions, whether morphologically definite or not, will yield QVE with Q-adverbs.

Returning to the analysis of impersonals *man* and *si*, we thus note that analysing them as kind-denoting expressions containing a 1st person pronominal element will derive the QVE effect, while making them synonymous with *we* (*wir/noi*) on the inclusive reading. Restating Kratzer’s denotations in terms of kinds, we get (66).

(66) Kratzer's (1997) denotation for *man*, kind-denoting (take one)

- a. $\text{man/si} = [\text{Det}_{\text{MAN/SI}}]$
- b. $[[\text{Det}_{\text{IN}}]]^{c,w} = \lambda x. \text{ the kind of } x \text{ in } w$
- c. $[[\text{Det}_{\text{EX}}]]^{c,w} = \lambda x. \text{ the anti-kind of } x \text{ in } w$
- d. $[[\text{MAN/SI}]]^{c,w} \approx \text{the speaker of context } c$

Note that we are lacking a definition for “the anti-kind of *x*.” The most natural candidates are given in (67) below.

- (67) a. $[[\text{Det}_{\text{EX}}]]^{c,w} = \lambda x. \text{ the kind containing individuals of all kinds other than the kinds of } x$
- b. $[[\text{Det}_{\text{EX}}]]^{c,w} = \lambda x. \text{ the kind containing all individuals from the kind of } x, \text{ other than } x$
him/her/itself

The former yields nonsense, for instance, in examples like (7, 8) repeated in (68) below. As paraphrases in (69) show, the first definition for “the anti-kind of *x*” predicts wildly wrong interpretations.

(68) German

- a. *Damals lebte man normalerweise/selten bis 60 Jahre.*
Then lives MAN usually rarely till 60 years.
‘In those days, one usually/rarely lived till 60.’
(QVE available: *most/few people in those days lived to be 60*)

Italian

- b. *Qui si è di solito/raramente tifosi dell'Yankees.*
Here SI is usually / rarely fans of.the Yankees.
‘Here one is usually/rarely a fan of the Yankees.’
(QVE available: *most/few people here are fans of the Yankees*)

(69) “the kind containing individuals of all kinds other than the kinds of *x*” predicts

- a. In those days, people other than those belonging to my kind usually/rarely lived to be 60.
- b. Here, people other than those belonging to my kind are usually/rarely fans of the Yankees.

The second definition comes closer to capturing the meanings of these sentences (70a), but still misses the mark for (70b), as the paraphrases demonstrate.

- (70) “the kind containing all individuals from the kind of x , other than x him/her/itself” predicts
- a. In those days, people of my kind other than me usually/rarely lived to be 60.
 - b. Here, people of my kind other than me are usually/rarely fans of the Yankees.

While the prediction in (70a) is basically correct (assuming I didn’t live in those days), the meaning of the sentence in (68b) differs from that given in (70b), since in (68) the speaker is not necessarily excluded from the set of potential Yankees fans. However, explicitly removing such exclusion from the definition of “anti-kind” makes the inclusive and exclusive readings of *man/si* completely synonymous, as shown in (71).

- (71) a. $[[\text{Det}_{\text{IN}}]]^{\text{c,w}} = \lambda x. \text{ the kind of } x \text{ in } w$
 b. $[[\text{Det}_{\text{EX}}]]^{\text{c,w}} = \lambda x. \text{ the kind containing all individuals from the kind of } x \text{ in } w$

What precisely is the difference between an inclusive and an exclusive reading of *man/si*, and how can we capture it? Intuitively, a sentence like “we arrived late” does not mean “the kind of the speaker arrived late,” but is close to “the group of the speaker arrived late.” That is because a group is a smaller plurality of individuals in the actual world, while kind is a function from possible worlds to the totality of individuals of that kind in that world. At the same time, a sentence like “in those days, one lived to be 60” is interpreted as “the kind of the speaker lived to be 60” (if we assume that “the kind of the speaker” can be synonymous with “humankind” in its widest interpretation), but not as “the group of the speaker lived to be 60.” This is exactly the difference between a regular definite NP that involves a definite article (72), and a kind-denoting version of that NP that involves an intensional version of the definite article (73).

- (72) a. $I \text{ cani (the dogs)} = ix. \mathbf{dogs}(x) = \text{the maximal group of dogs in the given situation}$

b. $I \text{ cani sono arrivati.}$

The dogs are arrived.

‘The dogs arrived.’

- (73) a. $I \text{ cani (the dogs)} = \hat{ix}. \mathbf{dogs}(x) = \hat{\ } \mathbf{dogs} = \text{the dog-kind}$

b. $I \text{ cani sono diffusi.}$

The dogs are widespread.

‘The dogs are widespread.’

This insight allows us to capture the distinction between inclusive and exclusive *man/si* along the same lines, giving us the denotations in (74).

(74) Denotation for *man*, kind-denoting (final)

- a. $\text{man/si} = [\text{Det}_{\text{MAN/SI}}]$
- b. $[[\text{Det}_{\text{IN}}]]^c = \lambda x. \lambda s$ the group of x in $s = \lambda x. \lambda y. \text{people-of-}x(y,s)$
- c. $[[\text{Det}_{\text{EX}}]]^c = \lambda x. \text{the kind of } x = \lambda x \wedge \lambda y. \text{people-of-}x(y)$
- d. $[[\text{MAN/SI}]]^c \approx$ the speaker of context c

The analysis in (74) has the theoretically attractive feature that it unifies the exclusive and inclusive uses of *man/si* – the determiner in (74c) is simply the intensional version of the determiner in (74b). Thus, under this analysis *man* and *si* essentially mean ‘people of the speaker.’ This allows us to derive the exclusive readings (7-8, 17, repeated below as 75, 76), both for episodic (17, 75) and quantificational (7-8, 76) contexts, as well as the inclusive readings.

(75) German

- a. Gestern, hat man ein Haus abgebrannt.
Yesterday has MAN a house burned.
‘Yesterday, someone burned a house.’

Italian (Cinque 1988: 43a)

- b. Oggi a Beirut si è ucciso un innocente.
Today in Beirut SI is killed an innocent.
‘Today in Beirut, someone killed an innocent person.’

(76) German

- a. Damals lebte man normalerweise/selten bis 60 Jahre.
Then lives MAN usually rarely till 60 years.
‘In those days, one usually/rarely lived till 60.’

Italian

- b. Qui si è di solito/raramente tifosi dell’Yankees.
Here SI is usually / rarely fans of.the Yankees.
‘Here one is usually/rarely a fan of the Yankees.’

The exclusive/impersonal uses are derived as in (77, 78) below.

(77) a. $\text{Det}_{\text{EX}} \text{MAN/SI}$ burned a house.

- b. $\lambda s. \exists z. \text{house}(z,s) \& \text{burned}(\text{the kind of the speaker}, z,s) =$

= $\lambda s. \exists z. \mathbf{house}(z,s) \& \exists y. \text{instantiation-of-the-kind-of-the-speaker}(y,s) \& \mathbf{burned}(y,z,s)$ ²¹

c. Paraphrase: Someone (from the kind of the speaker) burned a house.

(78) a. Then, $\text{Det}_{\text{EX MAN/SI}}$ usually lived to be 60

b. $\lambda s_0. \mathbf{Most/Few} s [\mathbf{Then}(s) \& s \in \text{Min}(\lambda s'. \text{instantiation-of-the-kind-of-the-speaker}(y,s'))]$

$[\forall s'' s_{\text{min}} < s'' \mathbf{Lived-to-60}(\text{ty. instantiation-of-the-kind-of-the-speaker}(y,s),s'')]$

c. Paraphrase: For most individuals y from the kind of the speaker (that is, for most people y), who were living in those days, they lived to be 60

The representation in (77a) corresponds to an episodic sentence with the exclusive reading of *man* or *si* (17, 75). The analysis in (74) predicts that the impersonal is interpreted as ‘the kind of the speaker’, allowing it to receive an existential interpretation through the same procedure as other kind terms (cf. 79a). Similarly, for the quantificational sentences (7-8, 76) derived in (78), the kind analysis for the impersonal allows it to behave in the indefinite-like manner and become susceptible to QVE, as other (plural) kind terms (cf. 79b).

(79) Kinds in episodic and QVE contexts

a. Yesterday, people burned a house.

b. Then, people usually lived to be 60.

Finally, the inclusive/indexical readings of *man/si* (12-13, repeated below as 80) are derived as in (81). The derivation of this use has the simple group-individual denotation yielding the reading for the impersonals which is essentially synonymous with the 1st person plural pronoun.

(80) German (from Kratzer 1997: 5)

a. Es war völlig klar, dass man sich nie mehr wiedersehen würde.

It was completely clear that MAN self never again see.again would.

‘It was completely clear that we would never see each other again.’

Italian (D’Alessandro 2004: 39)

b. Ieri si è arrivati tardi.

Yesterday SI is arrived late.

‘Yesterday we arrived late.’

(81) a. $\text{Det}_{\text{IN MAN/SI}}$ arrived late.

21 The introduction of the existential quantification over instantiations of a kind is the Derived Kind Predication, the standard interpretation procedure for kind-denoting expression that occur as arguments of individual-selecting verbs (see e.g., Dayal (2004) for details).

- b. λs . **arrived-late**(the group of the speaker,s)
 c. Paraphrase: We arrived late

The theoretically elegant analysis presented in (74) thus derives the full range of readings for *man* and *si*, while unifying their inclusive and exclusive uses with the kind-forming intensional and group-forming extensional uses of the definite articles in German and Italian.

In addition, this analysis explains an empirical puzzle presented by *man*: recall that this item is strongly unacceptable in existential *there*-sentences (16a, repeated as 82a), unlike indefinites (16b, repeated as 82b). Since, according to (74), *man* is a kind-denoting expression, like other such expressions it is ruled out in both ‘*es war*’ and ‘*es gibt*’ existential constructions (82c,d)

- (82) a. *Es war man gekommen. b. Es war wer/jemand gekommen.
There was MAN come. There was someone come.
 ‘Someone has come.’
- c. *Es war die Hunde schon entwickelt als die Menschen auf die Erde kommen.
There was the dog already developed as the men on the Earth come.
 Intended reading: ‘There were dogs already developed as men appeared on Earth.’
- d. *Es gibt Loewen im Universum.
There gives lions in universe.
 Intended reading: ‘There are lions in the universe.’

However, before we accept (74) as the true solution for the semantics of these items, let us conduct a brief reality check: how plausible is it to treat *man* and *si* as kind-denoting? The simplest test is to see whether these items combine with kind-selecting predicates, the way first-person pronoun *we* does in (61). The test examples for *man* and *si* are given in (83).

(83) *Man/Si* as kinds

German

- a. ??Eines Tages wird man ausgestorben/weitverbreitet sein.
Some day will MAN widespread / extinct be.
 Intended reading: ‘Someday, we/humans/our kind will be widespread/extinct.’
- b. *Heutzutage hat man sich überall ausgebreitet.
Nowadays has MAN self everywhere spread.
 Intended reading: ‘Nowadays, we/humans/our kind have spread everywhere.’
- c. * Man ist überall.

MAN is everywhere.

Intended reading: ‘We/Humans/Our kind are everywhere.’

Italian

d. *Un giorno, si sarà estinti.

Some day, SI will.be extinct.

Intended reading: ‘Some day, we/humans/our kind will be extinct.’

e. *Oggigiorno, si è diffusi dappertutto sulla Terra.

Nowadays, SI is spread everywhere on.the Earth.

Intended reading: ‘Nowadays, we/humans/our kind have spread all over the Earth.’

f. *Si è dappertutto.

SI is everywhere.

Intended reading: ‘We/Humans/Our kind are everywhere.’

These examples show that *man* and *si* resist serving as arguments of kind-selecting predicates, unlike corresponding kind terms in German and Italian, and unlike the English first-person pronoun *we*.

Another important difference between regular (plural) kind-denoting expressions and our impersonals lies in their ability to yield existential readings in the appropriate context. *Man* and *si* behave in this respect like bare plurals in English, undergoing Derived Kind Predication with appropriate predicates, as in (77a). However, definite plural kinds in German and Italian cannot undergo DKP – in the same contexts in which English bare plurals are interpreted existentially (84a), definite plurals in German and Italian are interpreted as denoting uniquely identifiable plural individuals (84b,c).

(84) English

a. Dogs are barking.

Italian

b. I cani abbiamo.

The dogs bark.

‘The dogs are barking.’ (the uniquely identifiable group of dogs is barking) or ‘Dogs bark.’

German

c. Die Hunde bellen.

The dogs bark.

‘The dogs are barking.’ (the uniquely identifiable group of dogs is barking) or ‘Dogs bark.’

While in German bare plural kinds are possible, Italian disallows them. Thus, we cannot claim

that *si*, on its exclusive reading, is a bare plural kind-denoting expression. Therefore, if *si* is a (plural) kind term, it would have to be a definite kind term, unable to undergo DKP to yield existential readings, and able to combine with kind-selecting predicates.

These differences between definite plural kinds in German and Italian and *man/si* cast doubt on the feasibility of the kind-denoting semantics for these impersonals. If impersonal pronouns cannot combine with kind-selecting predicates, and yield existential readings where other kind-denoting expressions don't, then they simply cannot denote kinds.

In the next section, I will present an alternative analysis for *man/si*, which, like the one summarised in (74), also derives the full range of readings for these items, but does not require them to be kinds on any interpretation.

9. The indefinite proposal for *man/si*.

My second analysis of *man* and *si* also partially follows Kratzer (1997), with some changes to accommodate the three requirements I summarised at the start of the previous section: indefinite-like QVE, semantic plurality, and possibility of variation with respect to speaker-inclusion. The item is still analysed as consisting of a determiner and a core indexical-like part. The silent determiner now has two functions: first, it introduces a plural *indefinite* (an existentially quantified variable), the way Farkas (2002) argues for all indefinites. Second, the determiner specifies whether this variable includes as its subpart the referent of its sister node (the 'core' item similar to 1st-person pronoun) (85).

(85) Denotation for *man/si*

- a. $\text{man/si} = [\text{Det}_{\text{MAN/SI}}]$
- b. $[[\text{Det}_{\text{EX}}]]^{c,w} = \lambda x. \lambda P. \exists y. \text{Person}(y) \& P(y,w)$
- c. $[[\text{Det}_{\text{IN}}]]^{c,w} = \lambda x. \lambda P. \exists y. x \leq y \& P(y,w)$
- d. $[[\text{MAN/SI}]]^{c,w} \approx \text{the speaker of context } c$

Note that in (85b) I do not specifically exclude the speaker from the reference of *man/si*. The core element is simply absorbed by the function without playing a role in the semantics. As a result, the exclusive *man/si* becomes truth-conditionally synonymous with the NP *a person*, allowing us to derive the correct denotation for both the episodic sentences with existentially-interpreted *man/si* (17, 75), and the QVE sentences like (7-8, 76).

Specifically, the denotation works as follows. First, *man/si* provides the variable/indefinite that can result in existential reading, deriving (17, 75) (exclusive reading shown in 86), or undergo QVE (e.g. by using existential disclosure and subsequent binding (Chierchia 1995b), or via situation semantics (von Stechow 1994)), deriving (7, 8, 76) (exclusive reading shown in 87). Second, if Det_{IN} replaces Det_{EX} , inclusive readings result.

To ease readability, I do not use situation semantics in the formulas here.

- (86) a. $\text{Det}_{\text{EX MAN/SI}}$ burned a house.
 b. $\lambda w. \exists y \exists z. \mathbf{house}(z,w) \& \mathbf{Person}(y) \& \mathbf{burned}(y,z,w)$
 c. Someone burned a house
- (87) a. $\text{Det}_{\text{EX MAN/SI}}$ usually lived to be 60.
 b. $\lambda w. \mathbf{Most} y. \mathbf{Person}(y) \rightarrow \mathbf{live-to-60}(y,w)$
 c. A person usually lived to be 60

Kratzer (1997) argues that the definite-pronoun analysis for *man* (which we have recast as the kind analysis in the previous section) is supported by the fact that the item is unacceptable in existential *there*-sentences (82a), unlike indefinites (82b). However, as argued in Malamud (2006), this effect may be due to the special discourse function of *man*, which clashes with that of the existential *there*-construction. In addition, in those dialects where the impersonal pronoun is never inclusive, *man* does not have the indexical uses that could suggest that it is a definite pronoun; however, this item too is unacceptable in existential *there*-sentences. I will leave this as an open question for future research.

10. Impersonal pronouns in donkey sentences: consequent clauses.

In this pre-final section, I will raise an important challenge presented by the impersonal pronouns. This challenge arises in any attempt to account for the behaviour of impersonals in donkey-sentences, where they behave as indefinites in the antecedent, and as definites in the consequent clause. By placing the impersonal pronouns into the general typology of definite and indefinite NPs, our analysis allows us to present this problem in a general way.

While it might seem frustrating to end our presentation on a problem, the careful consideration of the semantics of impersonal pronouns allows for a clear formulation of this challenge. We can thus view this as the first step towards improving our understanding of the interaction between the semantics of (in)definiteness and the syntax and semantics of donkey sentences.

10.1. A problem.

The behaviour of all three impersonals *man*, *si*, and *you* in donkey sentences presents a challenge for our account, or in fact, for any attempt to treat them either as definites or as indefinites. As we saw, *you*, *man*, and *si* in the *if*-clauses of donkey sentences behave like indefinites, exhibiting quantificational variability with Q-adverbs. In the same sentences, *you*, *man*, and *si* in the consequent clauses behave like definite pronouns, as illustrated in (88) below (pronouns in consequent clauses in **bold**).

- (88) English
- a. If a guy is smart, **he** is rarely/usually proud.
 b. If you're smart, **you**'re rarely/usually proud.

German

c. Wenn man klug ist, ist **man** gewöhnlich stolz.

If MAN smart is, is MAN usually proud.

‘If a person is smart, **he/she** is usually proud.’

Italian

d. Se si é intelligenti, **si** é di solito fieri.

If SI is intelligent, SI is usually proud.

‘If a person is intelligent, **he/she** is usually proud.’

The impersonals occurring in the antecedent clauses must be indefinite: otherwise they would fail to be bound by the Q-adverbs, like the definite *the farmer* in (89a). At the same time, impersonal pronouns in the consequent clauses are anaphoric to the previous occurrence of the same pronoun. Since examples in (88) involve variables co-varying under quantification, the two occurrences of the impersonals cannot be analysed as mediated by extra-linguistic reasoning (as is argued in Koenig and Mauner (1999) for the French impersonal pronoun *on*). Thus, they cannot be analysed as indefinites: only a definite can be anaphoric, as is illustrated by the lack of anaphora in the consequent clause of (89b) which involves an indefinite *a farmer*. (The expressions that prevent (89a,b) from being true donkey-sentences are in **bold**.)

(89) Definite and indefinite non-donkeys

a. If **the farmer** is smart, he is rarely/usually proud.

(no donkey-like QVE: only one farmer with fluctuating pride)

b. If a farmer is smart, **a farmer** is rarely/usually proud.

(no anaphora: the farmer or farmers that are rarely/usually proud differ from the smart farmer)

Our current understanding of the mechanisms underlying donkey anaphora forces us to treat the antecedent and consequent clauses in (88) as containing indefinites and definites, respectively. What kind of semantic animal can be definite and indefinite in the same sentence? Or, given our understanding of the nature of definiteness and indefiniteness, can there be items that are neither definite nor indefinite? Alternatively, this data may present a challenge for the general interpretive mechanisms underlying donkey sentences.

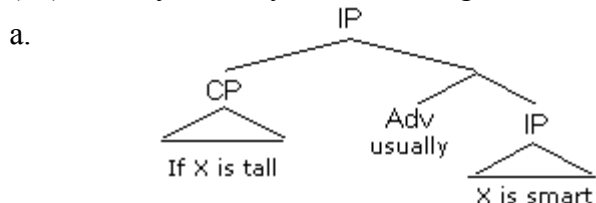
10.2. A solution: Chierchia (2000).

A solution to this challenge has been proposed in Chierchia (2000), who uses the operation of existential disclosure, similar to λ -abstraction in a framework of Dynamic Semantics. In his framework, indefinites are existentially quantified variables, while the Q-adverbs, including the silent generic operator, come equipped with a couple of disclosure/lambda operators: one for the restrictor,

and one for the scope of the adverb.

The LF and interpretation of a donkey-sentence is then as illustrated in (90) below. In (90b), the first disclosure/lambda operator erases the existential quantifier binding the variable introduced by the indefinite, while the second simply binds the pronoun. Independent stipulation is needed to prevent cases like (90c), where the index on the Q-adverb matches that of a pronoun in the restrictor. This means that the adverb can bind the pronoun as if it were an indefinite, deriving a reading for (90c) that is identical to (90b). The stipulation we need is, simply, that the index on the adverb, if it matches any other index in the sentence, must match the index of an indefinite. Finally, Chierchia rules out derivations like (90d) by appealing to Principle C of the Binding Theory, whereby R-expressions cannot be bound. The definition of syntactic binding is suitably changed so that the pair consisting of the indefinite in the restrictor and the adverb, binds the indefinite R-expression in the scope.

(89) Donkeys and Dynamic Binding



b. \llbracket If a guy is tall usually he is smart $\rrbracket = \mathbf{Most} \lambda_{x_i}[\exists x_i \mathbf{man}(x_i) \& \mathbf{tall}(x_i)] \lambda_{x_i}[\mathbf{smart}(x_i)] =$

$= \mathbf{Most} x [\mathbf{man}(x) \& \mathbf{tall}(x)] [\mathbf{smart}(x)]$

c. \llbracket If he is tall usually he is smart $\rrbracket = \mathbf{Most} \lambda_{x_i}[\mathbf{man}(x_i) \& \mathbf{tall}(x_i)] \lambda_{x_i}[\mathbf{smart}(x_i)]$

$= \mathbf{Most} x [\mathbf{man}(x) \& \mathbf{tall}(x)] [\mathbf{smart}(x)]$

d. \llbracket If a guy is tall usually a guy is smart $\rrbracket = \mathbf{Most} \lambda_{x_i}[\exists x_i \mathbf{man}(x_i) \& \mathbf{tall}(x_i)] \lambda_{x_i}[\exists x_i \mathbf{smart}(x_i)]$

$= \mathbf{Most} x [\mathbf{man}(x) \& \mathbf{tall}(x)] [\mathbf{smart}(x)]$

Here, impersonal items are classified as indefinite pronouns. This means that, as indefinites, they can be co-indexed with a Q-adverb, and at the same time, as pronouns, they can be bound without violating Principle C. Thus, using Dynamic Binding Chierchia derives exactly the donkey-sentences with the impersonal pronouns in the restrictor as well as the scope of Q-adverbs (90e).

(90) e. \llbracket If MAN/SI/YOU is tall usually MAN/SI/YOU is smart $\rrbracket =$

$= \mathbf{Most} \lambda_{x_i}[\exists x_i \mathbf{Person}(x_i) \& \mathbf{tall}(x_i)] \lambda_{x_i}[\exists x_i \mathbf{smart}(x_i)]$

$= \mathbf{Most} x [\mathbf{Person}(x) \& \mathbf{tall}(x)] [\mathbf{smart}(x)]$

Because the impersonals are pronominal, they are allowed to occur in the consequent clauses of these sentences, where other indefinites are ruled out by Binding Theory; in other respects, these items behave like indefinites.

A problem with this approach arises immediately in connection with using Principle C to rule out indefinites (but not indefinite pronouns) in the scope of the Q-adverbs. Definite R-expressions are also subject to Principle C (91a), yet, they are allowed in the consequent clauses of donkey sentences (91b).

(91) Definite R-expressions and Binding Theory

- a. *A village_i resembles the village_i.
- b. If a painter lives in a village_i, the village_i is usually pretty.

Chierchia argues that in these apparent violations of Principle C, it is not the definite R-expression itself that gets bound, but a pronoun-like element implicit in it. So, (91b) is actually analyzed as (92a). It is not clear, however, that this pronoun-like variable can be appealed to in all donkey-sentences with definite descriptions. For example, there doesn't seem to be any such extra variable present in sentences like (92b,c).

(92) Definite R-expressions and BT (continued)

- a. If a painter_i lives in a village, the village [where he_i lives] is usually pretty
- b. If a guy_i is tall, that guy_i is usually smart
- c. If a village_i is in the Swiss Alps, the village_i is usually pretty

10.3. An alternative solution and some challenges.

An alternative approach 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 they have the same shape as their antecedents, these problematic impersonals are really minimal pronouns, as in Kratzer (2006) – they are bound variables that carry only the index feature, as in (93). The index is interpreted by an assignment function, assigning a particular individual to each number. The minimal pronouns acquire the rest of their pronounced features (such as number, gender) through a local agreement chain from their antecedents.

(93) A minimal pronoun:

$[[8]]^{g,c} = g(8)$ (type e , the type of individuals)

In this way, impersonal pronouns in the consequent clauses of donkey-sentences should be no different from regular pronouns in the same position (94a), which would also start out as minimal pronouns. In both cases, the final pronounceable shape of the pronoun should be acquired via agreement with the antecedent, which could be an indefinite NP in the case of (94a), or an indefinite impersonal pronoun in (94b). When the minimal pronoun adds the features it received from the antecedent to its own index feature, the result is spelled out as a featural duplicate of the antecedent.

(94) Minimal pronouns and donkey sentences

- a. If a guy is tall he is usually smart
- b. If MAN/SI/YOU is tall usually MAN/SI/YOU is smart

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. This violates the constraints on minimal pronouns proposed in Kratzer (2006). 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.

Further research is needed to generate a way of establishing agreement chains 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 (2006) about the restrictions imposed by the construction of a local agreement chain on the distribution of bound variables.

The data in (95, 96) provides a residual puzzle in deciding between the two accounts. In certain Italian dialects, the two instances of the SI in sentences like (95) cannot be co-referential. This is easily explained under the Dynamic Binding approach to donkey sentences: the silent generic operator discloses and binds the second and third occurrences of *si*, making it impossible for them to be co-referential with the first *si*. At the same time, there is a local agreement chain between the first and second occurrence of *si*, so the two should be able to co-refer on the Minimal Pronoun approach²².

(95) Impersonals and donkeys: a final puzzle (from Chierchia, p.c.)

- a. A NY *si* pensa che se *si* é in ritardo, *si* deve telefonare a casa.

In NY SI thinks that if SI is in lateness SI should telephone to home.

‘In NY it’s thought that if you’re late, you should call home.’

- b. A NY *si* pensa che se *si* é belli, *si* é raramente anche intelligenti.

In NY SI thinks that if SI is beautiful SI is rarely also smart.

‘In NY it’s thought that if one is beautiful, one is rarely smart.’

At the same time, the first two tokens of *si* in (96) are co-referential (in fact, all three occurrences of *si* in this sentence are co-referential). This is easily explained in the Minimal Pronoun framework, since a local chain of agreement can connect the first two instances of *si* in this sentence.

22 The chain proceeds via the relative pronoun *che* which may be able to transmit phi-features; for details see Kratzer (2006).

(96) Se si pensa che si é in ritardo, si deve telefonare a casa.

If SI thinks that SI is in lateness SI should telephone to home.

‘If you think that you’re late, you should call home.’

However, it is not immediately clear how the adverb, equipped with only two disclosure operators in the Dynamic Binding framework, can bind three impersonals at once. We might ask, why should the number of disclosure operators associated with the Q-adverbs be two (one for the restrictor, and one for the scope) (97)? Otherwise, the framework incorrectly may predict that the two indefinites in sentences like (97a) may be co-referential, giving rise to readings like (97b).

(97) usually_i [A] [B] = **Most** λx_i [A] λx_i [B]

a. If a man thinks that a man is running late, he should call ahead

b. If a man thinks that he’s running late, he should call ahead

One way to derive the data in (96, 97) is by exploiting the restrictions on indexing we have already introduced. First, the Q-adverb will be permitted to have any number of disclosure operators. However, their index is restricted to that of an indefinite. Then, in (97b), the adverb will disclose the indefinite *a man* and also bind both instances of *he* which bear the same index as the indefinite. Similarly, in (96), the adverb binds all three instances of *si* since all three bear the same index.

Then, the only way for the adverb to bind both instances of *a man* in (97a) is if both instances have the same index – something ruled out by Principle C, since the first indefinite c-commands the second.

It thus seems that, while both the Dynamic Binding and the Minimal Pronoun approaches have their drawbacks, the final puzzle may nudge us closer to the former framework for deriving the interpretation of donkey-sentences with impersonal pronouns.

11. Conclusions.

There are several general consequences of this analysis for the general theory of pronouns and NP interpretations.

First, since in our indefinite analysis for *man/si* the exclusive interpretation for these items comes from a *lack of requirement* that speaker be included, rather than a result of a separate constraint, we can treat this on a par with other 3rd-person pronouns, since 3rd person result from a lack of requirement that speaker and hearer be included (Kratzer 2006).

Second, all three of the impersonals I have considered – *you*, *man*, and *si* – were shown to derive the arbitrariness of their interpretation from an indefinite variable (or a kind) in their denotation. None of these items, which exhibit both a shifting and an indexical uses, require the intervention of monster-operators to shift the context: all QVE-related shifting results from interaction of the indefinite (or kind) and Q-adverbs.

Third, the investigation into the semantics of impersonal *you* raises several important issues. The possibility of impersonal readings for *you* is created by the presence of the variable over *personas* in the denotation of the pronoun. How is this variable introduced into this denotation? That is, where do we place the difference between languages that allow impersonal uses of 2nd-person pronouns, and those that do not? One possibility is that the 2nd-person feature itself has different semantic contributions in these two types of languages. This raises the question of cross-linguistic variability in the semantics of features, making the universal claims and empirical falsifiability of general theories of pronouns, like that of Kratzer's (2006), rather weak – after all, what prevents us from assigning arbitrarily different meanings to the same feature in different languages?

This leaves the possibility that the cross-linguistic variation with respect to 2nd-person pronouns is due to the difference in featural composition: that is, languages that allow impersonal *you* have an additional feature that introduces the variable over *personas* into the denotation of a 2nd-person pronoun. This conjecture has a different drawback, namely, nothing prevents this special feature from appearing on other pronouns. Thus, we would predict that a language like English or Russian 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, to my knowledge, no languages of the second type are attested.

I leave this question of locating the source of the variable in the denotation of 2nd-person pronouns to future research.

Finally, the proposed analyses of these impersonals call for a new look at a number of issues in nominal semantics and the philosophy of language: the nature of reference *de se* and trans-world identity, the nature of 1st person reference, and the precise nature of the definite-indefinite divide in various languages.

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