

CONTEXT SHIFTING IN QUESTIONS AND ELSEWHERE*

Eric McCready,
Department of English, Aoyama Gakuin University

mccready@cl.aoyama.ac.jp

Abstract

It has been shown that context shifting takes place within propositional attitudes. This paper argues that there are other environments where context shift takes place, specifically in questions and in the scope of modal and evidential operators. It is argued that the shift that takes place is a shift in the judge, the individual who determines truth and falsity (of non-objective content). The shift is analyzed in terms of monstrous operators.

1 Introduction

Kaplan (1989) speculated that natural language was ‘monster-free;’ that it lacks operators that manipulate contexts, understood in the Kaplanian way as tuples of indices relating to the agent of the utterance, the time of utterance, and so forth. Schlenker (2003) showed convincingly that there are monsters after all. However, both Schlenker and Kaplan mostly consider attitude contexts. This means that, while we can be sure that there are monsters lurking in the attitudes, it is not clear where else they may be found.

The present paper aims to provide at least a partial answer to this question. I will show that there are previously unnoticed parallels between several groups of phenomena. In particular, I will be concerned with the interpretation of certain indexicals, predicates of personal taste, and what are known as ‘experiencer predicates’ in Japanese. As we will see, these diverse phenomena exhibit similar behavior in a range of environments. After discussing the facts, I show that they can be analyzed by assuming the presence of monsters in certain environments. The remainder of the paper is devoted to an exploration of the implications of the analysis and to a discussion of possible problems it faces, as well as directions it can be pushed in for the future.

2 Questions

This section will examine the three phenomena mentioned above: predicates of personal taste, Japanese ‘experiencer predicates,’ and certain kinds of indexicals, focusing on three instances in Japanese. Each shows certain restrictions in declarative sentences that are altered, or cease to apply, in questions. I discuss each case in turn.

2.1 Predicates of Personal Taste

Predicates of personal taste describe the speaker’s tastes in simple sentences.

- (1) Walnuts are tasty.
⇒ Walnuts are tasty, according to me.

*I would like to thank the audience at Sinn und Bedeutung 11 for questions and discussion, especially Philippe Schlenker, Tamina Stephenson, and Malte Zimmermann.

It might be worth noting that the paraphrase of (1) above differs from that given by Lasersohn (2005), who paraphrases it as ‘Walnuts are tasty for me.’ Lasersohn’s paraphrase suggests that what is at issue is only the tastes of the speaker; (1) would then not have anything to say about the speaker’s assumptions about what his audience might find tasty. This seems too weak, so I paraphrase the sentence in a way that reflects this (and arguably comes closer to the semantics Lasersohn actually proposes for these sentences, which will be discussed in the next section).¹

Interestingly, questions that ask about personal tastes are not concerned with the tastes of the speaker, except in special cases. Instead, they ask about the tastes of the hearer. We seem therefore to get a kind of ‘perspective shift’ in question contexts (as noted by eg. Mitchell 1986, Lasersohn 2005).

- (2) Are walnuts tasty?
 ⇒ Are walnuts tasty for you?

One may wonder: doesn’t this question really ask if walnuts are ‘tasty for us’ or ‘tasty for people like us?’ I think that it does not. It is a genuine question about the hearer’s opinions on the tastiness of walnuts. It seems that the speaker is asking the hearer for her judgement of the tastiness of walnuts on the assumption that the hearer’s tastes will correspond to her own; this is the source of the inclusive plural interpretation. It is also worth noting that some speakers appear to allow interpretations of predicates of personal taste on which they report the judgement of some salient individual other than the speaker in declaratives: thus (1) might mean something like ‘Walnuts are tasty, according to Nutsy the squirrel.’ I personally find such interpretations very difficult to get. I will return to this dialect difference later in the paper.

Note though that the question version can still be asking about the speaker’s tastes in the right context, ie. one in which the speaker has no privileged access to his own tastes. Here is a scenario.

- (3) Scenario: I am the prisoner of a mad scientist. The scientist has rewired my cortex so that I have no access to my own sensations: instead they are displayed in a readout on a computer terminal. I am eating walnuts and stop; the scientist tells me I should keep on eating. I ask her: (2).

Here it is very natural for me to ask the question about my own tastes—after all, the scientist knows about my sensations and I do not. Thus she knows *what is tasty for me*, better than I do myself. In contexts like this one it is easy to get a speaker-oriented interpretation. We will see that the same holds for the other two phenomena to be discussed as well.

2.2 Experiencer Predicates

Certain Japanese predicates are infelicitous² when used in simple sentences with subjects that are not 1st-person (Kuno 1973, Kuroda 1965).³

- (4) watasi/*anata/*kare-wa samui desu
 I/you/he-TOP cold COP
 ‘I’m/You’re/He’s cold.’

¹Thanks to Carla Umbach for asking me about this point.

²Or possibly just ungrammatical. Various opinions on this issue can be found in the literature.

³Similar phenomena can be found in Korean; the analysis to be presented should apply to them as well.

Predicates like this one are called ‘experiencer predicates’ in the literature because they involve directly experienced emotions and sensations: *samui* ‘cold’, *sabisii* ‘lonely’, *atui* ‘hot’, etc.

Suggestively, experiencer predicates like these are fine with second person subjects when they appear in questions, though third person subjects are still quite bad.

- (5) ?*watasi/anata/*kare-wa samui desu ka?*
I/you/he-TOP cold COP Q
‘Am/are/is I/you/he cold?’

First person subjects are a little weird in examples involving questions like that above just because of the nature of the question: it is odd to ask someone else about one’s own physical sensations. Just as in the case of predicates of personal taste, though, it is possible given the right context.

- (6) Scenario: I am the prisoner of a mad scientist. The scientist has rewired my cortex so that I have no access to my own sensations: instead they are displayed in a readout on a computer terminal. The scientist is looking at the terminal and tells me to put on a coat. I ask him: (5).

Again, then, the first person interpretation is available in questions when it does not conflict with contextual information or world knowledge. Plausibility issues arise quite quickly with scenarios like this, obviously, but they are possible.

2.3 Japanese and English Indexicals

It is widely assumed, again following Kaplan, that indexicals are semantically invariant in the sense that they always pick their referents directly from the context. This claim has recently been disputed by several, including Schlenker (2003) and Hunter and Asher (2005), based on evidence from Amharic first person indexicals, English temporal and spatial adverbials, and the adjective *actual*. Additional support for this kind of generalization is forthcoming from the behavior of certain indexicals in Japanese which allow a shifted interpretation in certain contexts. These indexicals are *boku* and *watasi*. Both seem to be first person indexicals, at least at first glance, though I will argue for a different conclusion below; *boku* is ordinarily used by males and *watasi* by either females or males in polite speech. All the examples I make use of will involve *boku*, as there doesn’t seem to be any substantial difference in semantic behavior between *boku* and *watasi*.

- (7) *boku-wa horensoo-ga kirai desu*
I-TOP spinach-NOM dislike COP
‘I don’t like spinach.’

The above example simply means that the speaker does not like spinach, as would be expected on a Kaplanian account.

Interestingly, but perhaps at this point unsurprisingly, when put in questions, these indexicals can shift their interpretation to mean ‘you’ rather than ‘I’. This reading is largely restricted to contexts in which one addresses young children, for reasons that are not at all clear but are plausibly sociolinguistic in nature. By using a first person pronoun with second person interpretation we ‘put ourselves in the place’ of the hearer. This is not something one should

do to someone socially superior—it is presumptuous to assume that we know someone else’s mind; but children seem to be acceptable ‘targets.’ Here the indexicals often take the diminutive suffix *-chan*.

- (8) boku-wa horensoo-ga kirai na n?
I-TOP spinach-NOM dislike COP Q
‘Don’t *you* like spinach?’

Note that we also find something similar with English *we*. The sentence (9) is difficult to interpret as anything other than first person plural in a null context (though see section 5 for some other possibilities), but in (10) the speaker clearly isn’t asking about his own preferences: the indexical here is very naturally interpreted as a plain second person (with overtones of condescension, just as in the Japanese case).

- (9) We don’t like our spinach.
(10) Don’t we like our spinach?

Other indexicals also behave the same way. The well-known ‘long-distance reflexive’ *zibun* has an indexical use in Japanese, specifically as one that refers to the speaker.

- (11) zibun-wa horensoo-ga kirai ya
ZIBUN-TOP spinach-NOM dislike COP
‘I don’t like spinach.’ (Kansai dialect)

In some dialects *zibun* can also refer to the hearer, ie. acts like a second person indexical. These dialects include those of Kyoto, Osaka, and points farther west.⁴ Unsurprisingly, however, the second person use is not totally free: usually it shows up in questions (and in certain other environments discussed later in the paper).

- (12) zibun-wa horensoo kirai-nan?
ZIBUN-TOP spinach dislike-Cop.Q
‘Don’t *you* like spinach?’ (Kansai)

Once again, we find that the shift from first to second person readings found in questions can be eliminated in the right context. From what we’ve seen it will already be clear what sort of context this is: one in which the hearer may have information about the speaker that the speaker himself lacks. Here is a simple example.

- (13) a. Scenario: A and B went out drinking last night and B blacked out.
b. A: And then we went to the next bar.
c. B: E!?! zibun-mo itta n?
what?! ZIBUN-also went Q
‘What!?! Did I go too?’

It should be noted that neither the indexicals nor *zibun* have *only* first person interpretations in non-interrogative sentences. Tomioka (2006) in fact argues that the distribution of these interpretations is quite free. I return to this point at the end of the paper.

⁴Standard (Tokyo) Japanese also has some similar uses, but they are more restricted and may have a different source. I will not consider them in the present paper.

2.4 Summary

To sum up, this section has considered three phenomena: predicates of personal taste, Japanese experiencer predicates, and certain Japanese indexicals. Each of them was shown to have speaker-related readings in declarative sentences. Each was shown also to lose its speaker-related reading in questions and replace it with a hearer-oriented one, although we saw that this could be overridden in some contexts. The natural question to ask at this point, of course, is: what is the right analysis of these facts? I will now make a proposal in this regard.

3 Analysis 1: Questions and Monsters

The place I'll start is with the predicates of personal taste. I'll first review a recent proposal on the semantics of such predicates by Lasnik (2005). I'll then show that by making use of (a variant of) it we open the way to a simple and straightforward way of analyzing the 'person shift' with monstrous operators (Schlenker 2003). The resulting analysis is critiqued and some modifications are introduced that (I believe) make things nicer. I then show how the theory thus obtained applies to the other two cases: experiencer predicates and indexicals.

3.1 Lasnik on Personal Taste

The basic motivation for Lasnik's approach is that a tension exists between two characteristics that predicates of personal taste have. The first is that the truth of sentences containing them depends on the speaker's tastes.

(14) Roller coasters are fun. (Lasnik 2005)

Whether we take this sentence to be truly uttered or not depends on who's saying it: if it's Jimmy, who enjoys roller coasters, presumably it's uttered truly, but if it's Mary, who hates them, it's not. Therefore the following dialogue is possible without either speaker making an error.

- (15) a. J: Roller coasters are fun.
b. M: Roller coasters aren't fun at all.

In the dialogue above, both speakers can be correct, in the sense that neither is saying anything false, thus wrong.

This is strange given the behavior of other, similar, dialogues that lack predicates of personal taste: what might be characterized as objective discourses about matters of fact.

- (16) a. J: The cat is on the mat.
b. M: The cat isn't on the mat at all.

Someone, either Jimmy or Mary, has made a mistake here. But this needn't be the case in the roller coaster dialogue. We can call this *disagreement without error*. Still though it *is* a disagreement. The problem is clear: how can there be a sentence ϕ which is true when uttered by Jimmy and false when uttered by Mary, so that neither Jimmy or Mary is wrong about its content, and yet when the two utterances are juxtaposed they contradict each other? This is the dilemma that Lasnik addresses.

Lasersohn explores a number of different approaches to these facts and shows that it's not easy to get both disagreement and lack of error. For instance, consider an approach which would augment the logical form (17a) with a hidden argument place, as in (17b), which thus reads 'roller coasters are fun for Jimmy'.

- (17) a. $fun(roller_coasters)$
 b. $fun(roller_coasters, j)$

Now we get the speaker dependence right, assuming that the second argument of fun is always the speaker, for both $fun(roller_coasters, j)$ and $\neg fun(roller_coasters, m)$ can be simultaneously true. But there is no disagreement anymore: the two propositions are completely different. Lasersohn solves these problems by making predicates of personal taste dependent on a contextual parameter for their truth value, not for their content, as (ordinary) indexicals are. The content of I depends on the speaker of the sentence it appears in—it is not fixed. But the content of *Roller coasters are fun* is always $fun(roller_coasters)$ on Lasersohn's theory. However, the truth-value of this formula depends on what Lasersohn calls the *judge* parameter, the person who decides on matters of taste. The following fact holds on his analysis:

- $\llbracket fun(roller_coasters) \rrbracket^j \neq \llbracket fun(roller_coasters) \rrbracket^m$.

This is the background. Now to the problem.

3.2 Proposal

The core of the proposal is a new kind of monster. Monsters, as already mentioned above, are operators that manipulate contextual parameters; Kaplan (1989) believed that none could exist, but Schlenker (2003) showed that there do seem to be monsters that alter at least the 1P and temporal parameters of a context. Both authors (and most others who have considered the topic) restricted their attention to attitude contexts and free indirect discourse. I will show that allowing monsters to appear in questions accounts for all the phenomena I have discussed so far.

Here is the specific proposal. Assume that Kaplanian contexts are tuples of the following form:

$$C = \langle a, i, t, l, j \rangle,$$

where a is the agent of the context, i the interlocutor, t the time of utterance, l the location of utterance, and j the judge (as in Lasersohn's discussion above). We won't have occasion to worry about the time or location parameters here. I include them for completeness only.

Now assume, roughly following Lasersohn, that the lexical entry and semantics for a predicate of personal taste looks like the following. Here 5 is the projection function that picks out the fifth element of the context tuple, i.e. the judge.

(18) $\llbracket tasty \rrbracket = \lambda x.tasty(x)$

(19) $\llbracket tasty(a) \rrbracket^C = 1$ iff a is tasty for $5(C)$

This looks fine. It will give the results of Lasersohn's semantics. But one thing is left out here. Who is $5(C)$ anyway; who is the judge? I assume that in unembedded contexts it is the utterer of the sentence. This is stronger than the assumptions made by Lasersohn himself or

Stephenson (2005), who allow the judge to be any salient individual, as mentioned above. On the assumption that the natural reading is a speaker-oriented one, we may simply assume that the judge parameter is set equal to the agent parameter: $1(C) = 5(C)$. I return to the more permissive dialect at the end of the paper.

Assume now that questions contain monstrous operators *that apply to the judge parameter*, specifically, something like this.

(20) $[[Q]]([[\phi]]^C) = ? [[\phi]]^{(a_c, \dots, i_c)}$, where ? is the question operator and i_c is the addressee in the unembedded context.

According to this formula, the question operator serves to a) change the sentence from a statement ϕ into a question $? \phi$ (I will not take a position here about what the semantics of questions should look like), and b) to set the judge parameter to the interlocutor. What effect will this have? Consider the following sentence.

(21) a. Walnuts are tasty.
 b. $[[tasty(walnuts)]]^C = 1$ iff walnuts are tasty for $5(C)$

According to our semantics, the sentence *Walnuts are tasty* is true iff the judge of the context finds walnuts tasty; and since we've set the judge to the agent, this means that walnuts must be tasty for the speaker in order for the sentence to be true.

Now consider the following sentence. Here $C^{[5(C) \rightarrow i_c]}$ indicates that $5(C)$ is substituted for by i_c in the context C .

(22) a. Are walnuts tasty?
 b. $[[Q(tasty(walnuts))]]^C = ?([[tasty(walnuts)]]^{C^{[5(C) \rightarrow i_c]}})$

This now is a question that asks whether walnuts are tasty for the judge, who has been reset to the interlocutor. It is thus a question about the hearer's tastes, not the speaker's, which seems in general to be correct. We have now accounted for the availability of hearer-oriented readings in questions.

3.3 Questions for the Analysis

Several questions immediately arise with the present proposal. Here are two.

Q1: Is this semantics merely a technical move or does it have any deeper motivation? Answer: It is a technical move, but one that seems sensible pragmatically. We ask questions not about ourselves, but about our interlocutors, at least in general. So it makes some sense that there would be an operator that shifts things over directly. But this is obviously pragmatic, since as we've seen it is possible to ask questions about ourselves in the right contexts. This raises the second question.

Q2: If this operator is semantic, how can we ever use questions to ask about ourselves (when predicates of personal taste, or others of the phenomena discussed above, are involved)? The answer must be this: use of this monstrous question is pragmatically determined. We ask monstrous questions most of the time, but on the rare occasions when someone else has privileged access to our mental states, we must ask non-monstrous ones. Sometimes there is indeed a use for questions like these.

There are several ways to think about this.

1. There are two distinct question operators, one monstrous and one not.
2. The monstrous operator is in fact separate from the actual question operator, but simply appears with it in general.

In either case we would have to say that which question type is selected depends on pragmatics. Still, the two possibilities are not equal. Option 1 is not appealing in various respects, the biggest being that it makes questions *ambiguous* in a way that seems unnecessary. We also might guess that the two question operators might be realized differently in some language, which, as far as I know, isn't the case.

Option 2 is perhaps nicer in that it allows questions themselves to be semantic objects of a single sort, but enriched with an additional operator when pragmatics allows it. I'll therefore modify the proposal slightly to bring it in line with option 2. This can be done quite simply by taking the monster out of the question, so to speak, and making it into a separate operator.

$$(23) \quad Sh(\llbracket \phi \rrbracket^{(a_c, \dots, j)}) = \llbracket \phi \rrbracket^{(a_c, \dots, i_c)}, \text{ where } i_c \text{ is the addressee in the unembedded context.}$$

This operator can then appear with questions when it makes sense for it to do so.

On this revised analysis, questions receive the following representation:

$$(24) \quad \begin{array}{l} \text{a. Are walnuts tasty?} \\ \text{b. } \llbracket Q(Sh(tasty(walnuts))) \rrbracket^C = \\ \quad ? \llbracket tasty(walnuts) \rrbracket^{C[5(C) \rightarrow i_c]} \end{array}$$

The effect is the same as before, but the overall picture is more sensible.

3.4 Application: Experiencer Predicates

The proposal outlined above will work to derive the shift found in Japanese experiencer predicates as well. Recall that such predicates are felicitous only when applied to first person subjects in unmodified declarative sentences, but can apply to second person subjects in questions, as well as (in the right contextd) first person ones.

The first obvious question is why only first person subjects are allowed in the declarative case. Recall that the standard reason given for the restriction is that one has privileged access to his own sensations and emotions, so it's impossible for others to make direct assertions about them. One way to think about this reasoning is as follows: just as with predicates of personal taste, the content of experiencer predicates is dependent on the evaluator of the predicate. This suggests that the subject of the predicate must be the *judge* of the context. With this simple assumption, the facts fall out in precisely the same way as above, as we will now see.

I assume therefore that experiencer predicates *presuppose* that their subject be the judge of the context.

$$(25) \quad \text{Schema for experiencer predicates } P: \\ \lambda x_e \{5(C) = x\}.P(x), \text{ where } 5(C) \text{ is as usual the judge of } C.$$

$$(26) \quad \llbracket samui \rrbracket^C = \lambda x_e \{5(C) = x\}.cold(x)$$

I make this a presupposition because it projects out from negation, modals, conditionals and so forth in the usual way.⁵

How will this work to derive the facts in question? Let us look at some examples. Consider the following sentence, in which an experiencer predicate is applied to a third person subject.

- (27) a. * Taro-ga samui
 Taro-NOM cold
 ‘Taro is cold.’
 b. $[[samui]]^C([[Taro]]^C)$
 c. $\Rightarrow \lambda x_e \{5(C) = x\} . [cold(x)](Taro)$

Here, the computation will fail: by assumption, the judge of the context ($= 5(C)$) is the speaker, not Taro. The next case is different: here the subject is a first person indexical. I omit computation of the indexical content.

- (28) a. Watasi-ga samui
 I-NOM cold
 ‘I’m cold.’
 b. $[[samui]]^C([[I]]^C)$
 c. $\Rightarrow \lambda x_e \{5(C) = x\} . [cold(x)](i)$

Again, by assumption $5(C) = 1(C)$; thus the presupposition is satisfied, and the sentence is fine. So it is clear that the proposal so far can derive the restrictions on possible subjects in declaratives.

It will be clear what happens when the *Sh* operator proposed above applies. Recall that the function of *Sh* is to shift the judge parameter from $1(C)$ to $2(C)$, from the agent of the context to the interlocutor. If it applies, then, the presupposition of the experiencer predicates will state that the subject must be second person ($= 2(C)$). This predicts that second person subjects will be fine, as desired. The computation is as follows:

- (29) a. Anta-ga samui no?
 You-NOM cold Q
 ‘Are you cold?’
 b. $[[Q]](Sh([[samui]]^C([[anta]]^C))$
 c. $\Rightarrow ?(Sh(\lambda x_e \{5(C) = x\} . [cold(x)])(you))$
 d. $\Rightarrow ?(\lambda x_e \{5(C^{[5(C) \rightarrow i_c]} = x\} . [cold(x)](you))$

Note we have to be a little careful about order of application here: the *Sh* operator must apply to the predicate before it combines with the subject, for otherwise the presupposition will not be satisfied. This is not very clean, but I am not sure if it constitutes a real problem or not.

Of course, just as before, it’s possible for the *Sh* operator not to apply, given the right context. In this situation, first person subjects will also be fine in questions. Again, this is exactly the same as the situation with predicates of personal taste.

⁵It does not seem possible to bind this presupposition, however, suggesting that it might in fact be a conventional implicature in the sense of Potts (2005). Such an analysis also seems right for other possibly similar phenomena like the gender of pronouns or the content of familiar and formal indexicals, which are also standardly treated as presuppositional. For simplicity, however, I will use a presuppositional analysis here.

3.5 Application: Indexicals

Now to the special Japanese indexicals. The crucial question is exactly what kind of indexical these things are. In previous work I claimed they are first person pronouns and so, as usual with such indexicals, refer directly to the agent of the context (McCready 2006a, to appear). But this doesn't seem to be right. The indexicals under discussion allow the shift discussed, while other (clearly and unambiguously) first person indexicals like *ore* or *atasi* do not. This indicates that our indexicals are best analyzed as something else.

What might they be? Consider their behavior: basically they are first person indexicals, but in certain contexts they are not; so far, we have seen that they are (can be) second person in questions. Now I already have claimed that there is a contextually determined individual that makes exactly the same shift: the judge. The behavior of our special indexicals thus suggests that they are indexical on the *judge parameter* rather than the agent parameter. Thus I propose the following (using the blanket term *judge indexical*):

$$(30) \quad \llbracket \text{Judge_Indexical} \rrbracket^C = 5(C) = \text{judge of context } C$$

It will be clear what predictions this makes: judge indexicals will refer to the contextual agent, the speaker, in simple declaratives, and (optionally) to the interlocutor in questions.

- (31) a. zibun-wa horensoo-ga kirai ya
 ZIBUN-TOP spinach-NOM dislike COP
 'I don't like spinach.' (Kansai dialect)
- b. $\llbracket \text{kirai} \rrbracket^C(\llbracket \text{horensoo} \rrbracket^C)(\llbracket \text{zibun} \rrbracket^C)$
- c. $\Rightarrow \text{dislike}(\text{spinach})(i)$
- (32) a. zibun-wa horensoo kirai-nan?
 ZIBUN-TOP spinach dislike-Cop.Q
 'Don't you like spinach?'
- b. $\llbracket Q \rrbracket(\text{Sh}(\llbracket \text{kirai} \rrbracket^C(\llbracket \text{horensoo} \rrbracket^C)(\llbracket \text{zibun} \rrbracket^C)))$
- c. $\Rightarrow ?(\lambda x.\lambda y. [\text{dislike}(x)(y)](\text{spinach})(\llbracket \text{zibun} \rrbracket^{C[5(C) \rightarrow ic]}))$
- d. $\Rightarrow \text{dislike}(\text{spinach})(\text{you})$

One final point. It has been argued that there is a constraint that forces indexicals to shift together: i.e. they must all be bound by the same monstrous operator (Anand and Nevins, 2004). If this is so, and if questions actually contain a monster on judges, then we would expect all judges in the scope of the operator to be the same.⁶ There should never be a situation in which e.g. a judge indexical denotes one individual and truth of a predicate of personal taste applied to an object depends on the judgement of another. This prediction is borne out.

(33) Is our soup tasty?

This sentence can either mean that our (first person plural) soup is tasty for us, or that *your* soup is tasty for *you*. No 'mixed readings' are possible. This fact supports the monstrous analysis.

⁶Thanks to Philippe Schlenker for pointing out this prediction.

4 More Contexts, More Monsters

I have shown that questions can optionally shift the judge parameter. But this is not yet the end of the story (by a long shot). As it turns out, shift happens in other contexts too, specifically with modals and evidentials.⁷

- (34) a. Walnuts might be tasty.
 = Tasty for me, tasty for you, tasty for some other individual
- b. Watasi/anata/kare-wa sabisii kamosirenai/mitai-da
 I/you/he-Top lonely might/EVID-Cop
 ‘I/you/he might be lonely/seems to be lonely.’

- (35) boku-wa horensoo-ga kirai daroo/mitai
 I-TOP spinach-NOM dislike probably/seems(EVID)
 ‘It seems/I guess you don’t like spinach./ It seems/I guess he doesn’t like spinach.’

In these sentences we see that the judge role can be held by multiple individuals when modals or evidentials are involved: the agent and the interlocutor, as in question contexts (though the agent is much more natural here; no special context is required), but also other third parties.

Some may find it difficult to see how the modals/evidentials affect interpretation. The judgements are a bit hard out of context. The following context may make things clearer.

- (36) a. A: You’re taking John to the amusement park? Why? You know he’s never had any interest in stuff like that.
- b. B: Why not? Roller coasters might be fun. Even for John!

Here clearly *fun* can mean *fun for John*. Replacing all instances of ‘John’ in the above with ‘you’ also makes it clear that second person readings are possible.

What is going on? Intuitively the situation seems to be something like this. When we make modal statements we are concerned with possibilities. In particular, we may be concerned with the (possible) judgements of some individual, which of course need not be ourselves. We talk about our guesses about that individual’s judgements and thereby change who takes the role of judge. This is quite parallel to the question case, where we ask about another individual’s judgements rather than our own, again changing who takes on the judge role.

To formalize this we simply need another monster, which I’ll call *M*. *M* shifts the judge parameter to an individual in the set consisting of the agent, the interlocutor, and a set of other salient individuals. I will not discuss here what individuals should go into *P*. This mechanism is elucidated in McCready (2006a).

- (37) $\llbracket M \rrbracket(\llbracket \phi \rrbracket^C) = \llbracket \phi \rrbracket^{C^{[5(C) \rightarrow f(A)]}}$, where *f* is a choice function, $A = \{1(C), 2(C)\} \cup P$, and *P* is the set of possible logophoric centers.

Now: the judge parameter is reset so that a number of different individuals can be picked up: the speaker, the interlocutor, and various other salient individuals in the context. Let’s consider how this works with an example. I use the case of experiencer predicates.

⁷I restrict myself to evidential *mitai* here. See McCready and Ogata (to appear) for a detailed discussion of this and other Japanese evidentials.

- (38) kare-wa sabisii kamosirenai
 he-Top lonely might
 ‘He might be lonely.’

The semantics of this sentence is as follows on the present analysis:

- (39) a. $[[kamosirenai]](M([sabisii]^C([kare]^C)))$
 b. $\Rightarrow \diamond([sabisii]^{C^{[5(C) \rightarrow f(A)]}}(he_1))$
 c. $\Rightarrow \diamond(\lambda x.\{f(A) = x\}.[lonely(x)](he_1))$

As will be clear, there is nothing wrong with this computation, as long as he_1 is one of the possible logophoric centers. The cases of judge indexicals and predicates of personal taste are similar. Thus we see that assuming the presence of another monster makes the data fall out. More conceptually, it seems that judge-shifting monsters intuitively arise in situations where we need to shift the judge parameter for interpretative reasons.

5 Summary, Conclusions, Extensions

To sum up: I have discussed three phenomena that involve shift of person in questions and under modal and evidential operators and shown that an analysis that assumes a monstrous operator that shifts the judge parameter in questions and under modals is successful in modeling the data. I hope that I’ve also shown that such an analysis is intuitive.

There are, of course, remaining issues and questions. One question is whether the analysis can be applied to other phenomena. It can. The three phenomena I have focused on are obviously not the only things that show a shift between assertive and question environments. Let me note here just one case, that of German *wohl*, which indicates a kind of epistemic uncertainty about the content of the sentence it appears in (Zimmermann, to appear). In statements the uncertainty is that of the speaker, and in questions it is ascribed to the hearer.

- (40) Hein ist wohl auf See
 Hein is WOHL at sea
 ‘Hein is at sea’ (the speaker assumes)
- a. Was ist wohl die Hauptstadt von Tansania?
 what is WOHL the capital of Tanzania
 ‘What would be the capital of Tanzania?’

The analysis I have presented captures this case, on the assumption that the epistemic stance reported by a sentence is that of the judge, a position independently taken by Stephenson (2005) for modals, which also shift in questions (in terms of whose evidence is taken into account when truth is evaluated, on a relativist account of the modals. Detailed discussion and references can be found in Stephenson 2005). Similar examples can be found with evidentials, but space considerations preclude a fuller discussion.

Another question that might arise is whether the analysis is exhaustive; are there more places where shifts happen? The answer is that it is not exhaustive: there are, in fact, several more environments where shift takes place.

First, sentences including sentence-final particles in Japanese allow indexical shift in (Kansai) Japanese (Tomioka 2006). The particle in (41a) is a dialectal variant of standard Japanese *yo*; the other two are standard.

- (41) Zibun erai see takai naa
 Self very height tall PT
 You are very tall! (Kansai)
- a. Zibun-no kuruma tyuusya-ihan ya de
 Self-gen car parking violation Cop PT
 You parked illegally. (Kansai)
- b. Boku-no okaa-san-ga boku-no-koto sagasi-te-ta yo
 boku-gen mother-nom boku-gen-thing look-for-prog-past PT
 Your mother was looking for you.

It's not well understood yet what these particles are doing (see McCready 2005, 2006b for some discussion of one of them), but postulating monstrous operators for particles is not obviously natural, as also pointed out by Tomioka. The motivations I have given so far for introducing monsters are fairly functional: given the meaning of a particular construction, it makes sense that there be monsters appearing with it, so that the construction can perform the function it is 'intended' to do. It is not so clear that particles are associated with functions of this kind. On the other hand, it is not yet clear what the function of particles is at all (even speaking intuitively). Their semantics does seem to make reference to the epistemic states of other individuals, at least in the cases above. For this reason, I wish to leave open the question of whether it is reasonable to postulate the existence of monsters in these contexts.

We can also find shift taking place in because-clauses (Hara 2005) and contexts where explanations are made in a discourse context (cf. Asher & Lascarides 2003). Tenny 2005 also discusses how because-clauses affect experiencer predicates. Here is an instance of indexical shift from English in such contexts: imagine a situation in which a husband is explaining to his wife, who has just returned to the dinner table from somewhere, why little Harry isn't eating what remains of his dinner. In this context it seems clear that 'we' can be interpreted as 'little Harry.'⁸

(42) We don't like our spinach.

This shows that the interpretation in question is not restricted to because-clauses, but arises in explanations more generally. If this is right, we have to postulate monsters in these contexts as well, which may or may not be attractive. It also seems that a generalization is being missed: what do all these constructions have in common? This is an urgent question for future work.

This is the place to return to the issue of speakers who allow predicates of personal taste to take salient individuals as judges. Within the present framework it is clear how they might be accommodated: we simply introduce instances of the operator *M* to shift the judge in contexts other than those produced by modals and evidentials, i.e. allow relatively free use of monsters. The same move for Japanese, with *Sh*, allows free shift of the indexicals for the liberal speakers that accept this shift. While this move is possible, it immediately produces many unwelcome consequences; to take an obvious example, we predict that free shifting is possible for experiencer predicates, which is certainly false. We might as a result need to make distinctions between judges of different types. It also becomes necessary to introduce new constraints on monster

⁸It is worth noting that it is not easy to get a shift of this sort in Japanese without using overt markers of *Explanation* such as *kara* 'because'; the reason is probably that Japanese makes more extensive use of such markers than English, and so it can be difficult to get a (natural sounding) *Explanation* construal of sentences like this one without explicit marking. Some discussion of this fact can be found in McCready (2005), but the reason for it remains mysterious.

introduction to disallow their use in circumstances where shift is *not* possible. I don't presently see how this could be done in a principled way. But, I think, this is the route one would have to take to maintain the present picture for more liberal dialects.

All this assumes, of course, that nothing else is at work in the relevant examples. The 'liberal' dialects are only liberal if the particles lack the capacity to shift the judge parameter, and if no discourse phenomenon is at work in examples in which the shift takes place. Tomioka's indexical examples all involve either particles or questions; but the examples presented by Stephenson and others of shifts in the 'modal evaluator' and the judge in predicates of personal taste do not. Further investigation is needed here.

Another issue is that the relation between indexical and bound or logophoric *zibun* is not very clear, though it does seem that one should exist. In a way it seems very reasonable that the judge should be the same as the logophoric center, as Stephenson (2005) points out. After all, the logophoric center is the individual whose perspective is taken, and, in some sense, the individual whose perspective is expressed is just what the judge parameter formalizes.⁹ I tacitly built a connection into the semantics by using *P* in my definition of the possible judges introduced by *M*. What is really needed is an exposition of the connection between the judge parameter and *de se* readings, and how both related to logophoricity. This will have to wait for a later paper.

It seems as if ultimately what one wants is a general theory of perspectives, understood as an explication of both logophoricity and judgehood. Most research, including the present paper, has modeled perspectives as simply individuals (as present in context tuples). But is this right? What should a perspective be? A judge. But more than a judge perhaps: Kölbel (2002) thinks they should include distinct truth evaluations, which already captures the notion that Laserson means to in his account. Perhaps they should also include an assignment function, so that perspectives would consist of tuples of individuals, valuation functions (or perhaps worlds), and assignments? Surely two individuals could disagree about the identity of a particular referent, and equally certainly they can hang different information off the peg associated with it. Here is a place we should probably make use of dynamic ideas about context. If these suggestions are on the right track, what has to be done is to determine a) what a perspective is, b) how it can be changed, and c) how those changes are carried over, or not, in discourse. The present paper is intended as a contribution to answering the second of these questions.

References

- Anand, P. and Nevins, A.: 2004, Shifty operators in changing contexts, *Proceedings of SALT XIV*.
- Asher, N. and Lascarides, A.: 2003, *Logics of Conversation*, Cambridge University Press.
- Hara, Y.: 2005, Implicatures and evidentiality of because-complements at syntax-semantics-pragmatics interfaces, in K. Yabushita (ed.), *Proceedings of LENS05*.
- Hunter, J. and Asher, N.: 2005, A presuppositional account of indexicals, in P. Dekker and M. Franke (eds), *Proceedings of the Fifteenth Amsterdam Colloquium*, pp. 119–124.
- Kaplan, D.: 1989, Demonstratives, in J. Almog, J. Perry and H. Wettstein (eds), *Themes from Kaplan*, Oxford University Press. Manuscript version from 1977.

⁹I do not want to claim that this is so for every case, for instance that of deictic expressions. Clearly these are perspectival (Oshima 2006), but it is not so obvious that they shift under questions or modalities.

- Kölbel, M.: 2002, *Truth Without Objectivity*, Routledge.
- Kuno, S.: 1973, *The Structure of the Japanese Language*, MIT Press, Cambridge MA.
- Kuroda, S.-Y.: 1965, *Generative Grammatical Studies in the Japanese Language*, PhD thesis, MIT.
- Lasersohn, P.: 2005, Context dependence, disagreement, and predicates of personal taste, *Linguistics and Philosophy* **28**, 643–686.
- McCready, E.: 2003, The dynamics of a Japanese reflexive pronoun. In press for *New Frontiers in Artificial Intelligence: Joint Proceedings of the 17th and 18th Annual Conferences of the Japanese Society for Artificial Intelligence*, K. Hasida and K. Nitta, eds., in *Lecture Notes in Computer Science* series, Springer Verlag, Berlin.
- McCready, E.: 2005, *The Dynamics of Particles*, PhD thesis, UTexas-Austin.
- McCready, E.: 2006a, Discourse subordination and logophoric binding, *Research on Language and Computation* .
- McCready, E.: 2006b, Japanese *yo*: Its semantics and pragmatics, *Sprache und Datenverarbeitung* **30**, 25–34.
- McCready, E. and Ogata, N.: 2005, Evidentiality, modality, and probability. To appear in *Linguistics & Philosophy*.
- Mitchell, J.: 1986, *The Formal Semantics of Point of View*, PhD thesis, University of Massachusetts at Amherst.
- Oshima, D.: 2006, *Perspectives in Reported Discourse*, PhD thesis, Stanford.
- Potts, C.: 2005, *The Logic of Conventional Implicatures*, Oxford University Press. Revised version of 2003 UCSC dissertation.
- Schlenker, P.: 2003, A plea for monsters, *Linguistics and Philosophy* **26**, 29–120.
- Stephenson, T.: 2005, Assessor sensitivity: Epistemic modals and predicates of personal taste, in J. Gajewski, V. Hacquard, B. Nickel and S. Yalcin (eds), *New Work on Modality*, MITWPL.
- Tenny, C.: 2006, Evidentiality, experiencers, and the syntax of sentience in Japanese, *Journal of East Asian Linguistics* **15**, 245–288.
- Tomioka, S.: 2006, Plural indexicals in Japanese (and beyond). Talk given at ZAS Berlin.
- Zimmermann, M.: to appear, Discourse particles in the left periphery. In B. Shaer, W. Frey, and C. Maienborn (eds.), *Dislocated Elements in Discourse*, Oxford; Routledge.