

Running Head: Epistemic Comparative Conditionals

Title: Epistemic Comparative Conditionals

Author: Linton Wang

Affiliation: Department of Philosophy, National Chung Cheng University

Address:

Department of Philosophy

National Chung Cheng University

168 University Road

Min-Hsiung, Chia Yi, 621 Taiwan

Phone: +886-5-2720411 ext. 31404

Fax: + 886-5-2721203

Email: [lintonwang@ccu.edu.tw](mailto:lintonwang@ccu.edu.tw)

# Epistemic Comparative Conditionals

**Abstract.** The interest of epistemic comparative conditionals comes from the fact that they represent genuine ‘comparative epistemic relations’ between propositions, situations, evidences, abilities, interests, etc. This paper argues that various types of epistemic comparative conditionals uniformly represent comparative epistemic relations via the comparison of epistemic positions rather than the comparison of epistemic standards. This consequence is considered as a general constraint on a theory of knowledge attribution, and then further used to argue against the contextualist thesis that, in some cases, considering a new counter-possibility can raise the epistemic standard of knowledge attribution. Instead, the paper shows that considering a new counter-possibility can only lower the epistemic position of a putative knower. Moreover, since the comparison, by the nature of conditionals, is free from any commitment to the truth-values of specific knowledge attributions, my conclusion is free from the debate between contextualism and invariantism on whether the truth-value of a knowledge attribution can actually vary with context.

## 1 Introduction

So-called *epistemic comparative conditionals* have the form of, for instance, (1a,b), where P and Q may be different propositions, and A and B may be different situations, evidences, abilities, interests, etc.<sup>1</sup>

- (1) a. If S knows P then S knows Q.
- b. If S knows P with A then S knows P with B.

The interest of epistemic comparative conditionals comes from the fact that they represent genuine ‘comparative epistemic relations’ between propositions, as in (1a), and situations, evidences, abilities, interests, etc., as in (1b). This paper argues that various types of epistemic comparative conditionals in the forms (1a,b) uniformly represent comparative epistemic relations via the comparison of epistemic positions rather than the comparison of

epistemic standards. This consequence is considered as a general constraint on a theory of knowledge attribution, and then further used to argue against the contextualist thesis that, in some cases, considering a new counter-possibility can raise the epistemic standard of knowledge attribution. Instead, the paper shows that considering a new counter-possibility can only lower the epistemic position of a putative knower. Moreover, since the comparison, by the nature of conditionals, is free from any commitment to the truth-values of specific knowledge attributions, my conclusion is free from the debate between contextualism and invariantism on whether the truth-value of a knowledge attribution can actually vary with context.<sup>2</sup>

Concerning the evaluation of epistemic comparative conditionals, I shall adopt two notions from DeRose (1992) and subsequent papers with respect to the evaluation of knowledge attribution: the truth-value of a knowledge attribution *S knows P* is determined by the evaluation of *S's epistemic position* with respect to *P* under a certain *epistemic standard*.<sup>3</sup> Roughly speaking, an epistemic standard is a standard of truly attributing a certain proposition to a putative knower as knowledge, and an epistemic position is the epistemic status of a putative knower with respect to a certain proposition.<sup>4</sup> For a knowledge attribution *S knows P* to be true, metaphorically speaking, it requires the epistemic position of *S* with respect to *p* to be as least as high (strong) as the epistemic standard of truly attributing *p* to the putative knower *S*.

In this paper, the epistemic comparative conditionals under discussion, of the form (1a,b), have the following general 'grammatical' features: there is only one difference between the antecedents and the consequents. For example, the antecedent in (1a) differs from the consequent only on the propositions attributed as knowledge; the antecedent in (1b) differs from the consequent only on the conditions under which knowledge is attributed. The epistemic comparative conditionals are chosen in this way in order to represent the genuine comparative epistemic relations among different factors in knowledge attribution. For conditionals in the form (1a), we can then see the influence of attributed propositions to

epistemic standards and epistemic positions; in conditionals of the form of (1b), we can then see the influence of conditions of knowledge attribution to epistemic standards and epistemic positions.

The paper concentrates on issues related to the above DeRose-style evaluation of epistemic comparative conditionals. To begin with, consider an intuitively true epistemic comparative conditional, in the form of (1a), *If S knows that he has two hands, then S knows that he is not a brain in a vat*. DeRose (1995) takes it that, by keeping the epistemic standard in the two sides of the conditional constant, the conditional indicates that the comparative epistemic relation that the epistemic position of the putative knower S with respect to *S has two hands* is at least as high as his epistemic position with respect to *S is not a brain in a vat*. However, an analysis from a different perspective is also available. We can consider the conditional *If S knows P then S knows Q* as indicating that, by keeping the epistemic positions in the two sides of the conditional constant, the epistemic standard for attributing knowledge of P to S is at least as high as the epistemic standard for attributing S knowledge of Q. Deciding which account is correct arises what I shall call the *problem from the left to the right*.

The problem from the left to the right persists in all other types of comparative conditionals. Consider the epistemic comparative conditionals produced by replacing A and B in (1b) with different situations. For example, let situation 1 be a Gettiered situation for P and situation 2 be a non-Gettiered situation for P.<sup>5</sup> In this setting, the conditional *If S know P in situation 1 then S knows p in situation 2* is intuitively true. DeRose (1992, 1995, 1996) takes it that, with respect to P, S's epistemic position in a non-Gettiered situation 2 is at least as high as S's epistemic position in a Gettiered situation 1. However, Brueckner (1994) takes it that, with respect to P, S is in the same epistemic position in both situation 1 and situation 2, but the epistemic standard in situation 1 is at least as high as the epistemic standard in situation 2, i.e. differences in situations can induce a change in the epistemic standard. This difference between DeRose and Brueckner is still unsettled because neither

they nor their followers provide us a conclusive argument for their proposals.

Contextualist epistemology makes the problem from the left to the right even more perplexing. Concerning a proposition *P*, it may be that a counter-possibility of *P* is raised, or not. For example, we may consider a non-skeptical situation in which no skeptical possibility (the possibility that a skeptical hypothesis, e.g. that I am a brain in a vat, is true) is raised, and a skeptical situation where a skeptical possibility is raised. Contextualists like Cohen, DeRose, and Lewis take it that the epistemic standard of attributing *S knows P* in a skeptical situation is at least as high as the epistemic standard in a non-skeptical situation, while the epistemic position of *S* with respect to *P* stays the same in the two situations. This variation of epistemic standards verifies the conditional *If S knows P in a skeptical situation then S knows P in a non-skeptical situation*. Nonetheless, according to the above analysis of the Gettiered and non-Gettiered situations from DeRose, we might expect the conditional to indicate, instead, that while keeping epistemic standards constant in both skeptical and non-skeptical situations, the epistemic position for *S* with respect to *P* in a non-skeptical situation is at least as high as the epistemic position for *S* with respect to *P* in a skeptical situation. Contextualists do not really exclude the analysis that we might expect, even though they have much to say about why their analysis is the correct one.

This paper begins by considering a proper account for the various type of epistemic comparative conditionals, which is done from section 2 to section 4. Section 2 shows that conditionals in the form of (1a) represent comparative epistemic relations with respect to propositions by epistemic positions. Sections 3 and 4 argue that conditionals in the form of (1b) the comparative epistemic relations with respect to situations, interests, abilities, etc., by epistemic positions. This consequence results in a different route to a criticism of the contextualist thesis that considering new counter-possibilities raises the epistemic standard of knowledge attributions. I argue against this thesis based on a reconsideration of DeRose's bank cases in section 5 and the skeptical cases in section 6.<sup>6</sup> Instead, the paper shows that those cases can be properly accounted for by the fact that considering a new

counter-possibility can lower the epistemic position of a putative knower. In section 7, by exploiting my analysis of the conditionals, I argue against the contextualist criticism of Dretske's analysis of epistemic comparative conditionals, but offer my own perspective.

## 2 Logical Epistemic Comparative Conditionals

Let us name the conditionals that have the form (1a) *logical epistemic comparative conditionals (LECCs)*.<sup>7</sup> Consider (2), a concrete example of LECCs.

(2) If I know that I have two hands, then I know that I am not a brain in a vat.

(2) neither claims I know that I have two hands, nor does it claim I know that I am not a brain in a vat. Instead, (2), if it is true, indicates a 'conditional epistemic relation' between the knowledge attribution of the two propositions *I have two hands* and *I am not a brain in a vat*.<sup>8</sup> Nonetheless, it is not so clear, based on its surface form, what the epistemic comparative conditional (2) is actually comparing. It does not make sense to say that (2) is comparing 'how knowing' I am with respect to my having two hands and my not being a brain in a vat. A detailed investigation of the nature of comparison in (2) will help us to see the conditional epistemic relation between the two propositions.

Intuitively, (2) indicates that knowing that I have two hands is at least as difficult as knowing that I am not a brain in a vat, i.e. knowing that I am not a brain in a vat is no more difficult than knowing that I have two hands. I believe this intuition is strengthened by the observation that the converse *If I know that I am not a brain in vat then I know that I have two hands* seems to be much less plausible than (2). At this point, we are clear that epistemic comparative conditionals clearly indicate the 'difficulty' for a putative knower to know something: knowing the left hand side proposition is at least as difficult as knowing the right hand side proposition. Following this intuition, epistemic comparative conditionals can be understood as measurements of the difficulty of obtaining certain knowledge.

The following consider three possible ways of involving the notions of epistemic standards and epistemic positions to cash out this measurement.

*Type I Account*

First, assuming that the difficulty of obtaining certain knowledge is the same as the epistemic standard of truly attributing the knowledge to a putative knower, i.e. the comparison of difficulty is the comparison of epistemic standards, it follows that the epistemic standard of attributing the left hand side proposition is at least as high as the epistemic standard of attributing the right hand side proposition in (2). Nonetheless, this conclusion is intuitively incorrect, for that the difficulty of obtaining certain knowledge does not have to affect the standard of obtaining the knowledge.

Moreover, given the above analysis of (2), an unwelcome consequence follows: by identifying the comparison of difficulty with the comparison of the epistemic standards, the comparison of epistemic positions in the two sides in the conditional is left underdetermined. According to this type of analysis, epistemic comparative conditionals like (2) indicate only that the epistemic position for a putative knower to know the left hand side knowledge is *required* to be at least as high as the epistemic position of knowing the right hand side knowledge. Nonetheless, there is no clear indication of the *actual* comparison of the epistemic position of the left hand side or the right hand side: it is not indicated whether the epistemic position of the left hand side is actually at least as strong as the epistemic position of the right hand side. What is indicated is that, at most, if my epistemic position with respect to my having two hands can satisfy a certain high epistemic standard, then my epistemic position with respect to my not being a brain in a vat can satisfy a certain low epistemic standard.

As I have shown, if we identify the difficulty of acquiring a certain knowledge as the epistemic standard of attributing the knowledge, we do not keep either the epistemic standard or the epistemic position as constant in our comparison. Since there is only one difference in the two sides of the conditional (2), i.e. the antecedent differs from the conse-

quent only on the attributed propositions, it requires an analysis that takes either epistemic standards or epistemic positions as constant in the two sides of the conditionals in order to make sense of comparative conditionals like (2). What we need to do is to keep one of these two notions as constant on both sides of the conditionals and then see how we can make sense of the ‘difficulty comparison’.

### *Type II Account*

Consider how DeRose adopts this alternative. DeRose proposes to keep the epistemic standard constant in the comparison, i.e. the epistemic standard for attributing two different propositions as knowledge to a putative knower in the conditionals is the same. By this assumption, it follows that the epistemic position for me with respect to that I am not a brain in a vat is at least as high (strong) as the epistemic position for me with respect to my having two hands. To be more general, we can easily conclude that, for (1a), the epistemic position of S for the right hand side proposition is at least as high as the epistemic position of S for the left hand side proposition, i.e. for S to gain an epistemic position to satisfy the epistemic standard of attributing the left hand side proposition is *at least as difficult as* for S to gain an epistemic position to satisfy the epistemic standard of attributing the right hand side proposition.<sup>9</sup> In other words, the conditional in the form (1a) can be paraphrased as (1a-1).

- (1a-1) If S is in an epistemic position to be attributed as knowing P with an epistemic standard ES, then S is in an epistemic position to be attributed as knowing Q with the same epistemic standard ES.

According to (1a-1), it is clear that, for a certain epistemic standard ES, if S with respect to P is in an epistemic position that satisfies ES, then S for Q is in an epistemic position that also satisfies ES. In other words, the epistemic position of S with respect to Q is at least as high as the epistemic position of S with respect to P. By the same epistemic standard of attributing P and Q to S, as shown by (1a-1), DeRose’s analysis of the conditionals follows.

The formulation (1a-1) invites us to consider epistemic positions as an output by a function  $f_{ep}$  that takes subjects and propositions as arguments, which can be formulated as (1a-1-1).

- (1a-1-1)  $EP = f_{ep}(\text{Subject}, \text{Proposition})$ , where EP is a shorthand for epistemic position, and  $f_{ep}$  is an epistemic position assignment function.

The formula (1a-1-1) will be further revised later. At this point, though, it is useful at least to show that we can assign a rank to propositions for their epistemic positions with respect to a subject. This rank of epistemic positions is the basis for the epistemic comparative conditions in the form (1a), i.e. if  $EP = f_{ep}(S, Q) \geq EP = f_{ep}(S, P)$ , it follows that if S knows P then S knows Q.<sup>10</sup> Moreover, the rank of epistemic positions should be respected by any theory of knowledge attribution, for the rank is an objective measurement on the epistemic status of a putative knower with respect to all propositions.<sup>11</sup>

The notion of keeping the same epistemic standard in the comparison of the conditionals should be welcomed by contextualist epistemology in general. For content contextualism, a comparative conditional like (1a) can be analyzed as (1a-1-2) which contains a quantification over contexts.

- (1a-1-2)  $(\forall C)(\text{If } S \text{ knows } P \text{ in } C, \text{ then } S \text{ knows } Q \text{ in } C)$ , where C is a context.

In (1a-1-2), we clearly see that both the left and the right hand side knowledge attributions are evaluated with respect to the same context. And since contextualists further assume that the same context shares the same epistemic standard, it clearly follows that both the left and the right hand side knowledge attributions are evaluated with respect to the same epistemic standard.

Nonetheless, even for invariantists, it is still reasonable to assume that both the left and the right hand side knowledge attribution is evaluated with respect to the same epistemic standard, since, for them, there is only one standard in any case. At this point, we do not

have a way to favor either content contextualism or invariantism simply by the consideration for epistemic comparative conditionals.

DeRose (1992) provides a different perspective on understanding the nature of ‘keeping the epistemic standards as constants.’ DeRose suggests that epistemic standards can be understood as the truth conditions of knowledge attributions, and that epistemic positions can be understood as determining whether the truth conditions are satisfied (by certain subjects with respect to certain propositions). A comparative conditional like (1a) can thus be analyzed as comparing how difficult it is for the truth conditions to be satisfied: satisfying the truth conditions for P is at least as difficult as satisfying the truth conditions for Q.

### *Type III Account*

We now consider a second choice by keeping the epistemic position constant in the comparison. On this view, the epistemic position for a putative knower in both two sides of conditionals are the same and the epistemic position does not vary with respect to propositions.<sup>12</sup> By this choice, we reformulate (1a) as (1a-2).

- (1a-2) If S can be attributed of knowing P with respect to epistemic position EP by satisfying a certain epistemic standard, then S can be attributed of knowing Q with the same epistemic position EP by satisfying a certain standard.

To make sense of (1a-2), we can easily infer that the epistemic standard of attributing S with P is at least as high as the epistemic standard of attributing S with Q. This also makes sense of the difficulty comparison: with the same epistemic position, satisfying the left hand side epistemic standard is at least as difficult as satisfying the epistemic standard for the right hand side.

Is there anything wrong with allowing distinct epistemic standards in two sides of the conditionals? At this moment, we do not have a conclusive argument to argue against this choice. Nonetheless, it is intuitively pretty weird to say that there can be a change of

epistemic standards between the two sides of a conditional. At least, it is not clear whether anyone would endorse this position. It is not a choice for contextualists like DeRose, Lewis, and Cohen, since they do not allow context shift (so there is no change in epistemic standards) between the two sides of conditionals, nor is it a choice for invariantists, since there is only one standard anyway. If we consider an analysis of comparative conditionals that respects both contextualist and invariantist approaches, then allowing the epistemic standard to be distinct in the two sides of the conditionals should be ruled out.

### 3 Situational Epistemic Comparative Conditionals

Before I go on to detail the *situational epistemic comparative conditionals (SECCs)* that replace A and B in (1b) with situations, I first consider an analogy from the comparison of ‘survival chances’ to pump our intuitions.<sup>13</sup>

- (3) a. If Mary can survive, then John can survive.  
b. If Mary can survive in a jungle, then Mary can survive at her home.<sup>14</sup>  
c. If Mary can survive by boxing, then Mary can survive using Chinese Kung-Fu.

The conditionals in (3) are conditionals that compare the difficulty of surviving with respect to different people, different environments, and with use of different self defense skills. For example, (3b) indicates that for Mary to survive in a jungle is at least as difficult as for Mary to survive at home. Take only one standard of survival: keeping alive. This is the standard of comparison for these conditionals. To capture the difficulty of surviving properly, we may appeal to the ‘chance of survival’ as the measurement in comparison: (3b) indicates the chance for Mary to survive at home is at least as high as the chance for Mary to survive in a jungle. Similar reasoning can be applied to (3a) and (3c): (3a) indicates that, in general, the chance of survival for John is at least as high as that for Mary, and (3c) indicates that the chance of survival for Mary if she has the self defense skill Chinese Kung-Fu is at least

as high as Mary if she uses the self defense skill boxing (given that Chinese Kung-Fu is a more dependable self-defense skill than boxing).

The payback of keeping the standard of survival as a constant in the comparison is that, even if we have the intuition that, for Mary, it is more difficult to survive in a jungle than in a city, the intuition, similar to the case for conditionals in the form of (1a), can be cashed out by the idea that the jungle environment is a hostile environment that can decrease Mary's survival chance rather than raising the standard of survival.

Some may suspect that, for example, environment change can change the standard of survival. They may suggest an understanding of (3b) as saying that the standard of surviving in a jungle is at least as high as the standard of surviving at home. This intuition is unfounded for two reasons. First, in our setting of interpretation, we assume that there is only one standard of surviving: keeping alive. There is no way to incorporate environmental change into the change of the standard of survival. In general, for an invariantist's analysis of comparative conditionals, there is no way to incorporate any factors whatsoever, including environment change, into changing the standard of comparison, and all factors should be considered as involving change of the measurement of comparison. Moreover, the invariantist's assumption does not lead to any undesirable consequence.

Second, even if we assume a contextualist analysis of survival that there are various standards of survival, we still have good reason to reject the idea that the environment change can change the standard of comparison: the factors that induce standards of comparison must persist through change in all cases. In other word, a factor that can induce a change of standard must be *insensitive* to other factors. If we take the environment change to induce the change of standard of comparison, then it change the standard of comparison disregarding the subjects. However, this is not the case, for that while it is true that a jungle may set up a higher standard of survival for Mary, a jungle does not set a higher standard of survival for John if he was raised in the jungle or has some special proficiency that allows him to be there easily.

On the other hand, (3b) and (3c) actually provide us with general information about how to increase the survival chance: stay in safer places and learn better self-defense skills. Taking (3a) to correspond to (1a), we can take (3b) to correspond to the situational epistemic comparative conditional concerning how situations (environments) can change the epistemic position of a putative knower with respect to a proposition. We take situational epistemic comparative conditional to have the form (4).

(4) If S knows P in situation 1, then S knows P in situation 2.

(4) differs from (1a) in the following two ways: (a) the proposition for knowledge attribution at the two sides of the conditional is the same, and (b) the knowledge attribution for the same proposition is considered in different situations.

To give an example for (4), consider the following illustration from DeRose (1992): the ‘barn’ cases, originally due to Goldman (1979). Henry is traveling in the country, looking at the scenery around him, and sincerely utters the sentence *It is a barn*.

- **Barn Case N.** Henry saw a barn and claimed that *It is a barn*. All other barn-like things around the barn are also true barns. We call this situation N (for no fake barns).
- **Barn Case F.** Henry saw a barn and claimed that *It is a barn*. However, there are a lot of fake barns around the barn that Henry saw, and what Henry saw is the only true barn. We call this the situation F (for having fake barns).

Intuitively, Henry knows that *It is a barn* in situation N but fails to know that *It is a barn* in situation F. DeRose formulates this intuition as the following seemingly true conditional.

- (4-1) If Henry knows that ‘It is a barn’ in situation F, then Henry knows that ‘It is a barn’ in situation N.

According to DeRose, the conditional (4-1), as in our analysis for (1a), shows that Henry epistemic position with respect to ‘It is a barn’ in situation N is at least as high (strong) as

Henry's position with respect to 'It is a barn' is situation F.<sup>15</sup> This account is already good enough to account for the fact that knowing 'It is a barn' in situation F is at least as difficult as knowing 'It is a barn' in situation N.<sup>16</sup>

Nonetheless, Brueckner (1994) thinks otherwise. He tries to argue that Henry's epistemic position with respect to 'It is a barn' is the same in both situations N and F.

We saw that DeRose thinks that even if Henry changes his location in the manner describes above [the two different "Barn" cases], there is a change in *how good an epistemic position he actually is in* but not in *how good an epistemic position he must be in to count as knowing that a barn is present*. This is why DeRose thinks that content does not change in virtue of Henry's change in location. However, there is a clear sense that in which his epistemic position does *not* change. His evidence is invariant and his powers of discrimination do not change. In neither case is he in a position to rule out the facsimile-alternatives. What does change is how good a position he must be in to count as knowing that a barn is present: in one situation, he is not required to rule out the facsimile-alternative (since it is irrelevant), while in the other situation, he is required to rule it out (since it is relevant). (Brueckner 1994: 125-126)

Brueckner argues for the invariance of epistemic position based on the fact that there is no change in Henry's evidence and his discrimination power. This is a claim that a subject's epistemic position with respect to a certain proposition supervenes on the subject's evidence for the proposition, name it the *principle of evidential supervenience*.<sup>17</sup> Based on this supervenience thesis, Brueckner further tries to argue that there must be a change in epistemic standards from situation N to situation F, i.e. the standard increases, or becomes stricter. Otherwise, there is no way to account for the intuitive truth of (4-1). As a result, the difference between two situations F and N induces different contexts, and so shifts the epistemic standard for the two sides of the conditionals.

Roughly speaking, DeRose's idea can be summarized as saying that the epistemic position of a putative knower with respect to a proposition is determined by both S's justification, arising from the evidence *via* discriminatory power in the barn cases, and the situations (circumstances) that the putative knower is in. On the other hand, Brueckner's idea is that the epistemic position of a putative knower with respect to a proposition is determined solely by S's justification, arising from the evidence *via* discriminatory power in the barn cases. Thus Brueckner's idea calls for the principle of evidential supervenience. In the following, I shall argue that DeRose's idea characterizes the notion of epistemic positions in a better way with respect to the barn cases.

Even though Brueckner's analysis seems to be appealing, it is unacceptable for an invariantist knowledge attribution which does not accept any variation in epistemic standards. A comparison with (3b) can provide us with more intuition about why the Brueckner-style account may be inappropriate. While it is true that for Mary to survive in a jungle is at least as difficult as for Mary to survive at her home (so here we incorporate a change in location), as I argued, it does not follow that there is a change in the standard of surviving. By similar reasoning, we do not need to buy Brueckner's idea that a change of environment can induce a change in the epistemic standard. Of course, this only gives a reasonable doubt to Brueckner's analysis rather than showing that Brueckner's analysis is wrong. On the other hand, there is a clear sense that the epistemic position in case F is lower than the epistemic position in case N: Henry's evidence is more credible in case N than in F. This is similar to the case we already saw where Mary's survival skills were more useful in the big city than in the jungle.

The survival cases also show that the evidential supervenience seems incorrect. The point is that it does not need to be 'part' of Mary in order to change Mary's survival chance. Even though Mary has the same skills and abilities in the two different environments, it does not follow that Mary has the same chance of survival in the two environments, for the jungle may decrease Mary's survival chance simply by being a dangerous environment.

Similarly, there need be no ‘part’ of Henry that changes when Henry’s epistemic position does, for a hostile epistemic environment might just decrease Henry’s epistemic credibility.

After all, I am sympathetic to Brueckner’s idea that the epistemic standard in case F is higher than the case N since Henry is required to distinguish true barns from fake barns in case F. By the requirement to distinguish true barns from fake barns, it actually indicates that it is more difficult to acquire the knowledge in barn case F than in barn case N. Nonetheless, as I have argued previously, the measurement of difficulty does not reflect the measurement of epistemic standards. Instead, we shall see that the measurement indicates a difference in epistemic positions in a more detailed consideration of epistemic positions and epistemic standards in a counterfactual based notion of knowledge attribution.<sup>18</sup>

#### *Positions and Standards in a Counterfactual Based Notion*

Consider the divergence between DeRose-style and Brueckner-style analysis in a counterfactual based notion of knowledge attribution. In a counterfactual based notion of knowledge attribution, we may take the *epistemic consideration*, represented by a set of possible worlds, concerns whether a counter-possibility should be taken into epistemic concern in a certain situation, and the *epistemic variation* concerns the epistemic effect of considering a counter-possibility in a certain situation. In the two Barn Cases, the difference in the relevant alternatives indicates a difference in epistemic consideration. The divergence between DeRose and Brueckner concerns whether the difference in the epistemic consideration induces a difference in epistemic positions or epistemic standards, or not.

The judgment of Brueckner’s analysis relies on whether we should hold the supervenience thesis which takes the epistemic variation induced by epistemic consideration from environment to be variation of epistemic standards. Brueckner’s idea begins with the identification of epistemic considerations and epistemic standards. For the barn cases, the situation F requires us to consider more counter-possibilities than the situation N, so the epistemic standard in situation F is higher than that in situation N. The question, then, we shall ask is: what is the identification of epistemic positions in a counterfactual notion in

order to capture the identity of epistemic positions in two Barn cases?

While it is the case that Henry's evidence is invariant and his powers of discrimination do not change, there does not seem to be a clear way to specify this identification in a counterfactual based notion of knowledge attribution. Some may try to rescue Brueckner's intuition by the following principle of identification: with respect to a proposition  $P$ , if two epistemic subjects agree on their belief about  $P$  in every possible world, then the two subjects have the same epistemic position with respect to  $P$ . Taking this principle of identification, then, assuming that two subjects have the same evidence and the same discriminatory power, it easily follows that they share the same epistemic position for any proposition. In the two barn cases, both the subjects have no evidence change nor ability change, so there is no change of epistemic position.

Even if we have a principle of identification, we still need a principle of difference for epistemic positions. Moreover, the principle of difference is also required to be a principle of comparison for epistemic position. For example, consider a logical epistemic comparative conditional like *If  $S$  knows  $P$  then  $S$  knows  $Q$* . As we argued previously, the truth of the conditional indicates that  $S$ 's epistemic position with respect to  $Q$  is at least as high as with respect to  $P$ . Extending the idea from the previously mentioned identification principle, we can take it that a subject's epistemic position with respect to  $P$  and  $Q$  is identical iff the subject agrees on his belief about  $P$  and  $Q$  in every possible world. This extended principle of identification allows us to infer that, if  $P$  and  $Q$  are different proposition,  $S$  may have different epistemic positions with respect to  $P$  and  $Q$ , but this principle of difference does not help us to *compare*  $P$  and  $Q$ , i.e. the principle of difference does not constitute a principle of comparison.

My proposal, an invariantist proposal, for a DeRose-style analysis is, first, to identify the epistemic variation induced by epistemic considerations from the environment by using the variation of epistemic positions. Second, following the idea in Nozick (1981) (followed by DeRose 1995), I take the epistemic standard as an "epistemic test", or a "checking pro-

cedure”, on epistemic considerations (i.e. sets of possible worlds) in the sense of checking whether a putative knower’s evidence can “track” (in terms of Nozick 1981) or is “sensitive” to (in terms of DeRose 1995) the truth of his belief about P, i.e. in those worlds where P is false, then his evidence leads him to not believe P, but in those worlds where P is true, his evidence leads him to believe P. Given this picture, we can see that there is a difference in epistemic positions in the two Barn cases: (a) since there is a difference in the relevant alternatives in the two cases, there is a difference in epistemic considerations, and (b) it is more difficult to pass the epistemic test in the situation F than in the situation N. So we have a principle of difference based on a principle of comparison of the difficulty of passing the epistemic test. On the other hand, there is no difference in epistemic standards in the two cases, since the same epistemic test is applied.<sup>19</sup>

Our principle of comparison for epistemic positions also provides us a way to account for the comparison in the conditional *If S knows P then S knows Q*. First, since the epistemic test is the same in the two sides of the conditional, the epistemic standard for the two sides of the conditional is the same. To account for the comparison of epistemic positions in the two sides of the conditional, we take it that the epistemic considerations in the two sides are identical, i.e. we consider the same set of counter-possibilities, or relevant alternatives, for the two sides of the conditional. Under this view, the conditional represents that whenever S can pass the epistemic test with proposition P, then S can pass the epistemic test with proposition Q. This indicates that, for S, passing the epistemic test with P is at least as difficult as passing the epistemic test with Q. So, according to our principle of comparison, S’s epistemic position with respect to Q is at least as high as S’s epistemic position with respect to P. This is the result we would expect.

In my proposal for DeRose-style analysis, it is easy to see that it is an invariantist proposal for knowledge attribution, as there is only one epistemic standard. We shall see some contextualist proposal for the DeRose-style analysis of the Barn Cases in section 5, but I shall show that my proposal can account for epistemic comparative conditionals in a

more convincing way.

As a summary, if we buy the DeRose-style story concerning situational epistemic comparative conditionals, we can actually revise (1a-1-1) with (1a-1-1-1).

- (1a-1-1-1)  $EP = f_{ep}(\text{Subject, Proposition, Situation})$ , where EP is a shorthand for epistemic position, and  $f_{ep}$  is an epistemic position assignment function.

In (1a-1-1-1), epistemic position is functionally determined by one more variable: the variable over situations.<sup>20</sup>

The difference between (1a-1-1) and (1a-1-1-1) indicates the difference in our analysis of LECCs and SECCs. In the discussion of SECCs (e.g. Barn cases), since the antecedents and consequents differ on situations, the influence of situations on epistemic positions is taken into consideration. And the main issue on the disagreement between DeRose and Brueckner concerns whether situations are factors of affecting epistemic positions or factors of affecting epistemic standards. On the other hand, in the discussion of LECCs, the difference between antecedents and consequents is on propositions but not on situations, so the influence of situations is not taken into consideration. But this does not mean that we leave the situation as an irrelevant factor in the evaluation of epistemic positions in LECCs. Instead, since the situations in antecedents and consequents are assumed to be constants in LECCs, the there is no situational difference to affect epistemic positions or epistemic standards, we can focus on the influence of propositions.

## 4 The Variety of Epistemic Comparative Conditionals

So far I have analyzed two types of epistemic comparative conditionals in detail; the simple conclusion was that they both represent the comparison of epistemic positions rather than epistemic standards. My proposal is to extend the result to a general form: all types of epistemic comparative conditionals represent the comparison of epistemic positions rather than the comparison of epistemic standards, and all epistemic comparative conditionals in

the forms of (1a,b) can be account with only one epistemic standard so that we do not need a contextualist analysis of *know* to account for epistemic comparative conditionals. In this section we shall consider how this general proposal can be applied to various other types of epistemic comparative conditionals, and, in section 5 and 6, I shall consider some possible counter-examples for my proposal from contextualist theories of knowledge attribution.

There are various other epistemic comparative conditionals then the two types we discussed previously. For example, corresponding to (3c), we can consider epistemic comparative conditionals that compare how a putative knower's abilities can change the epistemic position of the knower.<sup>21</sup> For example, consider two kinds of visual ability: one is the standard vision that is just like that of an ordinary human, but one is super-vision which can see through things. Using super-vision, one can see through 'barns' to distinguish true barns from fake barns. It naturally follows that the following comparative conditional is true: if Henry knows that 'It is a barn' by using standard vision, then Henry knows that 'It is a barn' by using super-vision.

One last type I shall consider is the *evidential epistemic comparative conditionals* that has the form (5). This type is not previously mentioned in the literature.

(5) If S knows P with evidence 1, then S knows P with evidence 2.

In its abstract setting, the comparison in (5) shows that evidence 2 can increase S's epistemic position with respect to P at least as much as evidence 1. This type of epistemic comparative conditionals will be important in our discussion on the denial of some obviously true epistemic comparative conditionals in section 7.<sup>22</sup>

With the evidential epistemic comparative conditionals, (1a-1-1-1) can be reformulated as (1a-1-1-1-1).<sup>23</sup>

- (1a-1-1-1-1) EP= $f_{ep}$ (Subject, Proposition, Situation, Evidence), where EP is a shorthand for epistemic position, and  $f_{ep}$  is an epistemic position assignment function.

We can go on to put new parameters into the function  $f_{ep}$  by considering more types of epistemic comparative conditionals, but I would like to stop here.<sup>24</sup>

To put things together, the various types of epistemic comparative conditionals discussed in so far provide us a way to reformulate the logical epistemic comparative conditional (1a), concerning situations and evidences, as the contextualist counterpart in (6a) and the invariantist counterpart in (6b).

- (6) a.  $(\forall \text{ evidence } Ev)(\forall \text{ situation } Si)(\forall \text{ context } C)$  (If S knows P in Si with Ev in C, then S knows Q in Si with Ev in C).
- b.  $(\forall \text{ evidence } Ev)(\forall \text{ situation } Si)$ (If S knows P in Si with Ev in C, then S knows Q in Si with Ev in C).

To find a counterpart in our survival chance comparison, we consider the invariantist expansion of (7a) as (7b).

- (7) a. If John can survive, then Mary can survive.
- b.  $(\forall \text{ Situation } Si)(\forall \text{ Skill } Sk)$ (If John can survive in Si with Sk, the Mary can survive in Si with Sk)

We are now in a better position to make sense of the two types of factors suggested in DeRose (1992) that can affect the epistemic standards and epistemic positions: (a) the *subject factors*, which affect “*how good an epistemic position the putative subject actually is in*” (DeRose 1992: 922), and (b) the *attributor factors*, which affect “*how good an epistemic position the putative knower must be in to count as knowing*” (DeRose 1992: 921). We see that the situations that a putative knower is in, the evidence that a putative knower possesses, and the abilities that a putative knower has are in the group of subject factors. Nonetheless, at this point, I have not seen a good case for attributor factors.

## 5 Counter-Examples (I): Bank Cases

My proposal is that the epistemic comparative conditionals in the forms of (1a,b) represent genuine comparisons of epistemic positions of a putative knower with respect to various parameters. We can now turn this representation of epistemic comparative relations into a test to check the cases claimed to represent variations of epistemic standards. We consider the bank cases introduced by DeRose in this section and consider the skeptical cases in the next section.

DeRose (1992) considers a comparison of two bank cases to introduce how context change can change the epistemic standard of knowledge attribution. The scenarios are briefly described as follows.

- **Bank Case A.** On a Friday afternoon, I am considering whether bank X will open on Saturday for me to deposit paychecks. I believe that X will open on Saturday because I saw it open on Saturday two weeks ago, disregarding that most banks are not open on Saturday.
- **Bank Case B.** Again, I am considering whether bank X will open on Saturday for me to deposit paychecks. I believe that X will open on Saturday because I saw it open on Saturday two weeks ago, disregarding that most banks are not open on Saturday. Nonetheless, my wife noted that it is very important to have the paychecks deposited before Monday, and, moreover, that banks can change their hours during the past two weeks. Consequently, I became unsure about whether bank X will actually open on Saturday.

Assume that the bank X will open on Saturday in both cases. It is intuitively true that I know that bank X will open on Saturday in Bank Case A, but instead, that I do not know that bank X will open on Saturday in Case B. This intuition validates the following conditional.

- (8) If I know that bank X will open on Saturday in Bank case B, then I know that bank X will open on Saturday in Bank case A.

DeRose (1992) suggests that the attribution difference in two Bank cases was induced by my wife's concern, which introduces a new counter-possibility. I agree. Nonetheless, DeRose further suggests that the truth-value difference comes from a raising of the epistemic standard of knowledge attribution by the introduced counter-possibility. I do not agree.

A straightforward puzzle follows from DeRose's suggestion that there is a difference in the epistemic standards in the two Bank Cases. This position does not seem to be compatible with his analysis of situational epistemic comparative conditionals concerning the Barn Cases. According to DeRose's analysis for the Barn Cases, a conditional in the form of (8) represents that the epistemic position for me in the bank case A is at least as high as the epistemic position for me in the bank case B. In other words, instead of raising the epistemic standard, we might expect that the introduction of the counter-possibility in the Bank case B should play the role of lowering the epistemic position for me with respect to the proposition that Bank X will open on Saturday.

In DeRose (1992), the reason that DeRose takes Bank case B to raise the epistemic standard relies only on the fact that there is a mention and a consideration of the counter-possibility that Bank X might change its schedule.

Second, there is a *mentioning* of a *possibility* [my italics]. In case B my wife raises the possibility that the bank may have changed its hours in the last two weeks. One might think that if this possibility has been mentioned, I cannot truly claim to know that the bank will be opened on Saturday on the grounds that two weeks ago it was open on Saturday unless I can rule out the possibility that the bank's hours have changed since then. ... Third, there is the *consideration* of a possibility. Since my wife raised the possibility of the bank changing its hours in Case B, I have the possibility in mind when I utter my sentence. Perhaps, since I am considering this possibility, I must be able to rule it out in order to truthfully claim to know that the bank will be open on Saturday.

(DeRose 1992: 915)

On DeRose's interpretation, merely mentioning and considering that the bank may change hours can induce a change of the epistemic standard because I am required to rule out the counter-possibility. The question I shall ask is this: why does the requirement for ruling out the new counter-possibility simply raise the epistemic standard?

Again, I shall emphasize two issues concerning the introduction of counter-possibilities. One is the question of when and how to take a counter-possibility into epistemic consideration. The other concerns the epistemic effect of taking a counter-possibility into epistemic consideration. My concern is about the second issue. Assume DeRose is correct on that mentioning a counter-possibility automatically induces taking the counter-possibility into epistemic consideration. But DeRose (1992) does not give us a reason why the consideration raises the epistemic standard rather than lowering the epistemic position. In the following, I shall consider three ways to argue for the variance of epistemic standards and the invariance of epistemic positions in two Bank cases. I shall show that none of them are convincing.

### *The First Way*

Consider the first way from DeRose (2005). DeRose (2005) does consider the alternative explanation that the consideration of the counter-possibility in the Bank case B lowers the epistemic position of a putative knower.<sup>25</sup> He takes it that this alternative explanation may be available for the first-person formulation of the Bank cases. Nonetheless, he takes it that the alternative explanation is unavailable from the third-person formulation, by which an attributor may assert something like *He knows that the bank will open on Saturday* in the two bank cases.

In fact, our subject's situation is identical in our two third person cases except for the difference that far away from here, different conversations, that she is and will remain oblivious of, are taking place about her. So, to press the first

worry, an invariantist must maintain that how strongly our subject is positioned with respect to the bank's being open on Saturday is substantially affected by such factors as what kind of far-away conversation is taking place about the subject. This's quite implausible on its face. (DeRose 2005: 185)

In the above paragraph, DeRose argues that a third person A's consideration of a new counter-possibility does not affect a putative knower S's epistemic position for the reason that the new counter-possibility is raised by a conversation that is far away from the putative knower and the putative knower is and will remain oblivious of it. For this reason, DeRose concludes that it is quite implausible that the raised new counter-possibility can affect the epistemic position of the putative knower with respect to the bank's opening. Nonetheless, I find the reason not convincing: we can apply the same reasoning to show that situations cannot affect epistemic positions. For example, in the two Barn cases, the putative knower is and also will remain oblivious of the actual situations. However, as I argued in section 3, this 'obliviousness' to actual situations does not make the situations fail to affect the epistemic position of the putative knower. If DeRose takes situations to affect epistemic position, he should consistently allow a third person A's consideration to affect epistemic positions. Unless DeRose can identify a 'significant' difference between obliviousness to conversations and obliviousness to situations, his argument is not well-founded.

We may consider DeRose's objection to the invariantist analysis of Bank Cases based on the above paragraph to be summarized as follows. First, DeRose assumes that the epistemic positions of a putative knower S with respect to a proposition are determined by evidence and situations. Second, the introduction of a new counter-possibility from a third person A's consideration neither has an effect on evidence nor on situations. Based on these two assumptions, the introduction of a new counter-possibility from a third person A does not affect the epistemic position of the putative knower S with respect to a proposition.

If it is actually the case that epistemic positions are determined only by evidence and situations, then there is no way that a third person A's consideration can affect a putative

knower S's epistemic position with respect to a proposition. And also, if one assumes (believes) that epistemic positions are determined by evidence and situations, then he will find the idea that a third person A's consideration can affect (lower) a putative knower S's epistemic position with respect to a proposition to be very implausible. Nonetheless, whether epistemic positions are solely determined by evidence and situations is the issue under discussion.

We can trace DeRose's insistence on the identification of epistemic positions under different third person considerations in the two Bank Cases back to the distinction of the subject and attributor factors in DeRose (1992), where the former is identified as affecting the epistemic position that a putative knower is *actually* in and the latter is identified as the epistemic position that the subject *has to be* in order to be attributed with certain knowledge. While it is not clear whether the effect of conversation in a context is a subject or attributor factor in the first person case, it is clear that, from DeRose's point of view, the effect of conversation is clearly a attributor factor, in that a putative knower cannot have anything to do with it. By DeRose's assumption that only subject factors can affect epistemic position, DeRose concludes that, in the third person cases, it is clear that there is no change in epistemic positions.

However, the assumption that only the subject factors can affect epistemic position is an unjustified assumption. As far as I know, DeRose does not support it explicitly. Moreover, it is not clear whether certain factors can be considered as subject or attributor factors. Returning to the Barn Cases, it is not clear whether the physical environment is a subject factor or an attributor factor. We can say that the physical environment is a attributor factor, for a putative knower cannot do anything with it. On the other hand, we can also say that the physical environment is also a subject factor, since attributors also have nothing to do with it. If we adopt DeRose's distinctions and assumptions, there is no clear reason way we should prefer the DeRose-style analysis for Bank cases.

My suggestion, according to my previous proposal, is that the consideration of the

counter-possibility in Bank Case B lowers the epistemic position of the putative knower by discrediting the putative knower's evidence, because the putative knower's evidence cannot exclude the new counter-possibility. As I suggest in section 3, I take the epistemic standard as an epistemic test on epistemic considerations in the sense of checking whether a putative knower's evidence can "track" or is "sensitive" to the truth of his belief about P. On this picture, a new counter-possibility introduced by a third person A's consideration can lower a putative knower S's epistemic position with respect to a proposition P if the putative knower fails to track the truth of P in the new counter-possibility. The way that a third person A's consideration matters to epistemic positions may be simply characterized as follows: *whoever (including the putative knower S and the third person A) takes the new counter-possibility introduced by A's consideration into consideration also takes S's evidence to be discredited if the evidence fails to track the truth of P in the new counter-possibility.*

Compare again with the Barn Cases. The putative knower's epistemic position in Barn Case F is lower than the epistemic position in Barn Case N since the putative knower's evidence and discrimination power cannot exclude the relevant counter-possibility in Barn Case F. Similar to the hostility of the environment in Barn Case F, a hostile attributor can decrease the epistemic credibility of a subject by raising a counter-possibility, so lowering the epistemic position of a putative knower. There may be intuitions concerning whether a subject or an attributor can have anything to do with the counter-possibility, but the intuition is too subtle to capture, as far as I can see. And even if we can capture the intuition in a solid way, we still have no reason to associate these factors with the variation of epistemic standards.<sup>26</sup>

I would also like to emphasize that there is a difference concerning the role of evidence and situations in their effect on epistemic positions. The effect on epistemic positions from a third person's consideration is of the same type as that of situations. In terms of the difference concerning epistemic consideration and epistemic variation, the situational difference

in the two Barn cases induce a difference in epistemic considerations and then induces the epistemic variation on epistemic positions; on the other hand, a difference in evidence does not affect the epistemic considerations but only affects epistemic variation on epistemic positions. For example, in case that a putative knower has super-vision to discriminate true barns from fake barns, he can know “it is a barn” even in the Barn case F but the supervision has not effect on the relevant worlds needed to be taken into epistemic consideration. Now, with a conversation from a third person perspective, a new counter-possibility is introduced, so there is a difference in epistemic considerations, and so a difference in epistemic variation is induced. In case that new counter-possibilities introduced by situations can affect epistemic position, the same idea can be applied to show that a third person’s consideration can affect epistemic position.

One may still ask why it seems to be so implausible that a third person A’s consideration can affect a putative knower S’s epistemic position. I consider this to arise from the following intuition. One may have an intuition that the epistemic position of S should only be affected by the factors for which S is responsible. One may further take it that S is responsible for the evidence he has, and one may also take it that a putative knower S is not responsible for considerations from a third person A. I can agree that a putative knower S is not responsible for a third person A’s consideration. But what is unsatisfying is the following: if a putative knower is not responsible for a third person’s consideration, why should he be responsible to situations? Why are situations relevant to a the evaluation of a putative knower S’s epistemic position, but a third person A’s consideration is irrelevant? The question raises the essential issue under discussion. Moreover, even if S is not responsible for a third person A’s consideration, whoever takes A’s consideration into his consideration can have a point of view on S’s evidence, and thus affect his knowledge attribution to S.

### *The Second Way*

The second way comes from Cohen (1998) and Heller (1999). Cohen (1998) may suggest that my analysis fails to distinguish a substantial difference between Barn Case F and

Bank Case B: the relevant counter-possibility in Barn Case F is taken into consideration in every conversational context (subject sensitive but conversationally (speaker) insensitive), but the counter-possibility in Bank Case B is not a relevant counter-possibility and is considered only because of the conversational context (subject insensitive but conversationally (speaker) sensitive).<sup>27</sup> This difference may turn out to be the reason that the counter-possibility in Bank case B raises the epistemic standard; if so, contextualism can account for this.<sup>28</sup>

I agree that there is a difference in the consideration of counter-possibility in Barn Case F and Bank Case N: one consideration comes from the ‘physical’ situation that a subject is in but the other comes from the ‘conversational’ situation that a subject is in. Nonetheless, this only indicates that there is a difference on when or how the counter-possibility is taken into epistemic consideration; it does not follow that the consideration can induce different types of epistemic effects. Consider a possible explanation: the difference comes from the fact that the counter-possibility in Bank case B is more remote from the actual world than the counter-possibility in the Barn case N. Adopting this explanation, it is clear that the difference in Barn case F and Bank case B is only on when or how to take the counter-possibility into consideration rather than the epistemic effect of taking the counter-possibility into consideration.

A possible objection to my analysis may come from the fine distinction of epistemic standards and epistemic positions in Heller (1999), where epistemic positions are called *epistemic conditions*.<sup>29</sup> Heller takes epistemic positions to be represented by an ordering of worlds by their similarity to the actual world, but epistemic standards to be boundaries of including particular worlds into epistemic considerations. Taking this definition of epistemic positions and epistemic standards, it follows that there is a change of epistemic positions in the two Barn Cases in that the difference in the two Barn cases, the difference in actuality, induces a difference in the ordering of possible worlds. But there is no change of epistemic positions in the two Bank Cases for that the difference in the Bank

Cases does not induce a change in the ordering of possible worlds, i.e. there is no change of actuality. On the other hand, Heller insists that the truth-value difference in the Barn Cases is induced by the ordering of possible worlds without changing epistemic standards, but the truth value difference in the two Bank cases is induced by the change of epistemic standards, *qua* changing the worlds under epistemic consideration without appealing to a change of world ordering.<sup>30</sup>

I take Heller's definition of epistemic standards and epistemic positions to be inadequate. Consider his notion of epistemic positions first. As said earlier, Heller takes it that "The subject's epistemic position is a function of which world is actual and which worlds she believes *p* in, and there is nothing relative about those. (Heller 1999: 127)." Taking this assumption, it follows a conclusion that both invariantists and contextualists do not prefer: the epistemic position of a putative knower is the same with respect to any proposition in a chosen actual world. So a putative knower's epistemic position with respect to that he has two hands and that he is not a brain in a vat is the same. This is intuitively unacceptable. Moreover, as a result, the epistemic comparative conditional *If S knows that he has two hands then S knows that he is not a brain in a vat* can be true only in cases that there is a shift of epistemic standards in the epistemic evaluation of the antecedent and the consequent. This shift of epistemic standard is inappropriate for both invariantists or contextualists.

Now consider Heller's notion of epistemic standards. His notions of epistemic standards make some sense in the Bank Cases: two different standards are represented by two different boundaries of including possible worlds under the same world ordering into epistemic considerations. However, in what sense we can say that two Barn Cases, by his notion of epistemic standards, on which two different world ordering and two different boundaries of including possible worlds are under consideration, share the *same* epistemic standard? The comparison of 'boundaries' only makes sense if the boundaries are compared under the same world ordering. It is inappropriate to take boundaries as a measurement of epistemic

standards in two different world orderings.

I take the main problem in Heller's notion to be that the actuality and the world ordering has no epistemic characteristics by 'themselves'. The epistemic characteristics arise from a putative knower S's belief about a certain proposition with respect to evidence, situations, abilities, interests, etc. Let us make the issue simpler: *whatever makes a change of possible worlds under an epistemic consideration induces a change of a subject's epistemic position.* In the Barn Cases, there is a change of physical situations so that there is a change of possible world under epistemic consideration induced by the change of world ordering. In bank cases, there is a change of conversational situations so that there is a change of possible worlds under epistemic consideration.<sup>31</sup> There is no change of epistemic standards when there is a change of possible worlds under epistemic consideration: *the only epistemic standard is just a test on counter-possibilities under epistemic consideration.*

### *The Third Way*

The third way to argue for the change of epistemic standards comes from the so called subject-sensitive invariantism (SSI) (cf. Hawthorne 2004 and Stanley 2005). SSI people and contextualists agree that there are factors to change epistemic standard of knowledge attribution, but SSI insists that there is no need to appeal to content variation for the change of epistemic standards. Take Stanley (2005) as an example for the SSI. Stanley (2005) distinguishes the epistemically relevant possibilities from the practically relevant possibilities, to reflect the difference between the Barn Cases and the Bank Cases. Stanley claims that the different considerations of counter-possibilities in the Barn Cases reflect the difference in epistemically relevant possibilities, but the difference in the Bank Cases reflects the difference in practically relevant possibilities that arises from the consideration of practical interests. Stanley takes the difference in practical possibility to reflect difference in epistemic standards, but without difference in the content of knowledge attribution. Again, assuming that I agree that practical interests can raise a difference in the epistemic consideration, there is still no reason to take the consideration arising from practical interests to

change epistemic standards. The difference raised by practical interests can be considered as leading to a difference in epistemic positions without any difficulty.<sup>32</sup>

## 6 Counter-Examples (II): Skeptical Cases

While the contextualists DeRose, Cohen, and Lewis argue that a conversation including a skeptical hypothesis (e.g. 'I am a brain in a vat') radically raises the epistemic standard of knowledge attribution so that a putative knower fails to know the negation of the skeptical hypothesis, Neta (2002, 2003) holds a different view: a skeptical hypothesis actually lowers the epistemic position of a putative knower, *qua* discrediting the evidence of the putative knower, so that the putative knower fails to know the negation of skeptical hypothesis according to a commonsense (Moorean) epistemic standard of knowledge attribution.

Take a possible world in which a skeptical hypothesis is true to be a *skeptical possibility*. Following what we have seen in the previous sections, we still need to distinguish two issues concerning skeptical possibilities: when and how we should take a skeptical possibility into epistemic consideration and what the epistemic effect is of taking a skeptical possibility into epistemic consideration. Invariantism and contextualism differ on both of these two issues. Invariantism either takes, for a Skeptic, that a skeptical possibility must be considered in every context, or, takes, for a Moorean, that a skeptical possibility must not be considered in any context, but contextualism takes that a skeptical possibility should only be considered in some specific contexts. I shall consider only the second issue, which is reflected by the divergent account of the seemingly true epistemic comparative conditional (9).

- (9) If I know that I am not a brain in brain concerning the skeptical possibility, then I know that I am not a brain in a vat without concerning the skeptical possibility.

For the truth of (9), invariantism has it that a skeptical possibility lowers the epistemic position of a putative knower, but contextualism takes it that the consideration of a skeptical

possibility raises the epistemic standard of knowledge attribution.

According to Cohen (1988, 1998, 1999), raising a skeptical hypothesis makes the skeptical world, where the skeptical hypothesis is true, salient so that the world becomes a non-excluded relevant alternative, and as a result we fail to know the negation of the skeptical hypothesis; in Lewis (1996), raising a skeptical hypothesis is understood as extending the considered possible worlds by the *rule of attention* so that the skeptical world becomes an un-eliminated possible world according to a putative knower's evidence, so that, again, we fail to know the negation of the skeptical hypothesis;<sup>33</sup> in DeRose (1995), raising a skeptical hypothesis serves to extend the sphere of worlds of consideration so that the belief of the denial of the skeptical hypothesis becomes 'insensitive' and we fail to know the negation of the skeptical hypothesis.<sup>34</sup> Disregarding the divergent nature of these mechanisms, it is clear that none of these mechanism shows that a skeptical possibility can change the truth of knowledge attribution simply by raising the epistemic standard of knowledge attribution. These mechanisms, at best, show how we take skeptical possibilities into epistemic consideration.

Now we consider Neta (2002, 2003) as an alternative exposition on the epistemic role of skeptical hypotheses. Neta argues that raising a skeptical hypothesis discredits our evidence by showing that our evidence is misleading. To show this, Neta argues that, by raising a skeptical hypothesis, a knowledge evaluator raises an un-eliminated counter-possibility with respect to a putative knower for P in the sense that (a) the skeptical hypothesis implies that S does not know P, and (b) the hypothesis and the proposition that S knows P are introspectively indistinguishable for S. This idea is formulated as the principle R.

(R) When one raise an hypothesis H that is an uneliminated counter-possibility with respect to S's knowing that p at t, one restricts what counts in one's context of appraisal as S's body of evidence at t to just those mental states that S has, and would have, at t whether or not H is true. (Neta 2002: 674)

With the principle R, we can see that raising a skeptical hypothesis can reduce the epistemic

position of a putative knower, and so leads the putative knower to fail to know.

I think the general idea in Neta's account goes in the correct direction. We can consider how skeptical arguments challenge evidence by providing skeptical possibilities from a different perspective. Consider how a lawyer challenges the evidence of a witness. Suppose that John claims that he knows that his neighbor killed his dog because he saw that his neighbor did that. The lawyer of his neighbor tries to show the contrary. The lawyer questions John: could it be possible that a man disguising like your neighbor and walking like your neighbor actually killed your dog in order to set up your neighbor? John says that it is possible. Then the lawyer concludes that John does not actually have evidence to *prove* that his neighbor killed his dog.

Again, like the Bank Cases, the central issue comes back to whether the consideration of a skeptical possibility actually lowers the epistemic position of a putative knower or raises the epistemic standard of knowledge attribution. We can easily reconstruct the three ways, mentioned in section 5, to favor that the epistemic standard is raised by considering the counter-possibility in the Bank case B to three ways that the epistemic standard is raised by considering a skeptical possibility, but we can also easily show that these three ways are not convincing enough to show that the epistemic standard is raised by considering a skeptical possibility.

Finally, consider how a relevant alternative theory takes a skeptical possibility. In general, relevant alternative theories take that a skeptical possibility is not a relevant counter-possibility for common propositions like that I have two hands, even though they do not provide a clear and convincing proposals to account for the relevance criterion (cf. Stine 1976, Goldman 1979, and Dretske 1970). The key question is why they think that the skeptical possibility should not be taken into consideration: we would fail to know P if our evidence cannot exclude the skeptical possibility but we still believe in P. According to this consideration, the actual effect of a skeptical possibility comes from its ability to weaken our evidence for a proposition P, so lowering the epistemic position for a putative knower

with respect to P.

## 7 Denying Epistemic Comparative Conditionals

In the literature, some people deny some intuitively true epistemic comparative conditionals. For example, assume that the truth of ‘I know that I have two hands implies that I am not a brain in a vat.’ Even though a lot of philosophers share the intuition that it follows that if I know that I have two hands then I know that I am not a brain in a vat, some people, for example, Dretske (1970), (2005), Nozick (1981), etc., deny the inference. I shall briefly indicate that contextualists respond to the denial in an inappropriate way, and the consideration of the epistemic comparative conditionals in this paper can shed us some light and provides us a better way to understand the denial.

Contextualists like Cohen (1988) and Lewis (1996) argue that Dretske’s arguments against the truth of some intuitively true epistemic comparative conditionals are based on shifting contexts of knowledge attribution in the two sides of the comparative conditions. Consider the following from Lewis (1996).

What Dretske says is close to right, but not quite right. ... Implication preserves truth – that is, it preserves truth in any given, fixed context. But if we switch contexts midway, all bets are off. ... Dretske gets the phenomenon right, and I think he gets the diagnosis of skepticism right; it is just that he misclassifies what he sees. (Lewis 1996: 513)

Nonetheless, there are good reasons for Dretske to reject the contextualist accusation that he shifts contexts in his argument against the conditionals. According to the contextualist, shifting contexts must induce shifting epistemic standards, but there cannot be shifting of epistemic standards for Dretske, since he is not a contextualist and so there is only one standard of knowledge for him. Contextualists are obviously mistaken in understanding Dretske from their contextualist perspective.

I take the intuition of the contextualists that there is a context shift in Dretske's analysis of epistemic comparative conditional to come from their belief that there is a shift of epistemic consideration for the two sides of conditional in the form of (1a) in Dretske's analysis. For example, according to Dretske, concerning the knowledge attribution of that I have two hands, there is no need to consider the skeptical possibility that I am a brain in a vat, since it is not a relevant alternative; in case of attributing that I am not a brain in a vat, it is required to consider the skeptical possibility that I am a brain in a vat, since it is a relevant alternative. I am not going to argue whether Dretske's attribution of relevant alternatives is correct. It is an issue concerning when and how a counter-possibility should be taken into epistemic consideration. My point is only that, as I argued previously, the shift of epistemic consideration does not arise a change of epistemic standards, but only induces a change of epistemic positions. Taking this route, Lewis' objection to Dretske's denial is based on a wrong characterization of Dretske's argument and the effect of changing epistemic consideration.<sup>35</sup>

## 8 Concluding Remarks

The conclusion of the previous sections is simple: the measurement of comparison in epistemic comparative conditionals is the epistemic position of putative knowers with respect to propositions, situations, evidences, abilities, etc. On the other hand, the epistemic standard of knowledge attribution is an invariant: a true knowledge attribution relies on checking counter-possibilities under epistemic consideration. As one might expect, we can propose what I call *Hybrid Invariantism*, according to which (a) the variation of knowledge attribution comes from the variation of epistemic considerations, but (b) the variation of epistemic considerations results in the variation of epistemic positions. For hybrid invariantism, there is no need to exploit the variation of epistemic standards to account for the truth-value variations of knowledge attributions in different contexts.

My philosophy colleagues, as well as many people with or without philosophical sophistication, agree that it is intuitively correct to say that skepticism raises the epistemic standard of knowledge attribution too high for us to obtain any knowledge. This intuition favors a contextualist understanding of skepticism. They also agree with the intuition that skepticism makes knowledge so difficult for us to obtain so that real knowledge is impossible. Moreover, they also take the second intuition to be more robust and explains the first intuition. This paper shows that the explanation, which leads to the intuitive appeal of contextualism, is wrong. Instead, this paper shows that the second intuition can be explained by the variation of epistemic positions.

Contextualism and invariantism differ in at least two aspects: (a) when and how a counter-possibility should be taken into epistemic consideration, and (b) what the epistemic variation is that a counter-possibility introduces. The consideration of various epistemic comparative conditionals indicates a clear refutation of contextualism, as well as SSI, by answering issue (b): a counter-possibility lowers the epistemic position of a putative knower. The consideration of epistemic comparative conditionals does not account for (a) since the conditional only exhibits the conditional epistemic relations between propositions, situations, evidences, and other epistemic factors.

Ludlow (2005) lists a number of terms from a Google search that can associate with the variation of epistemic standards in knowledge attributions, e.g. *objective standards*, *earthly standards*, *science standards*, *academic standards*. My suggestion for a correct epistemic usage is to replace the word *standard* by *consideration* in the above examples. The replacement leads to an epistemic understanding that the considerations raised in this paper lead us to prefer.

## Notes

<sup>1</sup>To avoid unnecessary complication, I shall only talk about epistemic comparative conditionals in the form of indicative conditionals. As far as I know, no one in the literature touches on the issues concerning

epistemic comparative conditionals that have the form of subjunctive conditionals.

<sup>2</sup>The distinction of contextualism and invariantism basically follows Unger (1984). In the discussion of contextualist epistemology, this paper refers to Cohen (1987), (1988), (1998), (1999), (2001), DeRose (1992), (1995), (1996), (1999), (2002), (2004), (2005), and Lewis (1979), (1996).

<sup>3</sup>DeRose (1992), (1995), (1996), (1999), (2002), (2004), and (2005).

<sup>4</sup>In this paper, I shall further extend the notion of epistemic positions to the epistemic status of a putative knower with respect to situations, abilities, interests, etc. Sometimes, when no confusion is possible, I shall simply use ‘the epistemic position of a putative knower’ instead of ‘the epistemic position of a putative knower with respect to propositions, situations, abilities, or interests, etc.’

<sup>5</sup>By a *Gettiered situation* I mean a situation described in Gettier (1963) in which a putative knower has a justified true belief of P but fails to know P. In Gettier (1963), this kind of situations is used to argue against the thesis that a putative knower knows P can be identified as the putative knower to have a justified true belief about P.

<sup>6</sup>In general, there are two ways to argue against contextualist epistemology. One way, from the semantic and linguistic perspective, is to argue that the content of *know* is not context sensitive (cf. Cappelen & Lepore 2004 and Stanley 2004). The other is to show that truth-value variation of the same knowledge attribution in different contexts does not arise from the variation of epistemic standards (cf. Williamson 2005 and Wright 2005). My argument against contextualism will be shown to be different from these two approaches.

<sup>7</sup>I call them this because conditionals in the form of (1a) can be considered to be validated if S knows that if P then Q. Whether the validation works as expected is an issue concerning *closure* (cf. Dretske 2005 and Hawthorne 2005). The issues about closure are not my concern in this paper.

<sup>8</sup>This paper does not take it for granted that (2) is actually true or acceptable, nor does the paper assume an account for the truth of (2), even though the author has the intuition that (2) is true. The two issues do not concern us here.

<sup>9</sup>DeRose (1995, section 10) suggests that LECCs in the form of *if S knows P then S knows Q* can be understood as saying that S’s epistemic position with respect to Q is at least as strong as S’s epistemic position with respect to P just like that the comparative conditional *if John is tall then Bill is tall* can be understood as saying that Bill is at least as tall as John. This analogy is inappropriate for people who do not share the same intuition that the truth of *if John is tall then Bill is tall* implies that Bill is at least as tall as John. For example, in case that Bill is indistinguishably shorter than John, e.g. John’s height is 190 cm and Bill’s height is 189.999999 cm, one can agree with the truth of that if John is tall then Bill is tall but he does not agree with the truth of that Bill is at least as tall as John, because Bill is not at least as tall as John. On the other hand, assume that John’s height is 190 cm and Bill’s height is 185 cm. When one takes the standard for someone to

be tall to be simply for him to be over 180 cm, it is true that if John is tall then Bill is tall, but it is false that Bill is at least as tall as John. This is not to argue with DeRose's intuition here. This is just trying to indicate that the semantic or pragmatic background for DeRose's intuition is not clearly spelled out in DeRose (1995).

<sup>10</sup>The closure argument can be considered as a claim that logical entailment can determine the rank of epistemic positions for a putative knower with respect to propositions.

<sup>11</sup>On the other hand, a contextualist might want to set up a rank of epistemic standards for a proposition with respect to all contexts.

<sup>12</sup>No one clearly states this treatment, but I suppose that Brueckner (1994) might endorse this position. I shall come back to Brueckner's position later.

<sup>13</sup>We may also consider another, related comparison of driving ability.

- (i) If Mary can drive, then John can drive.
- (ii) If Mary can drive in California, then Mary can drive in Austin.
- (iii) If Mary can drive with one hand, then Mary can drive with two hands.

<sup>14</sup>The following variation may be interesting to some readers.

- (i) If Mary can survive in New York, then Mary can survive in Austin.

<sup>15</sup>The infelicitous morphological comparative *John knows that 'it is a barn in situation N more than he does in F'* does not follow from the DeRose-style analysis. What actually follows from the analysis is *John is in a better position to know that 'it is a barn' in situation N than he does in situation F.*

<sup>16</sup>Examples in the form of (4-1) can be extended to the Gettiered, as F, and non-Gettiered, as N, cases.

<sup>17</sup>I take it that differences in a subject's discrimination power can induce differences in the subject's evidence, so discriminatory power is not included in the formulation of the principle.

<sup>18</sup>I disregard the consideration that both epistemic standards and epistemic positions change in the two sides of (4), since the two sides differ only on situations.

<sup>19</sup>Some may find it weird to say that the epistemic standard is simply an epistemic test. But think about this: taking the length of a meter as a standard of tallness and comparing it with John, we can know whether John is tall. The standard of 'tall' is also just a test.

<sup>20</sup>The discussion of situational epistemic comparative conditionals invites us to reconsider the role of relevant alternatives in epistemology. A situation change may induce a change in the relevant alternatives, and the change in relevant alternatives does induce a change in epistemic position of a putative knower. Nonetheless, relevant alternatives do not have a role in changing the epistemic standard of knowledge attribution.

<sup>21</sup>Another possibility is to consider how interests can affect a putative knower's epistemic position (cf. Hawthorne 2004 and Stanley 2005).

<sup>22</sup>Evidence is important for changing epistemic positions even in the ordinary idiom. For example, in the Muddy Children Induction, we are considering how the evidence that children acquire can make them be in a position to know whether they are muddy. In general, we take epistemic positions into our conversation quite naturally. For example, we can say that John is in no position to know that he will get fired, or the muddy children are in no/a position to know whether they are muddy. This can be one reason to dis-prefer Brueckner's account for the conditionals. On the other hand, the point from epistemic positions can make more sense of sentences like *John knows Mary better than Bill* and *John knows Mary no better than Bill*.

<sup>23</sup>I do want to insist on a distinction between evidence and situation (environment). Roughly speaking, a piece of evidence for a belief in P is something the believer takes to support the truth of P. On the other hand, a situation determines how a believer's evidence should be evaluated. Taking an analogy from the survival cases, evidence is analogous to what someone can do for survival, but situation is analogous to the environment of testing someone's ability.

<sup>24</sup>We may consider, for instance, ability comparison as a special case for evidential comparison, since ability can change the available evidence, as also noted by Neta (2004).

<sup>25</sup>DeRose (2005: 182).

<sup>26</sup>We may take the counter-possibility raised in Bank Case B to be a remote and irrelevant alternative from the perspective of Bank Case A. Given this consideration, the only difference between the two bank cases and the two barn cases is that environments and conversations are different ways to introduce a counter-possibility into epistemic considerations.

<sup>27</sup>Cohen's distinction on speaker sensitivity is different from DeRose's attributor factors since Cohen's notion focus only on the speaker sensitivity of conversational context.

<sup>28</sup>In Cohen (1998), this difference is used to argue against Lewis-style contextualism.

<sup>29</sup>Heller's analysis can be considered as a detailed elaboration of Cohen's (1988) and (1998).

<sup>30</sup>Heller's identification of the epistemic standards is the same as what is proposed in DeRose (1995) that the epistemic standards can be identified as the spheres of possible worlds that center on the actual worlds. But note that DeRose (1995) does not propose any identification criterion for the epistemic positions.

<sup>31</sup>I take it that Schaffer (2005) convincingly argues that the change of conversational situations uniformly change the relevant alternative under epistemic considerations, although he does not consider whether the change is actually a change of epistemic standards or epistemic positions.

<sup>32</sup>I here disregard the lengthy debate between SSI and contextualism. See DeRose (2004, 2005) for contextualist response to SSI.

<sup>33</sup>While Lewis (1996) confesses that his contextualism does not account for how a skeptical hypothesis raises the epistemic standard, the account adopted here follows Cohen's interpretation of Lewis (1996) in Cohen (1998).

<sup>34</sup>"... a claim to know (or an admission that one doesn't know) that a skeptical hypothesis is false will, by the Rule of Sensitivity, tend to invite a very high reading, at which the admission is true and the claim is false" (DeRose 1995:42).

<sup>35</sup>For Nozick (1981), the shift of epistemic considerations for the two sides of the conditional follows directly from his definition of knowledge.

## References

Brueckner, A.: 1994, 'The Shifting Content in Knowledge Attributions', *Philosophical and Phenomenological Research* 54, 123-126.

Cohen, S.: 1987, 'Knowledge, Context, and Social Standards', *Synthese* 73, 3-26.

Cohen, S.: 1988, 'How to be a Fallibilist', *Philosophical Perspectives* 2, 91-123.

Cohen, S.: 1999, 'Contextualist Solutions to Epistemological Problems: Scepticism, Gettier, and the Lottery', in Sosa, E., J. Kim, and M. Matthew (eds), *Epistemology: An Anthology*, Blackwell Publishers, Massachusetts, pp. 517-530.

Cohen, S.: 1999, 'Contextualism, Skepticism, and the Structure of Reasons', *Philosophical Perspectives* 13, 57-89.

Cohen, S.: 2001, 'Contextualism Defended: "Comments on Richard Feldman's" Skeptical Problems, Contextualist Solutions', *Philosophical Studies* 103, 87-98.

Cappelen, H. and E. Lepore: 2004, *Insensitive Semantics: A Defense of Semantic Minimalism and Speech Act Pluralism*, Blackwell Publishers, Massachusetts.

DeRose, K.: 1992, 'Contextualism and Knowledge Attributions', *Philosophy and Phenomenological Research* 52, 913-929.

DeRose, K.: 1995, 'Solving the Skeptical Problem', *Philosophical Review* 104, 1-52.

DeRose, K.: 1996, 'Relevant Alternatives and the Content of Knowledge Attributions', *Philosophy and Phenomenological Research* 56, 193-197.

- DeRose, K.: 1999, 'Contextualism: An Explanation and Defense', in J. Greco and E. Sosa (eds), *The Blackwell Guide to Epistemology*, Blackwell Publishers, Massachusetts, pp. 187-205.
- DeRose, K.: 2002, 'Assertion, Knowledge and Context', *Philosophical Review* 111, 167-203.
- DeRose, K.: 2004, 'The Problem with Subject-Sensitive Invariantism', *Philosophy and Phenomenological Research* 118, 346-350.
- DeRose, K.: 2005, 'The Ordinary Language Basis for Contextualism, and the New Invariantism', *The Philosophical Quarterly* 55, 172-198.
- Dretske, F.: 1970, 'Epistemic Operators', *Journal of Philosophy* 67, 1007-1023.
- Dretske, F.: 2005, 'The Case against Closure', in E. Sosa and M. Steup (eds), *Contemporary Debates in Contemporary*, Blackwell Publishers, Massachusetts, pp. 13-26.
- Gettier, E.: 1963, 'Is Justified True Belief Knowledge?', *Analysis* 23, 121-123.
- Goldman, A.: 1979, 'Discrimination and Perceptual Knowledge', *Journal of Philosophy* 73, 771-791.
- Hawthorne, J.: 2004, *Knowledge and Lotteries*, Oxford University Press, New York.
- Hawthorne, J. 2005, 'The Case for Closure', in E. Sosa and M. Steup (eds), *Contemporary Debates in Contemporary*, Blackwell Publishers, Massachusetts, pp. 26-43.
- Heller, M.: 1999, 'The Proper Role for Contextualism in an Anti-Luck Epistemology', *Philosophical Perspectives* 13, 115-129.
- Lewis, D.: 1979, 'Scorekeeping in a Language Game', *Journal of Philosophical Logic* 8, 339-359.
- Lewis, D.: 1996, 'Elusive Knowledge', *Australasian Journal of Philosophy* 74, 549-567.
- Ludlow, P.: 2005, 'Contextualism and the New Linguistics Turns in Epistemology', in G. Preyer and G. Peter (eds), *Contextualism in Philosophy*, Oxford University Press, New York), pp. 11-50.

- Neta, R.: 2002, 'S knows that p', *Nous* 36, 663-681.
- Neta, R.: 2003, 'Contextualism and the Problem of the External World', *Philosophy and Phenomenological Research* 66, 1-31.
- Neta, R.: 2004, 'Perceptual Evidence', *Philosophical Studies* 119, 199-214.
- Nozick, R.: 1981, *Philosophical Explanation*, Harvard University Press, Cambridge, Massachusetts.
- Schaffer, J.: 2005, 'What Shifts? Thresholds, Standards, or Alternatives', in G. Preyer and G. Peter (eds), *Contextualism in Philosophy*, Oxford University Press, New York, pp. 115-130.
- Stanley, J.: 2004, 'On the Linguistic Basis for Contextualism', *Philosophical Studies* 119, 119-146.
- Stanley, J.: 2005, *Knowledge and Practical Interests*, Oxford University Press: New York.
- Stine, G.: 1976, 'Skepticism, Relevant Alternatives, and Deductive Closure', *Philosophical Studies* 29, 249-260.
- Unger, P.: 1984, *Philosophical Relativity*, University of Minnesota Press, Minneapolis.
- Williamson, T.: 2005, 'Contextualism, Subject-Sensitive Invariantism and Knowledge of Knowledge', *The Philosophical Quarterly* 55, 213-235.
- Wright, C.: (2005), 'Contextualism and Scepticism: Even-Handedness, Factivity and Sur-reptitiously Raising Standards', *The Philosophical Quarterly* 55, 236-262.