

Arbitrary monsters: *you* and *one*.

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1 Introduction of the problem.

The question of the existence of (and semantic analysis for) shifting indexicals, termed *monsters* by Kaplan (1989) has been subject of much debate in the last several decades (Fillmore (1981), Anderson and Keenan (1985), Kaplan (1989), Partee (1989), Nunberg (1993), Israel and Perry (1996), Lewis (1998), Schlenker (2003, 2004), Recanati (2004), *inter alia*). Schlenker, in particular, argues for the existence of monsters, drawing examples in the nominal domain from such languages as Amharic. In this paper, I draw attention to some previously unobserved data involving arbitrary pronouns in English and Russian, arguing that they should be analysed as shifting indexicals. If my analysis is correct, this means that monsters can be found much closer to home, and that they are pervasive in the world's languages.

Very little has been said in the semantic literature about the arbitrary interpretation of 2nd-person pronouns as in (1)¹; semantics of the arbitrary pronoun *one*² (2) has also received little attention.

- (1) a. English
Nowadays, you don't get this kind of view of the countryside anymore.
- b. Russian
Takih pejzazhej teper' ne uvidish'
Such landscapes nowadays not will.see.2nd.SING
'You don't see such landscapes nowadays.'

¹Alonso-Ovalle (2002) addresses the semantics of arbitrary 2nd-person pronouns in Spanish, treating them in a unified manner with the deictic interpretation of the item. His analysis, however, differs substantially from mine; I discuss the differences below. There is also substantial pragmatic literature investigating the arbitrary interpretation of 2nd-person pronouns (Sankoff and Laberge (1979), Yule (1982), Kitagawa and Lehrer (1990), among others). Great thanks to an anonymous reviewer for the CSSP conference for pointing out this literature to me.

²I am distinguishing the generic *one* from the N'-anaphoric *one* as in (i) below; the question of a unified treatment for the generic and N'-anaphoric *one*, while extremely interesting, is outside the scope of this paper.

(i) Would you like an apple? Take one!

- (2) One should be careful with money.

In this paper, I present three sets of little-noted or previously unobserved data, and motivate a semantic analysis of the 2nd-person (singular) pronoun³, unifying some of its properties with those of the arbitrary *one*, and contrasting both pronouns with German impersonal pronoun *man* (3).

- (3) Man wäscht die Hände vor dem Essen.
MAN washes the hands before the meal.
'One washes one's hands before meals.'

The first set of data shows that Russian and English *you* and English *one*, like *man*, pattern with indefinites in contexts involving adverbial quantification. This data goes against previous claims in Safir (2004) on *one* and Kratzer (1997) on *man*, who treat these items as definites.

The second set of data presents a set of contexts in which *you* necessarily receives a deictic interpretation and arbitrary *one* is ruled out, in contrast to the German *man*. On the basis of this data, I propose a unified semantics for the arbitrary and deictic uses of *you*, treating it as a shifting indexical or monster (Kaplan (1989)); at the same time, I propose that *one* is also a special kind of indexical.

The third set of data presents another instance of variable-like behaviour of the 2nd-person pronoun. This data shows that *you* patterns with other types of variables in multiple-pronoun sentences, motivating an addition of contexts (to be defined below) to the ontology of discourse referents (Stone and Hardt (1997), Bittner (2001), inter alia).

2 1st data set: *you*, *one*, and *man* behave like indefinites

Sentences containing indefinites and quantificational adverbs (Q-adverbs) like *always*, *usually*, or *sometimes* yield the effect of quantification over the variable introduced by the indefinite (QVE) (4) (Lewis (1975)), both in the classic QVE configuration (4a, 4b) and in donkey sentences (4c)

- (4) Indefinites: QVE available: Most linguists = QVE on linguists
- a. A linguist is usually smart
 - b. Linguists are usually smart.
 - c. If a linguist is smart, he's usually proud.

³In the dialects of English in which the singular and plural forms of the 2nd-person pronoun are overtly distinguished, only the singular form can have the arbitrary interpretation. So, in South Philadelphia, the plural [yɪz] has only the deictic meaning in sentences like (i) below.

(i) Nowadays, yɪz don't get this kind of view of the countryside anymore.

In contrast, Q-adverbs fail to produce QVE in definites and demonstratives (5) ⁴

- (5) Definites: QVE not available, the only reading is ‘Now they are smart/proud, now they are not’
- a. # The linguists sitting here now are usually smart.
 - b. # He /this linguist is usually smart.
 - c. #If this linguist is smart, he’s usually proud.

The same pattern holds in Russian and German: Q-adverbs succeed in quantifying over the variable introduced by the indefinites in their scope, and fail to quantify over the denotation of definites/demonstratives.

Crucially, English and Russian arbitrary *you*, English *one*, and German *man* pattern like indefinites and unlike definites/demonstratives in producing QVE with Q-adverbs (6). This pattern was noticed for *one* by Moltmann (2003), and for Spanish 2nd-person singular pronoun by Alonso-Ovalle (2002). In (6a-i) and (6b-i), the sentences entail that, depending on the adverb, all, most, or few of the people at the time lived to be 60; similarly in sentences with *one* (6c-i) and *man* (6d-i). The (ii) examples illustrate the same point for donkey sentences⁵.

- (6) a. Russian
- i. V srednie veka, ty vsegda / obychno / redko dozhival do 60-ti.
In middle ages, you.SING always / usually / rarely lived till 60.
‘In the Middle Ages, you always/usually/rarely lived to be 60.’
 - ii. Esli imeesh’ delo s mafiej, v konce koncov tebja
If have.2nd.SING business with Mafia.INSTR, in end of.ends you.ACC
vsegda / obychno / inogda ubivajut.
always / usually / sometimes kill.3PL
‘If you deal with the Mafia, ultimately they always/usually/sometimes kill you.’
- b. English *you*
- i. In those days, you always/usually/rarely lived to be 60.
 - ii. If you deal with the Mafia, you always/usually/sometimes get killed.
- c. English *one*

⁴As Nakanishi and Romero(*in press*) note, QVE with definites is achieved with expressions like *for the most part* (i), rather than with Q-adverbs. The question of which operators succeed in achieving QVE over definites, while fascinating, is outside the scope of this paper; for my purposes, it is enough to note that Q-adverbs fail here.

(i) The students sitting over here now are for the most part smart. (*Most students...* = QVE on students)

⁵These examples are complicated by the fact that *you/one/man* are the only forms available to refer back to *you/one/man*. So, they are used for this purpose instead of regular pronouns in the consequent clause of the donkey sentences. Since these example involve variables co-varying under quantification, the co-construal of the two occurrences of the same pronoun cannot be analysed as simple coreference or mediated by extra-linguistic reasoning (as is done in Koenig and Mauner 2000 for the French impersonal pronoun *on*).

- i. In those days, one always/usually/rarely lived to be 60.
 - ii. If one deals with the Mafia, one always/usually/sometimes gets killed.
- d. German
- i. Damals lebte man immer / normalerweise / selten bis 60 Jahre.
Then lives MAN always / usually / rarely till 60 years
'In those days, one always/usually/rarely lived till 60.'
 - ii. Wenn man mit der Mafia verhandelt, wird man immer / normalerweise
If MAN with the Mafia deals will MAN always / usually
/ manchmal ermordet.
/ sometimes get.killed
'If one deals with the Mafia, one will always/usually/sometimes get killed.'

This pattern shows that these arbitrary pronouns behave like indefinites and unlike definites and demonstratives, both in the scope of quantificational adverbs and in the if-clauses of donkey sentences. Alonso-Ovalle (2002) argues against this claim for Spanish 2nd-person pronoun, citing an example in which Q-adverb *raras veces*=*few times* fails to produce QVE with the 2nd person pronoun. This example, he argues, is evidence that the pronoun does not acquire the quantificational force of the Q-adverb, but rather can only have a quasi-universal or a deictic reading, radically differing in this respect from regular indefinites. However, on the basis of examples in (6), I have to conclude that this is a property of the Spanish example (whether peculiar to the particular example or to the language), since in (6) the English and Russian 2nd-person pronouns show the full range of quantificational force acquired by the pronouns from the corresponding Q-adverbs.

In her 1997 presentation, Angelika Kratzer argues that *man* is actually definite, based on its unacceptability in there-sentences (7a), unlike the indefinites like *wer* or *jemand* (someone) (7b).

- (7) German (Kratzer (1997), examples 1-3)
- a. *Es war man gekommen.
There was MAN come.
Intended reading: 'Someone had come.'
 - b. Es war wer/jemand gekommen.
There was someone come
'Someone had come.'

The same argument is given in Safir (2004) presentation for the definiteness of *one* (8a, 8b), which contrasts with the indefinite *someone* (8c, 8d).

- (8) English
- a. *She always knew there would be one waiting in the wings

- b. *She always knew there would be one's mother waiting in the wings⁶
- c. There was someone in the garden.
- d. She always knew there would be someone's mother waiting in the wings.

However, given the entirely indefinite-like behaviour of *one* and *man* in QVE contexts, we must conclude that something else is at work in the examples (7, 8). As Prince (*to appear*) points out for the pronoun *me(n)* - the Yiddish counterpart of *man* - the pronoun is unable to appear in positions in which it receives intonational prominence or contrastive focus (Rooth (1992)) (9a). This is also true for *man* (9b) and *one* (9c).

- (9) a. Yiddish (Prince (*to appear*): example 1e)
 Emitser / #Men, zog ikh dir, iz do geven.
 Someone / MEN, tell I you, is here been.
 'Someone / #one, I'm telling you, was here.'
- b. German
 Jemand / #Man, sage ich, war hier.
 Someone / MAN, say I, was here.
 'Someone / #one, I'm telling you, was here.'
- c. English
 Someone /# One, I'm telling you, is would always be waiting in the wings.

However, the postverbal position in existential *there*-sentences is exactly the one in focus, both in the sense of being hearer-new information (Ward and Birner (1995)), and in having intonational prominence. I therefore conclude that it is the unfocusability of *one* and *man* (however explained⁷ that is responsible for ruling them out in *there*-sentences, and not their definiteness.

⁶An additional reason for the ungrammaticality of this example, discussed later in this paper, is the inability of *one* to occur in episodic sentences, together with the inaccessibility of genitive possessors to quantifiers scoping above the existential *there*. That is, as shown below, genitive possessors are unlike, e.g., prepositional phrase modifiers (i,ii). Unlike indefinites in other types of modifiers, an indefinite NP serving as the genitive possessor for the focus phrase in the existential *there*-sentence fails to be bound by Q-adverbs like *always* (iii,iv). Thus *one*, which requires such quantification, is ungrammatical in this position (8b).

(i) There is always/usually some evidence against a cheating student.

(QVE available: For all/most cheating students = QVE on students)

(ii) There is always/usually some solution to a hard problem. (QVE available)

(iii) There is always/usually a student's mother waiting in the wings.

Only non-QVE reading: Most of the time, a mother of some student is waiting.

No QVE reading: *For most students, their mother is waiting in the wings.

(iv) There is always/ usually some problem with students'/a student's homework.

Only non-QVE reading: Most of the time, some student(s) has/have a problem with their homework.

No QVE reading: *Most students have problems with their homework.

Thus, the generic sentence in (8a) is more appropriate as a potential counterexample to the indefiniteness of *one*. Special thanks to Maribel Romero for pointing out this pattern to me.

⁷I address the issue of explaining the unfocusability of *one* and *man* in other work, essentially following the account given in Prince (*to appear*)

3 2nd data set: *you* and *one* are not real indefinites.

On the basis of the data in previous section alone, we might conclude that arbitrary *you* and *one*, like *man*, are indefinites. At the same time, we can present two arguments that *you* and *one* are not real indefinites, the first concerning both of these pronouns, and the second pertaining to *you* alone. First, let us consider evidence that arbitrary *you* and *one* are not regular indefinites. In sentences lacking overt Q-adverbs or silent generic quantification, regular indefinites and *man* are interpreted as existentially quantified (10d, 10e). In contrast, arbitrary *you* and *one* are impossible in such sentences, and only the deictic interpretation of *you* is available there⁸ (10a, 10b, 10c).

- (10) a. Russian *you*:
Vchera, ty szheg dom.
Yesterday, you.SING burned.PRFTV house.
'Yesterday, you burned a house.' (*arbitrary reading)
- b. English *you*:
Yesterday, you just burned a house (*arbitrary you)
- c. English *one*:
*Yesterday, one just burned a house.
- d. English indefinites:
Yesterday, a linguist/linguists just burned a house.
- e. German *man*
Gestern, hat man ein Haus abgebrannt.
Yesterday has one a house burned
'Yesterday, someone has burned a house.'

This contrast suggests that arbitrary *you* and *one* have special quantificational requirements, and thus cannot be analysed as regular indefinites.

Arbitrary *you* presents a further argument against the indefinite analysis: the impossibility, under such analysis, of presenting a uniform semantics for the arbitrary and deictic uses of *you*. The chief theoretical challenge posed by the data in (6) and (10) is reconciling the indexical nature of the pronoun (2nd-person is usually taken to denote deixis to the addressee) with its behaviour as a bound variable in (6)⁹. A natural question at this point is, is there any relation between the deictic and the arbitrary *you*? Why not posit a separate lexical entry for the arbitrary use of *you*? The chief argument against such an ambiguity is that arbitrary *you* (singular, wherever such distinction exists for the 2nd-person) appears

⁸This has been noted for Spanish 2nd-person pronoun in Alonso-Ovalle (2002).

⁹Alonso-Ovalle (2002) presents a uniform treatment for deictic and arbitrary uses of the 2nd-person pronoun in Spanish. However, his analysis relies on the conclusion that the pronoun fails to acquire quantificational force of the Q-adverbs in QVE contexts, which clearly does not apply to the 2nd-person pronoun in English and Russian. His analysis is therefore significantly different from the one presented below, and fails to derive the data in (6).

with astounding systematicity in language after language. The arbitrary 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.

Another reason for relating the two uses of *you* is that even in its arbitrary guise, the pronoun always carries a special connection with the addressee - if not by entailing addressee's inclusion, then by invariably communicating an appeal for addressee's empathy. In this, *you* contrasts with *one* (11). In both sentences in (11), the empathy/perspective resides with *you*:

- (11) 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.

Sentences with arbitrary *you* always involve a special sort of empathy - an appeal to the addressee to place himself/herself in the situation(s) introduced. Thus, paraphrasing (6b-i), repeated below in (12a) in accordance with this intuition, we get (12b) below.

- (12) a. In those days, you usually/rarely/sometimes lived to be 60.
 b. For most/few/some x in those days, place yourself in the shoes of x, you live until 60.

A final blow to the proposal which separates the deictic and arbitrary *you* is the new set of data presented below (13). This data, discussed in detail in section 6, shows that the pattern in which deictic and arbitrary readings for *you* arise in a multiple-pronoun sentence duplicates the pattern of strict and sloppy readings in multiple-pronoun sentences with VP-ellipsis ¹⁰ (Dahl (1973)). In particular, note that in both cases, reading (iii) is missing - an inexplicable gap if the two uses of *you* arise from different lexical entries.

- (13) a. John said he saw his mother, and Bill did too.
 i. Bill said John saw John's mother.
 ii. Bill said Bill saw Bill's mother.
 iii. *Bill said John saw Bill's mother.
 iv. Bill said Bill saw John's mother.
 b. In those days, you could marry your sister.
 i. Addressee could marry addressee's sister.
 ii. One could marry one's sister.
 iii. *Addressee could marry one's sister.
 iv. One could marry addressee's sister.

¹⁰I am considering the case when the ellipsis is interpreted to be large: *Bill did too* = *Bill said he saw his mother*.

In fact, under the indefinite analysis for arbitrary *you* (and the usual analysis for deictic *you*) the absence of reading (iii) in (13b) is a complete mystery, since the two lexical entries would give rise to this reading in the same way as the indefinite and the demonstrative contribute to the meaning of (14) below.

(14) In those days, this duke could marry a queen's sister.

I conclude that neither *one* nor *you* are real indefinites, and that a tenable analysis of *you* must address the challenge of unifying its indexical nature with its variable-like behaviour in (6) and (13b).

4 Main proposal: *you* is a monster

A similar challenge was addressed by Philippe Schlenker (Schlenker (2003)) in proposing a semantics for the 1st-person pronoun (usually treated as deixis to the speaker) in Amharic, and for the present tense (a deictic to the utterance time) in Russian. There, the interpretation of these indexicals shifts in attitude reports to the holder and time of reported attitude, respectively (15), so that the indexicals appear to be bound by the attitude verbs.

- (15) a. Russian: Last month, John said "I am building a house."
 V proshlom mesjace Vanja 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.' (lit.: 'Last month John said that he is building a house.')
- b. Amharic: John says, "I am a hero."
 ḵon ḵəgna nə -ññ yil -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 situations) as quantifiers over contexts. A context is a tuple $\langle \text{agent of attitude, recipient of attitude, time, world} \rangle$; an indexical then refers to one of the coordinates of this tuple. This analysis for (15b) would be as indicated in (16), where $\langle \text{John, } x_2, t_1, w_1 \rangle$ is the context of the reported speech act.

(16) SAY $_{\langle \text{John}, x_2, t_1, w_1 \rangle c_i}$ be.hero(I(c_i), time(c_i), world(c_i))

I propose to treat *you*, both on its arbitrary and deictic use, as an indexical, always referring to the addressee coordinate of the context. Extending (Schlenker (2003)), I reanalyse quantificational adverbs (previously treated as quantifiers over situations) as quantifiers over contexts. I modify slightly Schlenker's definition of a context, replacing the world coordinate with a situation coordinate instead. Thus, the quantification appearing with arbitrary *you*

involves possible worlds, or rather, situation-slices of possible worlds as one of the coordinates of the contexts being quantified over. The new contexts introduced (and the worlds in them) are imaginary ones, in which the speaker and, via recognition of speaker's intent, the addressee pretend to place themselves into the situation described in the restrictor phrase, such as *in those days*.

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 (10b). Following Kratzer (1989, 1990, 2002), I treat propositions as properties of situations/contexts. Thus, the sentence (17a) below would be represented as in (17b) (ignoring tense); in our extension to contexts, we simply replace situation variables with variables ranging over contexts. *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 .

- (17) a. You burned a house.
 b. $\lambda c_0. \exists x. house(x) \wedge burn(you(c_0), x, s_0)$

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 (6b-i, 6b-ii). So, on the arbitrary reading of *you*, the sentence (18a) below would be represented as in (18b) (ignoring tense); again, the situation variables are simply switched to context variables in our analysis. *You* then co-varies with the context, acquiring the quantificational force of the Q-adverb; the variable s is one of the coordinates of the context c .

- (18) a. [In those days] You always/usually/sometimes loved the queen.
 b. $\lambda c_0. \forall c / Most\ c / \exists c. \lambda x. queen(x, s) \wedge love(you(c), x, s)$

Unlike indefinites or *man*, in episodic sentences like (17a) *you* fails to acquire an existential reading similar to the *sometimes* version of (18a), since there is no existential quantification over contexts that *you* could pick up.

Thus, the restriction on the distribution of arbitrary *you*, illustrated in (10b), can be formulated as the need for quantification over contexts in order for the indexical to shift.

The empathy effect, most clearly illustrated in (11), results from the nature of the context: new addressee is simply the addressee of the speech context in the shoes of some person in the newly introduced situation. Thus, a more precise representation of a sentence with arbitrary *you* (19a) should include this restriction (19b, where s_1 is the situation coordinate of c_1).

- (19) a. In those days, you always lived well.
 b. $\lambda c_0. \forall c_1. [you(c_1) = you(c_0) \wedge placed - in(you(c_0), s_1)]. In - those - days(s_1) \rightarrow live - well(you(c_1), s_1)$

I take this speech-act part of the meaning of sentences involving arbitrary *you* to be the result of a presupposition introduced by *you* itself. By accommodating this presupposition, the hearer fulfills the speech act, pretending to place himself in the required situation(s). The presupposition is filtered out in the deictic use of *you* since the hearer is already placed in the speech context.

An interesting consequence of this analysis is that quantification over contexts can scopally interact with other operators in the sentence. For instance, in the situation when (20) is uttered by one classmate to another, the most natural interpretation is one in which *most professors* scopes over the generic quantification over contexts.

(20) Most professors don't give you credit for this sort of thing.

5 Regarding *one*

From the data in (6) and (10) above, it becomes clear that *one* is licensed only in sentences involving quantification over contexts. This would be puzzling if *one* was not somehow indexical. Indeed, Moltmann (2003) claims that *one* has a special connection to the speaker, while Safir (2004) notes that interpretation of *one* is related, in a complicated but undeniable way, to the properties of addressee(s) in the context in which *one* is uttered. If uttered without further qualifications, the reference of *one* must include the hearer(s). Thus, to take Safir's example, a Martian addressing an audience of humans cannot felicitously say (21a), nor can a member of his audience felicitously answer with (21b).

(21) a. Fortunately, nowadays one is not susceptible to human disease.
 b. On the contrary, one is always susceptible to human disease!

Two types of potential counterexamples exist: those in which the inclusion of the hearer is ruled out by extra-linguistic factors, and those in which the hearer is excluded explicitly. Regarding the first type of example, note, that while *one* can be used in situations that exclude the hearer, like (22) below, such examples always leave the observer with the feeling that the speaker is talking to herself, i.e., that the excluded addressee is not the addressee at all, and the addressee coordinate of the context is identical with the speaker coordinate.

(22) Scenario: a mother is addressing only her daughter
 One raises kids, sacrifices so much for them, and then they move where one cannot even see the grandchildren!

In the second type of potential counterexample, illustrated in (23) below, acquires a deontic ('one should take a shower every day') or qualified ('one tends to take a shower every day') flavour. Thus including the hearer in the generalisation with *one* while explicitly excluding the hearer in the second clause does not result in a contradiction; that is, in (23), the hearer is actually included in the generalisation.

(23) In the States, one takes frequent showers, although you, my dear, never do.

I thus conclude that *one*, like *you*, is an indexical ($one \sim one\ of\ us\ people$), which shifts, co-varying with the context in sentences containing Q-adverbs, resulting in QVE (6c-i, 6c-ii).

One important difference between the arbitrary *you* and *one* is the absence of the appeal for empathy in the latter. Rather than stating a generalisation involving conversational

participants and simultaneously asking the addressee to mentally place him/herself into the newly introduced situation (as *you* does), *one* simply states a generalisation. This difference is most sharply felt in sentences in (11), but can be also observed in the examples in (6).

Another difference, which currently remains unexplained, is the inability of *one* to appear in sentences that lack quantification over contexts. On the current account, nothing prevents *one* from doing so, acquiring in these sentences a meaning *one of us*. I have no solution to this currently: while we can say that *one* is a dedicated logophor (i.e., an obligatorily shifting indexical), this is simply a descriptive generalisation rather than a principled explanation for its behaviour.

6 3rd data set: *you* and sloppiness

Treating arbitrary *you* as a monster not only allows us to unify it with the deictic use of *you*, but also helps account for the similarity of its behaviour in multiple-pronoun sentences to the behavior of other variables in such sentences: *de se* pronouns in dream reports, and sloppy variables in VP-ellipsis.

Since Dahl's observation that not all readings are possible in cases of VP ellipsis involving multiple pronouns, this puzzle has received much attention in the literature (Dahl (1973), Fiengo and May (1994), Fox (2000), Hardt (2003), *inter alia*). The full pattern of Dahl's puzzle is shown in (24) below. When the ellipsis in (24a, 24b) is interpreted to be large (e.g., 'Bill did too' = 'Bill said he saw his mom.'), the two potential antecedents for the sloppy pronouns *he/him/his* are John and Bill. As the judgements reported below show, one of the mixed readings for (24a) is unavailable, namely the strict-sloppy one (24a-iii).

- (24) a. John said he saw his mom, and Bill did too.
- i. Bill said that John saw John's mom.
 - ii. Bill said that Bill saw Bill's mom.
 - iii. *Bill said that John saw Bill's mom.
 - iv. Bill said that Bill saw John's mom.
- b. John said his mom saw him, and Bill did too.
- i. Bill said that John's mom saw John.
 - ii. Bill said that Bill's mom saw Bill.
 - iii. Bill said that John's mom saw Bill.
 - iv. Bill said that Bill's mom saw John.

In fact, as pointed out by Hardt (2003), the Dahl's puzzle pattern in (24) is exactly replicated by the one observed in Percus and Sauerland (2003) for *de se* pronouns in dream reports. Percus and Sauerland (2003) present the following data (25), 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 readings, but also to some mixed readings. Note that the <real-self, dream-self> reading for (25a) is unavailable, in exact parallel to the pattern in (24).

- (25) a. John dreamed he married his granddaughter.
 i. John dreamed that John married John's granddaughter.
 ii. John dreamed that he, as Bill, married Bill's granddaughter.
 iii. *John dreamed that John married his=Bill's granddaughter.
 iv. John dreamed that he, as Bill, married John's granddaughter.
 b. John dreamed his granddaughter married him.
 i. John dreamed that John's granddaughter married John.
 ii. John dreamed that his=Bill's granddaughter married him=Bill.
 iii. John dreamed that John's granddaughter married him=Bill.
 iv. John dreamed that his=Bill's granddaughter married John.

Here, I point out previously unobserved pattern of arbitrary and deictic interpretations for sentences involving several 2nd-person pronouns (a full version of the pattern mentioned in (13b) above). This pattern (26) turns out to be completely parallel to those observed in Dahl's puzzle and multiple-pronoun dream reports.

- (26) a. In those days, you could marry your cousin.
 i. Addressee could marry addressee's cousin.
 ii. One could marry one's cousin.¹¹
 iii. *Addressee could marry one's cousin.
 iv. One could marry addressee's cousin.
 b. In those days, your cousin could marry you.
 i. Addressee's cousin could marry addressee.
 ii. One's cousin could marry one.
 iii. Addressee's cousin could marry one.
 iv. One's cousin could marry addressee.

Given that, for Schlenker (2003), *de se* pronouns are just a subclass of monsters, the similar behaviour of the two should not be surprising. For the purposes of this paper, the exact analysis for *de se* pronouns is not important, as long as the same mechanism can be proposed for the three identical patterns above. To derive the binding pattern in Dahl's puzzle and *de se* pronouns in dream reports, Hardt (2003) uses a Centering-inspired dynamic-semantic mechanism for sloppiness (shifting variables), together with syntactic QR-like movement to derive mixed (non-incestuous) readings. The shifting variable (whether sloppy variable in VP-ellipsis, or a *de se* pronoun) is sensitive to salience, switching its reference, e.g. from real-self to dream-self, or from John to Bill, when the corresponding antecedent becomes more salient. The reference of all pronouns is thus fixed for the duration

¹¹I loosely paraphrase the arbitrary *you* as *one* here for convenience. This should not be taken as a statement that the import of these two arbitrary pronouns is the same. Rather, their meaning are sufficiently close for the purposes of the paraphrase, to distinguish this from the deictic use of *you*.

of the clause, deriving unmixed readings ([i] and [ii] readings for the sentences in (25) and (24)).

The mixed readings are derived when the most salient antecedents shifts (e.g., from John in the first clause to Bill in the second clause in (24), or from real-self to dream-self following the verb *dream* in (25)). To derive the mixed readings, Hardt (2003) allows expressions that denote discourse referents (Kamp and Reyle (1993)) to move outside the clause, and thus escape the influence of the new salient antecedent. By moving a constituent that contains a salience-sensitive pronoun, the reference of that constituent is fixed (27), and consequently the reference of the pronoun it contains is fixed as well.

- (27) John [his mother]₁ [said t₁ saw him], and Bill did too. → John [his mother]₁ [said t₁ saw him], and Bill [said t₁=John's mother saw him=Bill].

The readings in (25a-iii) and (24a-iii) are unavailable, since the pronoun *he*, if we attempt to move it out of the clause, leaves behind a salience-sensitive trace, and so the reference of the trace will still shift to the new salient antecedent (this is illustrated in (28a) where the indexed representation is given after the attempted movement. Subscript * indicates sensitivity to salience, resulting in co-reference with the closest antecedent marked with superscript *. The crucial trace is in **bold**). Unlike the other mixed readings, *he* in this case is not a part of a larger constituent that can be moved out of the clause, fixing the reference of the pronoun (27, 28b).

- (28) a. UNAVAILABLE: Bill said John saw Bill's mother.
 John^{1*} [he_{*}] [said t_{*} saw [his_{*} mother]²]³, and Bill^{4*} did₃ too. (said t_{*} saw [his_{*} mother]₂)
 b. OK: Bill said Bill's mother saw John.
 John^{1*} [saw him_{*}]⁵ [said [his_{*} mother]² VP₅]³, and Bill^{4*} did₃ too. (said [his_{*} mother]₂ **VP**₅)

Extending this analysis directly to account for (26) presents a challenge, since *you* is a function of context, pointing to the addressee coordinate in it, and is not a salience-sensitive variable.

We can circumvent this problem while preserving the spirit of Hardt's analysis by including contexts (tuples as above) in our ontology of discourse referents (antecedents for salience-sensitive variables). *You* is then a function of a salience-sensitive context variable c_{*}, as is indicated in (29), the indexed representation for (26a-ii). It is that context-variable and not *you* that shifts from the speech-context antecedent to quantified-context one. Thus, all the sentences in (24), (25), and (26) will involve a salience-sensitive variable, and two potential antecedents for it, resulting in the same pattern of strict and sloppy (shifted) readings.

- (29) *TOP-CONTEXT** In those days^{*NEWCONTEXT**} you(c_{*}) could marry your(c_{*}) cousin.

7 Conclusion

In this paper, I have presented evidence that shifting indexicals (monsters) are to be found in English and Russian, among other languages. In particular, I have argued that the 2nd-person (singular) pronoun and the English arbitrary pronoun *one* are monsters. The behaviour of these pronouns in QVE configurations (6), together with unavailability of arbitrary pronouns in sentences lacking quantification over contexts (10) served as the initial evidence for their monsterhood. In addition, the pattern of deictic and arbitrary readings that *you* exhibited in multiple-pronoun sentences (13b, 26) established that a unified semantics is necessary for these uses of *you*. The analysis should be capable of deriving the correct pattern of readings in the same way that they are derived for the multiple-pronoun pattern with VP-ellipsis and *de se* dream reports.

I offer a semantic analysis accounting for this data, extending the idea of Schlenker (2003). In particular, reanalysing Q-adverbs as quantifiers over contexts allows *you* and *one* (analysed as functions of context) to shift in the presence of Q-adverbs. A special presupposition introduced by the 2nd-person pronoun accounts for the empathy effect, absent with *one* (11).

A closer look at the multiple-pronoun data provides us a better understanding of the nature of contexts and context-shifts. Contexts, defined following Schlenker (2003) as tuples $\langle \text{agent, addressee, time, world} \rangle$, are added to our ontology of discourse referents, following individuals, times, worlds and possibilities argued for in Stone and Hardt (1997) and Bittner (2001). Discourse referents can vary in salience; salience-sensitive variables (over individuals, times, or contexts) change their reference to the most salience antecedent. Context-shifts, in this framework, are governed by the same mechanism as shifts in other variables, whether sloppy variables in VP-ellipsis, or *de se* pronouns in dream reports.

While many gaps in our knowledge of arbitrary pronouns and of contexts remain, this paper is a step towards a clearer understanding of the semantic issues involved.

References

- Alonso-Ovalle, Luis. 2002. Arbitrary pronouns are not that indefinite. In *Romance Languages and Linguistic Theory 2000*, ed. Claire Beyssade, Reineke Bok-Bennema, Frank Drijkoningen, and Paola Monachesi, 1–15. Amsterdam: John Benjamins.
- Anderson, S., and Edward Keenan. 1985. Deixis. In *Language typology and syntactic description, v.3 : Grammatical categories in the lexicon*, ed. M. Shopen, 259–308. Cambridge: Cambridge University Press.
- Bittner, Maria. 2001. Topical referents for individuals and possibilities. In *Proceedings from SALT 11*.
- Dahl, Osten. 1973. On so-called ‘sloppy identity’. In *Gothenburg papers in theoretical linguistics 11*. Sweden: University of Gothenburg.
- Fiengo, Robert, and Robert May. 1994. *Indices and identity*. Cambridge, MA: MIT Press.

- Fillmore, C. 1981. Pragmatics and the description of discourse. In *Radical pragmatics*, ed. Peter Cole, 143–166. New York: Academic Press.
- Fox, Danny. 2000. *Economy and semantic interpretation*. Cambridge, MA: MIT Press.
- Hardt, Daniel. 2003. Sloppy identity, binding, and centering. In *Proceedings of SALT 13*. Seattle, Washington.
- Israel, David, and John Perry. 1996. Where monsters dwell. In *Logic, language and computation*, ed. Jerry Seligman and Dag Westerstål, volume 1, 303–316. Stanford, CA: CSLI.
- Kamp, Hans, and Uwe Reyle. 1993. *From discourse to logic. introduction to model theoretic semantics of natural language, formal logic, and discourse representation theory*. Dordrecht: Kluwer.
- Kaplan, David. 1989. Demonstratives. In *Themes from Kaplan*, ed. J. Almog, J. Perry, and H. Wettstein, 481–563. Oxford: Oxford University Press.
- Kitagawa, Chisato, and Adrienne Lehrer. 1990. Impersonal uses of personal pronouns. *Journal of pragmatics* 14:739–759.
- Kratzer, Angelika. 1989. An investigation of the lumps of thought. *Linguistics and Philosophy* 12:607–653.
- Kratzer, Angelika. 1990. How specific is a fact? In *Proceedings of the 1990 Conference on Theories of Partial Information*. Center for Cognitive Science and College of Liberal Arts at the University of Texas at Austin.
- Kratzer, Angelika. 1997. German impersonal pronouns and logophoricity. In *Sinn und Bedeutung II*. Berlin, Germany.
- Kratzer, Angelika. 2002. Facts: particulars or information units? *Linguistics and Philosophy* 25:655–670.
- Lewis, David. 1975. Adverbs of quantification. In *Formal semantics of natural language*, ed. Edward Keenan, 3–15. Cambridge: Cambridge University Press.
- Lewis, David. 1998. Index, context, and content. In *Papers in philosophical logic*, ed. David Lewis, 21–44. Cambridge: Cambridge University Press.
- Moltmann, Frederike. 2003. Generic *one* and the first person. University of Sterling.
- Nakanishi, Kimiko, and Maribel Romero. 2004. Two constructions with *most* and their semantic properties. In *Proceedings of NELS 34*. SUNY Stony Brook, NY: GLSA Publications. *in press*.
- Nunberg, Geoffrey. 1993. Indexicality and deixis. *Linguistics and Philosophy* 16.

- Partee, Barbara. 1989. Binding implicit variables in quantified contexts. In *Chicago Linguistics Society 25*, 342–365.
- Percus, Orin, and Uli Sauerland. 2003. The attitude binding generalization. In *Sinn und Bedeutung VII*.
- Prince, Ellen. 2005. Impersonal pronouns in French and Yiddish: semantic reference vs. discourse reference. In *Drawing the boundaries of meaning: neo-Gricean studies in pragmatics and semantics in honor of Laurence R. Horn*, ed. Betty Birner and Gregory Ward. Philadelphia/Amsterdam: John Benjamins. *to appear*.
- Recanati, Francois. 2004. Indexicality and context-shift. Harvard-MIT-UConn Indexicality Workshop. Harvard University, Cambridge, MA.
- Rooth, Mats. 1992. A theory of focus interpretation. *Natural Language Semantics* 1:75–116.
- Safir, Kenneth. 2004. What does *one* mean when one says it? Harvard-MIT-UConn Indexicality Workshop. Harvard University, Cambridge, MA.
- Sankoff, Gillian, and Suzanne Laberge. 1979. Anything you can do. *Syntax and semantics* 12.
- Schlenker, Philippe. 2003. A plea for monsters. *Linguistics and Philosophy* 26:29–120.
- Schlenker, Philippe. 2004. Context of thought and context of utterance: A note on free indirect discourse and the historical present. *Mind and Language* 19:279–304.
- Stone, Mathew, and Daniel Hardt. 1997. Dynamic discourse referents for tense and modals. In *Second International Workshop on Computational Semantics*, ed. H.Bunt, R.Muskens, and G.Rentier, 287–299. Tilburg, the Netherlands.
- Ward, Gregory, and Betty Birner. 1995. Definiteness and the English existential. *Language* 71:722–742.
- Yule, George. 1982. Interpreting anaphora without identifying reference. *Journal of semantics* 1:315–322.