Contextualism and Japanese Knowledge Attributions

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1. Introduction

This paper examines the linguistic basis for epistemic contextualism from a crosslinguistic perspective. Epistemic contextualism or contextualism about knowledge attributions is a thesis concerning natural language, according to which the proposition expressed by the use of knowledge-attributing (and knowledge-denying) sentences varies from context to context in an epistemologically distinctive way. Epistemic contextualism has been defended mainly through the ordinary use of the English knowledge verb *know*.[1] Jason Stanley, however, criticizes epistemic contextualism for lacking good linguistic reason to take *know* to be a context-sensitive expression.[2]

In this paper, *pace* Stanley, I defend the thesis that knowledge attributions are analyzed as a species of modal expressions, such as *must*, which are widely held to be context-sensitive. Let us call the thesis 'modal contextualism'. I argue that modal contextualism holds for Japanese. Thus, epistemic contextualism is correct at least in a limited domain.

To specify the context-sensitivity of knowledge attributions, the epistemic contextualist has to engage in the analysis of the verb *know*. The lexical semantics of *know* is, however, not a simple linguistic exercise.[3] This is partly because *know* is an atomic expression whose underlying structure is not transparent. In contrast, the knowledge verb in Japanese *sitteiru* is morphologically complex, consisting of the verb-stem *si-* together with the aspectual and tense morphemes *-te-i-ru*. We can decompose the term into its parts and

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[1] Among others, Keith DeRose is a leading proponent of epistemic contextualism. See DeRose, K., *The Case for Contextualism: Knowledge, Skepticism, and Context*, volume 1, (Oxford: Oxford University Press, 2009).

[2] Stanley, J., "On the linguistic basis for contextualism" in *Philosophical Studies*, 119(1-2), 2004, pp.119-146; Stanley, J., *Knowledge and Practical Interest*, (Oxford: Oxford University Press, 2005).

[3] Peter Ludlow emphasizes the complexity of the linguistic data concerning occurrences of *know*. Ludlow, P., "Contextualism and the new linguistic turn in philosophy" in Preyer, G. and Peter, G., editors, *Contextualism in Philosophy: Knowledge, Meaning, and Truth*, (Oxford: Oxford University Press, 2005), pp.11-50.

examine what role each part plays in knowledge attributing sentences. Thus, arguably, we have easier access to the underlying structure of Japanese knowledge attributions than that of English counterparts because the apparent morphological structure might as well reflect the underlying semantic structure. [4]

In Section 2 I will present a modal analysis of Japanese knowledge attributions. The analysis is based on Atsuko Nishiyama's analysis of the Japanese aspect marker *-te-i-*, which in turn essentially relies on Paul Portner's Kratzerian modal analysis of the progressive. [5] Nishiyama's semantics entails that Japanese knowledge attributions quantify over context-sensitive 'inertia worlds', with which we understand progressive sentences. The modal analysis accounts for our shifting intuitions concerning the truth-values of one and the same knowledge attributing sentence in different contexts. In Section 3 I will introduce Stanley's main argument against epistemic contextualism and show that it cannot be reproduced for Japanese knowledge attributions once we grasp the characteristics of the quantificational domains for knowledge attributions.

2. Modal Contextualism

2.1 Basic facts about Japanese knowledge attributions

For present purposes, the most important feature of Japanese knowledge attributions is that the expression corresponding to *know* in Japanese is morphologically complex and contains the aspect marker *-te-i-*. The presence of *-te-i-* is necessary for forming a knowledge attribution. If the knowledge verb does not come with *-te-i-*, it does not produce the 'S knows that p' interpretation. (1a) is an ordinary propositional knowledge attribution in Japanese, analogous to the English *S knows that p* construction. Consider (1b), which is exactly like (1a) except that it lacks the *-te-i-* morpheme. (1b) does not express an ordinary propositional knowledge attribution; it seems to describe Rintaro's realization of the fact that Elise came. The verb stem *si-* on its own corresponds rather to an eventive verb such as *find out*, *learn*, *realize*, or *discover* than the stative verb *know* in English.

(1) a. Rintaro-wa   Elise-ga   kita   koto-o   si-**te-i**-ru.
       Rintaro-Top   Elise Nom came   Nominalizer-Acc   *si-te-i*-Nonpast
       'Rintaro knows that Elise came.'

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[4]   Certainly, at the end, we have to be very cautious about what we can legitimately conclude of knowledge attributions in general on the basis of Japanese knowledge attributions. The same point, however, holds for all past studies that involve an occurrence of *know* or *knowledge* in English. Is there any difference between Japanese and English knowledge attributions? What accounts for such a difference? Is it a pragmatic, semantic or syntactic fact? I cannot address such questions in this paper. At any rate it is likely to be beneficial for us to study knowledge attributions in other languages than English, besides examining ever more subtle and complex data concerning knowledge attributions from English speakers.

[5]   Nishiyama, A., "The meaning and interpretations of the Japanese aspect marker *-te-i-*" in *Journal of Semantics*, 23, 2006, pp.185-216; Kratzer, A., "What 'must' and 'can' must and can mean" in *Linguistics and Philosophy*, 1(3), 1977, pp.337-356; Kratzer, A., "Partition and revision: The semantics of counterfactuals" *in Journal of Philosophical Logic*, 10(2), 1981, pp.201-216; Portner, P., "The progressive in modal semantics" in *Language*, 74, 1998, pp.760-787.

      b. Rintaro-wa Elise-ga kita koto-o si-ru.

         'Rintaro finds out/will find out that Elise came.'

The suggestion that *si-* itself is a predicate of events is corroborated by the following contrast.

(2)   a. ??Watasi-wa   gakko-de/mokuyobi-ni   mizu-ga H_2O dearu koto-o   si-te-i-ta.

          I-Top   school-at/Thursday-on   water-Nom H_2O is   Nominalizer-Acc *si-te-i-*Past

          Literally 'I knew that water is H_2O at school/on Thursday.'

      b. Watasi-wa   gakko-de/mokuyobi-ni mizu-ga H_2O dearu   koto-o   si-ta.

          I-Top   school-at/Thursday-on water-Nom H_2O is   koto-Acc   *si-*Past

          'I learned that water is H_2O at school/on Thursday.'

The composite knowledge phrase *si-te-i-ru* is incompatible with a spatial or temporal modifier, such as 'at school', as in (2a), whereas the verb *si-* alone is compatible with such modifiers, as in (2b). This is unsurprising given the stative *know* is often regarded as an individual-level predicate, which is incompatible with a spatiotemporal modifier.[6]

    Since *-te-i-* is necessary for forming ordinary knowledge attributions in Japanese, now I turn to the roles of *-te-i-* within sentences.

2.2 The semantics of *-te-i-*

    The aspect marker *-te-i-* in Japanese is associated with both progressive and perfect interpretations.

(3)   Ken-ga   hashi-te-i-ru.

      Ken-Nom   run-*te-i-*Nonpast

      a. 'Ken is running.'

      b. 'Ken has (already) run.'[7]

(3) has two different readings: one of them corresponds to the English present progressive (3a), and the other corresponds to the present perfect (3b). Any adequate analysis of *-te-i-* must account for both progressive and perfect interpretations.

    Nishiyama presents such an analysis of *-te-i-*, whose two main components are Davidsonian event semantics and Portner's modal analysis of the progressive. Let me first briefly introduce the former component. She adopts a standard form of Davidsonian event semantics, in which verb phrases express predicates of events or states (so-called 'eventualities') and thematic arguments and adverbial phrases

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[6]   Kratzer, A., "Stage-level and individual-level predicates" in Carlson, G. and Pelletier, F. J., editors, *The Generic Book*, (Chicago: Chicago University Press, 1995), pp.125-175.

[7]   Nishiyama, op. cit., pp.185-6.

modify eventualities.[8] Additionally, following Manfred Krifka,[9] she assumes there to be part-whole relations among events. We will see below that this partonomic assumption plays an important role in explaining the multiple interpretations of -te-i-.

Now I turn to the second component of Nishiyama's analysis of -te-i-. Portner adopts David R. Dowty's modal analysis of the progressive, according to which the progressive morpheme is a kind of necessity operator: a progressive sentence is true at world w and time t just in case the corresponding nonprogressive sentence is true in all 'inertia worlds' of w at t. Inertia worlds of a world at a certain time t are exactly like the world up to t and 'the future course of events after this time [t] develops in ways most compatible with the past course of events'.[10] Inertia worlds basically represent our expectations of the future. Portner presents Dowty's analysis in event semantic terms. For example, according to Portner,

(4)   Ken was crossing the street.

is true at w and t iff there was an event at w and t that is an ongoing proper part of Ken's crossing of the street in all inertia worlds of w and t, where things proceed normally without any unexpected interruption of the event. In other words, (4) is true iff we expected what Ken was doing to amount to the crossing of the street, whether he in fact succeeded in doing so in the actual world. These truth-conditions seem compatible with our ordinary use of (4).

Portner's underlying assumption is Kratzer's theory of modality, according to which a modal expression, such as *can*, is context-sensitive; the set of possible worlds that a modal sentence quantifies over depends on the context of use. So inertia worlds for the progressive are also dependent on the context. Then, how is a set of inertia worlds contextually selected? A set of inertia worlds is doubly relativized to two conversational backgrounds: a modal base and an ordering source. A modal base for a progressive sentence, often represented as 'f(e, φ)', is the set of propositions concerning the circumstances that are relevant to whether event e is completed as an event satisfying eventuality description φ given the context of use. With respect to an ordinary use of (4), f(e, φ) includes the propositions such as 'Ken is in good

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[8]   Davidson, D., "The logical form of action sentences" in Rescher, N., editor, *The Logic of Decision and Action*, (Pittsburgh: University of Pittsburgh Press, 1967), pp.81-95, republished in Davidson, D., *Essays on Actions and Events*, (Oxford: Oxford University Press, 1980); Bach, E., "The algebra of events" in *Linguistics and Philosophy*, 9(1), 1986, pp.5-16; Parsons, T., *Events in the Semantics of English*, (Cambridge: Massachusetts: The MIT Press, 1990). Nishiyama uses an intensional version of event semantics. For example, something like (b) represents the semantic structure of (a). (b) stands for a proposition that is true at world w iff there is a past event of John's arriving in w.
       (a) John arrived.
       (b) $\lambda w \exists e(PAST(e) \wedge e$ is John's arriving in w)
[9]   Krifka, M., "Nominal reference, temporal constitution, and quantification in event semantics" in Bartsch, R., van Benthem, J., and van Emde Boas, P., editors, *Semantics and Contextual Expression*, (Dordrecht: Foris Publications, 1989), pp.75-115; Krifka, M., "The origins of telicity" in Rothstein, S. D., editor, *Events and Grammar*, (Dordrecht: Kluwer Academic Publishers, 1998), pp.197-235.
[10] Dowty, D., *Word Meaning and Montague Grammar*, (Dordrecht: D. Reidel, 1979), p.148.

physical condition', 'Ken intends to cross the street', 'The pedestrian light is green', 'The street is crossable', 'Ken started walking toward the other side of the street', etc.[11] When we consider whether (4) is true, we would certainly consider such factors.

An ordering source, represented as 'g(e, φ)', encodes our normal expectations concerning the completion of e as φ given the context. g(e, φ) can be seen as 'the set of outside factors' that need to hold for e to culminate as φ in the context.[12] As for the example under consideration, g(e, φ) includes the propositions such as 'Ken does not slip and hurt his ankle', 'Ken does not turn around', 'Ken does not get hit by a truck', etc.[13] If we don't assume such propositions, there would always be many remote possibilities in which Ken failed to cross the street, and (4) would never be true. Perhaps in the actual world, Ken was hit by a truck and failed to cross the street. But such an intrusion is rare and can be ignored. When we consider whether (4) is true, we would exclude a number of remote possibilities that could prevent Ken from performing the described action.

The set of inertia worlds ('I(e, φ)'), is obtained by imposing an order to f(e, φ) by means of g(e, φ). Roughly speaking, the subsets of worlds in f(e, φ) are ordered in accordance with the criterion of how many propositions in g(e, φ) hold.[14] I(e, φ) is the best subset of f(e, φ), where as many propositions in g(e, φ) as possible hold.[15] Since f(e, φ), g(e, φ), and hence I(e, φ) are contextually determined, a progressive sentence, such as (4), is context-sensitive.

There are various ways in which contexts influence I(e, φ) and hence the truth-conditions of (4). Let me mention one such case. Ordering source g(e, φ) shifts from context to context because what counts as an outside factor in one context is a relevant factor in another. Suppose that (4) is uttered at the height of the Cold War, where the street is the border between Western and Eastern Berlin. People have great difficulty in crossing the border because of the tight security. In fact most people who attempted to cross the border have been hit by a truck. In this context g(e, φ) does not include the proposition 'Ken is not hit by a truck' because that is not something we could expect to hold in the scenario. I(e, φ) thereby includes both types of worlds where Ken is and is not hit by a truck. Since in some inertia world Ken is hit by a truck and fails to cross the street, (4) is false in this context. We indeed tend to judge (4) to be false in this context. We

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11 Portner, op. cit., p.780.

12 Ibid., p.773.

13 Ibid., p.781.

14 For more details, see Kratzer's articles, op. cit.

15 Note that f(e, φ) does not necessarily include all the propositions that hold at the world of utterance; it includes only those relevant to the completion of the event under the description. Given e, φ, and the context of use, what counts as relevant is determined. Many things that hold in the utterance world are treated as irrelevant. For example, suppose that Ken was in fact hit by a truck in the middle of the street and he failed to cross the street. If the propositions about the truck and its relations to Ken are included in f(e, φ), then (4) would be predicted to be false because there is no event of Ken's crossing the street in any inertia world. However, even if Ken was hit by a truck, we judge (4) to be true, insofar as Ken's action was sufficiently seen as crossing of the street. This is because, given e, φ, and the context, the trajectory of a single truck is normally irrelevant for his action, e, to complete. Perhaps a black hole swallowed the earth and Ken's attempt fell short. But such a cosmic catastrophe is normally irrelevant to e and φ. Thus, the set of possible worlds that are compatible with the relevant propositions include both types of worlds where Ken is hit by a truck in the middle of the street and where he is not.

might as well say, 'he merely wanted to cross the street; he wasn't really crossing the street'.

Nishiyama shows that Portner's analysis applies to both progressive and perfect interpretations of *-te-i-* in Japanese with a small modification. Recall that, according to Portner, a progressive sentence is true iff you have a *proper* part of a described type of event in all inertia worlds. This is because if you have a non-proper part of an event, say Ken's crossing the street, then you would have the whole event of his crossing the street because everything is part of itself. Then the sentence *Ken is crossing the street* would be true even when he has already crossed the street. That is a wrong prediction. Thus, we need to use a *proper* part-whole relation to represent a progressive interpretation.

Japanese *-te-i-* constructions, however, express both progressive and perfect interpretations. Nishiyama suggests to replace the proper part-hood relation with the simpler part-whole relation to ambiguously represent both ongoing events for the progressive and culminated events for the perfect. Just as English progressives, a *-te-i-* construction has a progressive interpretation if you have a proper part of a described event. Additionally, it has a perfect reading if you have a non-proper part of a described event, i.e., the whole event. For example, (3) is true when there is an event that is non-proper part of (namely, identical to) the event of Ken's running in all inertia worlds. That is, (3) is true when Ken has already finished running. A *-te-i-* construction is not only true of an ongoing event of a certain kind, but also true of a completed event of the same kind. That is why the *-te-i-* construction can have two different interpretations. I skip the compositional and further details of Nishiyama's analysis, which are not important for our purposes. Overall, *-te-i-* introduces a state that is a result of an event such that it is (proper or not) part of a described event in all inertia worlds. [16] Now I apply this analysis to knowledge attributions in Japanese.

2.3 The analysis of Japanese knowledge attributions

As we have seen in Section 2.1, Japanese propositional knowledge attributions, such as (5) below, have to include an occurrence of *-te-i-*.

(5)	Boku-wa	kuruma-ga	chusyajo-ni	tomatteiru koto-o	si-te-i-ru.
	I-Top	car-Nom	parking.lot-Dat	parking Nominalizer-Acc	*si-te-i-*Nonpast

'I know that my car is parked in the parking lot.'

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[16] Something like (a) can be used to represent the proposition expressed by a use of (3), which is true at w iff there is a state that is a result of an event such that it is either ongoing part of Ken's running or identical to Ken's running in all inertia worlds.

(a) $\lambda w . \exists s \exists e [PRES(s) \wedge e \rightarrow s \wedge [\forall w' : w' \in I(e, \lambda e . \lambda w . e$ is Ken's running in w)][$\exists e'$ ($e \leq e' \wedge e'$ is Ken's running in w')]]

(where '$e \leq e'$' means that e is part of e' without requiring e to be proper part of e' and 'e $\rightarrow$ s' means that s is a result or consequence of e.)

(a) is compatible with both progressive and perfect interpretations as expected. In Nishiyama's account, the morphemes *-te-* and *-i-* are treated separately: each morpheme incrementally makes a contribution to the overall meaning of the entire sentence. Both *-te-* and *-i-* are operators on predicates of eventualities. *-te-* basically plays the same role as the English progressive morpheme, whereas *-i-* is a 'stativizer', which returns a predicate of states rather than events.

Now we know that a *-te-i-* sentence can have a progressive or a perfect interpretation. But recall that the main verb *si-* to which *-te-i-* is attached is analogous to *find out, discover*, etc. If (5) has a progressive meaning and the subject is still in the process of finding out or discovering a certain fact, then (5) would not be understood as a propositional knowledge attribution. How could one be said to know that p if she has not yet figured out that p? So I assume that (5) has a perfect interpretation. Let 'P' stand for the proposition that my car is parked in the lot. On Nishiyama's analysis, (5) is true iff there is a state that is a consequence of my finding out that P in all inertia worlds.

This analysis supports epistemic contextualism because the set of inertia worlds is contextually determined. A major argument for epistemic contextualism is that we genuinely judge one and the same knowledge attributing sentence to be true in one context and false in another.[17] Now I want to discuss how this analysis accounts for our shifting intuitions. Inertia worlds are determined by a modal base and an ordering source. Modal base $f(e, \varphi)$ for (5) is determined based on what is relevant to the culmination of my finding out that P in this context. What is relevant to finding out a certain fact? There seem to be a number of necessary conditions for one to find out something, such as one's external environment and mental capacities. But here I want to focus on one important factor. Taking David Lewis's analysis of knowledge attributions as a starting point, I suggest that, for a given proposition p, what is primarily relevant for me to find out that p in a certain context is whether I obtain evidence that eliminates some relevant not-p possibilities in that context. Lewis says, 'S knows that P iff S's evidence eliminates every possibility in which not-P—Psst!—except for those possibilities that we are properly ignoring'.[18] So, according to Lewis, one needs to have evidence for her to know something. Similarly, I suggest that one needs to have evidence for her to find out something. Thus, $f(e, \varphi)$ for (5) includes, at least, the propositions relevant to whether I obtain evidence that supports P.

Now let us consider $g(e, \varphi)$ for (5), which constrains the outside factors that could prevent me from finding out that P. $g(e, \varphi)$ is required because, normally, the totality of evidence I have for P does not eliminate all not-P possibilities. For example, imagine that I utter (5) in an ordinary context merely to report where I will go to pick up my car. Nothing important hangs on my utterance. In this context I sincerely assert (5) because, perhaps, I remember that I parked my car in the parking lot. The fact that I remember that I parked in the lot provides evidence for P. This piece of evidence, however, cannot eliminate all not-P possibilities. The fact that I remember so is compatible with many other ways in which not-P holds. The car might have been stolen. That is, $f(e, \varphi)$ contains both P and not-P worlds. But here we can introduce $g(e, \varphi)$, which lists all those outside factors that are required to hold for the event in the context to culminate. $g(e, \varphi)$ includes the propositions such as 'I am not clinically forgetful', 'Car theft is rare in this area; the car has not been stolen', 'I am not a brain in a vat', etc. If any of these propositions does not hold, then the event of finding out that P would not hold even when I remember that I parked in

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17   DeRose, op. cit., Chapter 2.

18   Lewis, D., "Elusive knowledge" in *Australasian Journal of Philosophy*, 74, 1996, pp.549-67.

the lot. Given f(e, φ) and g(e, φ), we can obtain I(e, φ), the best worlds with which we evaluate (5). In this ordinary context, I(e, φ) does not include any not-P-world where my finding out that P is interrupted. Thus, the fact that I remember that I parked in the lot indeed eliminates all not-P possibilities within I(e, φ). Therefore, I obtain enough evidence for P in all of the contextually selected inertia worlds. That is, (5) is true.

It is important to remind ourselves that an ordering source, g(e, φ), is context-sensitive. What counts as an outside factor shifts depending on the ways in which we elaborate the scenario in question. Suppose that a detective visits me and inquires if I am really sure that my car is parked in the lot. Something very urgent and consequential is contingent on my answer. Now we tend to, at least, withhold our assent to (5). This is because the presented scenario invites us to modify g(e, φ). g(e, φ) reflects our expectations or some standard of normalcy. g(e, φ) for the ordinary context presumes that what typically takes place indeed does so; it assumes that the car has not been stolen. But the atypical presence of a detective invites us to modify such stereotypical expectations. For example, we might remove from g(e, φ) the proposition that my car has not been stolen. Given the new scenario, such a possibility cannot be considered to be an outside factor. Assuming we still have the same modal base, we obtain the inertia worlds that are undetermined about whether the car has been stolen or not. The fact that I remember I parked my car in the lot does not eliminate the possibility that the car has been stolen. Thus, it is not the case that I found out that P in all inertia worlds; in some inertia worlds, P does not hold and I cannot find out that P. Therefore, the presented analysis indeed predicts our shifting intuitions about various uses of (5). [19]

3. Stanley's Argument against Modal Contextualism

In this section I will discuss Stanley's argument against modal contextualism and argue that it does not apply to the presented modal analysis of Japanese knowledge attributions. Stanley's basic line of reasoning against modal contextualism goes as follows. Consider the pair (6) and (7), which contain multiple occurrences of a modal and a knowledge expression respectively. In (6) two different speakers use the same modal expression *it is possible* in two different senses. Stanley claims that (7) is structurally analogous to (6), and that they form a minimal pair. If *know* is context-sensitive in an analogous way to modal expressions, such as *it is possible* and *can*, then we would be able to use *know* in more than one sense as well; (6) and (7) would be equally felicitous. Stanley points out, however, that (6) is clearly

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[19] Although this article does not fully explore the issue, the modal analysis also seems able to account for our intuitions concerning Gettier cases. A modal base for (5) can shift depending on the circumstances of the event in question, of which the speaker may or may not be aware. The fact that I remember I parked in the lot might have nothing to do with what is relevant to finding out that P in a Gettier case; some other kind of evidence is required for me to find out that P. What is included in a modal base varies from context to context. Recall the Cold War example: being in good physical condition is not enough for one to cross the street on the border of Western and Eastern Berlin. Sentence *Ken is crossing the street* can be false in such a circumstance. Thus, the modal analysis predicts (5) to be false in a Gettier context, even if I remember that I parked in the lot. The fact that I remember it would have provided enough evidence in a different context, but not in a Gettier context.

felicitous, whereas (7) is not. Therefore, *know* is not context-sensitive in an analogous way to *it is possible*.

(6)   TECHNOLOGY

    A. It's possible to fly from London to New York City in 30 minutes.

    B. That's absurd! No flights available to the public today would allow you to do that. It's not possible to fly from London to New York City in 30 minutes.

    A. I didn't say it was. I wasn't talking about what's possible given what is available to the public, but rather what is possible given all existing technology.

(7)   ZOO

    A. (looking at a zebra in a normal zoo). I know that is a zebra.

    B. But can you rule out its being a cleverly painted mule?

    A. I guess I can't rule that out.

    B. So you admit that you don't know that's a zebra, and so you were wrong earlier?

    A. #I didn't say I did. I wasn't considering the possibility that it could be a cleverly painted mule. [20]

Two speakers A and B in (6) both seem to speak truly because they are speaking of two different types of possibility: technological possibility and practical possibility. It is technologically but not practically possible to fly from London to New York City in 30 minutes. What 'flavor' of possibility a modal phrase expresses depends on how its domain of quantification is restricted. The sentence *It's possible to fly from London to New York City in 30 minutes* is true with respect to the domain of technological possibilities but not true with respect to the domain of practical possibilities. Speaker A's use of *it's possible* should be understood in terms of one domain, while B's use should be understood in terms of the other. The last utterance of (6) is acceptable; A is not contradicting herself by denying the practical possibility of traveling in 30 minutes because she was not talking about the practical possibility at all. In contrast, the final utterance of (7) is clearly unacceptable. The speakers in (7) seem unable to appeal to two different senses of *know*. We seem unable to assign two different domains of quantification to resolve their disagreement. Stanley claims that this is because the verb *know* is not a context-sensitive expression.

    Whether this argument is sound for English, it cannot be reproduced in Japanese given our analysis of Japanese knowledge attributions. The analysis explains why the Japanese counterparts of (6) and (7), (8) and (9) below, do not constitute a minimal pair and thereby fail to apply to Japanese.

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[20]   Stanley, *Knowledge and Practical Interest*, pp.52-3.

(8) TECHNOLOGY [21]

    A. London kara New York e 30 pun de   tobu koto-wa   kanoo desu.

       London from New York to 30 min. in   fly Nominalizer-Top   possible be.polite

       'It's possible to fly from London to New York City in 30 minutes.'

    B. (That's absurd! No flights available to the public today would allow you to do that.

       It's not possible to fly from London to New York City in 30 minutes.)

    A. Sono toori   jissai-wa   dekimasen.

       That right   actuality-Top   cannot.polite.

       'You are right. We cannot actually do so.'

       Demo sooiu   imi de   kanoo da to   ittanja   naidesu.

       But   that   sense in   possible be as   said   not.polite

       'But I didn't say 'it's possible' in that sense.'

(9) ZOO

    A. Watasi-wa   are-ga   simauma da to   si-te-i-masu.

       I-Top   that-Nom zebra   is that   know-polite

       'I know that is a zebra.'

    B. (But can you rule out its being a cleverly painted mule?)

    A. (I guess I can't rule that out.)

    B. (So you admit that you don't know that's a zebra, and so you were wrong earlier?)

    A. Sono   toori   sirimasen.

       That   right   know.not.polite.

       'That's right. I don't know.'

       #Demo   sooiu   imi de   si-te-i-ru to   ittanja   naidesu.

       But   that   sense in   know as   said   not.polite

       'But I didn't say 'I know' in that sense.'

Here we can observe a contrast between *kanoo da* ('it's possible') and *si-te-i-ru* ('know') that is similar to what Stanley finds in (6) and (7). [22] In (8) speaker A explicitly denies the sense of *kanoo da* ('it's possible') intended by speaker B, whereas, in (9), the analogous sentence with *si-te-i-ru* ('know') is unacceptable. This might appear to support the anti-contextualist conclusion that *si-te-i-ru* is not a context-sensitive expression. Our analysis of Japanese knowledge attributions, however, accounts for why *kanoo da* and *si-te-i-ru* behave differently in (8) and (9).

Assuming Kratzer's theory of modality, we can explain the two different senses of *kanoo da* in (8) in two

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[21] I translate only the key sentences in each dialogue. Those in parentheses are to be understood as Japanese sentences.

[22] Yukio Irie does not find the last utterance of (9) so unnatural (p.c.). If his intuition is widely shared, then the pair straightforwardly shows that Stanley's argument against modal contextualism is inapplicable to Japanese.

different ways. First, we can assign two different types of modal bases to A and B's uses of *kanoo da*: A's f(e, φ) includes the worlds in which everything that is technologically possible indeed takes place, while B's f(e, φ) includes the worlds in which everything that is practically possible takes place. As a result, A and B's uses of *kanoo da* can express a different flavor of possibility. Second, alternatively, we can assign two different types of ordering sources to the occurrences of *kanoo da*: A's g(e, φ) expresses the norm of our technological excellence, which can be paraphrased as 'given what our technology allows', whereas B's g(e, φ) expresses the norm of airline industry, 'given the available flights'. As a result, again, A's use of *kanoo da* has a different interpretation from B's. The important point to remember is that different types of f(e, φ) or g(e, φ) are available to interpret the occurrences of *kanoo da* in (8).

In contrast, in (9), we cannot assign two different types of ordering sources to two different occurrences of *si-te-i-ru*. Both A and B use the same type of ordering source, g(e, φ), namely, the list of outside factors that we expect to hold given e, φ, and the context, which we might paraphrase simply as 'given what is normal in this context'. We can describe the situation in the following way. B is pointing out that A's understanding of the property of 'being what is normal in this context' is insufficient and a proposition must be removed from A's g(e, φ). For example, B can be seen as suggesting to remove the proposition that a zebra-like animal is a zebra. Let us call this proposition 'Z'. If Z is not an outside factor, A cannot assume Z to hold. Z must be supported by her evidence. Z is, however, necessary for A to eliminate the possibility that what A sees is not a zebra. Without Z in g(e, φ), A cannot claim that A knows that what she sees is a zebra because her perceptual evidence cannot rule out the possibility that she is looking at a cleverly painted mule. If A concedes B's point, then both occurrences of *si-te-i-ru* must be understood with respect to the same ordering source, which makes A's last utterance unacceptable.

I have argued that (8) and (9) do not form a minimal pair because the former can involve more than one type of modal base or ordering source, whereas the latter cannot. If we want to have a minimal pair, we have to pair (9) with the cases in which two speakers disagree with one another about the precise nature of a single g(e, φ), not those cases where we can assign two distinct types of modal bases or ordering sources, as in (8). Consider the following scenario, where A and B are looking for a parking space on campus.

    (10) PARKING

        A. Koko-wa   yoji iko   kuruma-o   tomeru koto-ga   dekimasu.

           here-Top   4.oclock after   car-Acc   park Nominalizer-Nom   can.polite

           'It's possible to park here after 4 pm.'

           (because I read the sign before)

        B. Iya, dekinai   desuyo.

           No, cannot   be.polite

           'No, it's not possible.'

           (They updated the rules and we would get a ticket.)

A. (Glad you know the update.)

B. (So you admit that you were wrong earlier in saying that it's possible to park here?)

A. Sono   toori dekinai   desu.

That   right cannot   be.polite.

'That's right. It's not possible to park here.'

#Demo sooiu imi de   dekiru to ittanja   naidesu.

But   that sense in   can as   said   not.polite

'But I didn't say 'it's possible' in that sense.'

The modal word *deki-* here is more or less synonymous with *it's possible*, which is understood as introducing a quantification over some normative worlds, where every regulation is observed. By saying that 'it's possible to park here', A claims that she would be observing the regulations if she parked her car at the location. The ordering source, g(e, φ), can be seen as expressing the set of regulations to be observed in this context. In (10) A's understanding of g(e, φ) is shown to be dated; B corrects A's misunderstanding of g(e, φ). The relevant parking regulations are the latest ones. Insofar as A concedes that B's understanding of g(e, φ) is the correct one, A cannot introduce an irrelevant ordering source to make her previous statement true. In both (9) and (10) A and B use a single type of ordering source, which makes them a minimal pair. And the last utterance of (10) is indeed as infelicitous as that of (9). Therefore, Stanley's argument against modal contextualism cannot be reproduced in Japanese.

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文脈主義と日本語の知識帰属
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　本稿の主な目的は、認識論的文脈主義 epistemic contextualism の言語学的な基礎を、言語横断的な側面から考察することである。そのために、日本語を対象言語として、認識論的文脈主義の可能性を模索する。私は本稿において、日本語の知識を表現する動詞「知っている」が、複合的かつ文脈依存的な様相表現として分析できると主張する。この分析は西山淳子による日本語のアスペクト「てい」の様相分析に依拠する。西山のアスペクト「てい」の分析は、文脈依存性に基づいた標準的な様相表現分析を利用するため、日本語の「知っている」が文脈依存表現であることが導かれる。日本語における「S が P を知っている」は、おおよそ、「S は、すべての慣性世界 inertia worlds において、P であることを知ったという出来事の帰結状態にある」ということを意味する。この「知っている」の様相分析は、知識帰属文に関する、文脈に応じたわれわれの直観の変化をうまく説明することができる。さらに、本稿の後半では、Jason Stanley が提出した、英語における知識動詞の様相分析に対する反論が、ここで提出された日本語知識動詞の様相分析には当てはまらない、ということを示す。

「キーワード」
認識論、認識的文脈主義、日本語知識帰属文、「～ている」、様相分析