Peer Disagreement

and

Total Evidence

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Declaration

I, Heejin Kwon, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

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Abstract

How should you respond to the disagreeing opinion of your peer? This question has been discussed under the name of "peer disagreement problem" in epistemology. In this thesis, I focus on this problem by assessing main views about it. In Chapter 1, I provide a paradigmatic peer disagreement case and explain some preliminary points for the later discussion. Then, I discuss the two major views on the peer disagreement problem, Total Evidence View and Equal Weight View. In Chapter 2, I explain and assess Thomas Kelly's Total Evidence View by distinguishing the two main claims of it, the requirement of Total Evidence View and the total evidence principle. I criticize Total Evidence View by showing that these two claims cannot hold at the same time by discussing several disagreement cases. In Chapter 3, Equal Weight View is discussed by examining arguments for it provided by Adam Elga and David Christensen. I explain and assess this view also by distinguishing the two main claims, the requirement of Equal Weight View and the independence principle. I criticize that the independence principle does not generally hold, based on Kelly's idea of the justified higher-order belief with help from Jennifer Lackey's argument. Also, I argue that even in the cases where the independence principle holds, this principle does not plausibly yield the requirement of Equal Weight View if you are rationally required to take account of the original evidence again. In the final chapter, I conclude that the cases under the single title of "peer disagreement" are heterogeneous so that providing a general account to them by relying on a single intuition is far from viable.

Contents

1. Introduction

Disagreement is pervasive in our lives. You disagree with proponents of a different political party over economic policies of the current government. Also, you can find disagreement over a certain philosophical claim when you read a philosophical paper. Besides, you know that there are a lot of people who disagree with you over abortion, euthanasia, and so on. In this respect, to explore how to respond to disagreement is important in our lives. In particular, to examine what doxastic attitude we should have in the face of disagreeing opinions is important in our intellectual lives.

However, not every disagreement is philosophically interesting. For example, if you disagree with your seven-year-old daughter over the addition of two two-digit numbers, this does not matter much to you.

This is because given your knowledge that your calculation ability is much better than your child, you can easily dismiss her answer. Also, if you as a biologist disagree with a mineralogist at the same university over whether platypuses are mammals, this also does not matter much to you. This is because since you know that your background knowledge or evidence bearing on the issue is much superior to the mineralogist, you can easily dismiss her opinion.[1]

However, suppose that you and I, as doctors of the same hospital, diagnose a newly hospitalized woman based on a shared record of her symptoms and disagree over whether the woman has pneumonia. If we regard each other as equally reliable in diagnosis, it seems irrational for us to dismiss the other's opinion unlike the above cases. In this case, each of our respective disagreeing opinions seems to have a significant impact on the other. Then, what doxastic attitude should we have in the face of the equally reliable other's disagreeing opinion? This is the main question that I try to answer throughout this thesis.

Unlike the cases involving asymmetry in cognitive abilities, background knowledge or evidence, this case does not contain any apparent asymmetry between us. Rather, in this case, we regard each other as equally reliable in a specific field. That is, we regard each other as an epistemic peer.

With regard to the notion of "epistemic peer," contributors to this topic use similar descriptions. For example, Kornblith (2010: 31) describes my epistemic peers as that "they are just as smart as I am, just as well informed, and have thought about the issue just as long

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[1] In the similar way, if you disagree with her over whether jade refers to two different kinds of mineral, nephrite and jadeite, you should defer to her opinion because you know the superiority of her background knowledge or evidence.

as I have and just as carefully." And according to Kelly (2005: 174-175), "two individuals are epistemic peers with respect to some question if and only if . . . (i) they are equals with respect to their familiarity with the evidence and arguments which bear on that question, and (ii) they are equals with respect to general epistemic virtues such as intelligence, thoughtfulness, and freedom from bias."[2] In what follows, I will use the term "epistemic peer" having in mind Kelly's description[3] rather than trying to provide an alternative one. Given the notion of "epistemic peer," the peer disagreement case can be described as a case where disagreeing persons rationally regard each other as roughly an epistemic peer.[4]

Based on this, I will use the following case as a case revealing the formal structure of peer disagreement.

> [Peer Disagreement] You and I rationally believe that we are roughly epistemic peers in a specific field. At time t0, we try to answer a question in the field based on our shared evidence E. After a while at time t1, you have m confidence in that p and I have n confidence in that p ($0 \leq m \leq 1$, $0 \leq n \leq 1$, $m \neq n$). At time t2, we share our respective answers to the question and find that we disagree. (Suppose that our shared evidence supports your degree of confidence but not mine. Also suppose that we are reliable thinkers in the specific field and we have no additional evidence about the question that the other does not have. And we do not have reason to believe that the other is suffering from some unfavorable factors such as sleep deprivation or intoxication that might have a negative impact on cognitive abilities.)

The reason why we need to suppose that we are reliable thinkers in a specific field is that otherwise, there could be cases where we are allowed to give (if any) little weight to the other's

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[2] Elga (2007: 487) provides a different description as follows: You regard the other person as an epistemic peer if and only if "you think that, conditional on a disagreement arising, the two of you are equally likely to be mistaken." With regard to an argument against this description and in favor of something similar to Kornblith's and Kelly's, see Lackey (2010: n. 17).

[3] But this does not mean that Kornblith's description is wrong.

[4] If the peer disagreement case is described as a case where disagreeing persons rationally regard each other as strictly an epistemic peer, very little cases would be regarded as the peer disagreement case because the other person who one can rationally regard as strictly an epistemic peer, that is, a strict equal with respect to the familiarity with relevant considerations and with respect to epistemic virtues is very few. Therefore, if the peer disagreement case is described as such, our discussion about it would be uninteresting. Also, the peer disagreement case should not require that the disagreeing persons are in fact epistemic peers in a strict sense. With regard to this point, see Lackey (2010).

opinion. For example, if two middle school students who regard each other as an epistemic peer in physics disagree over the difficult question of quantum mechanics, they would not need to give any significant weight to the other's opinion. This is because they know that the other's opinion is quite unreliable with regard to this question. Therefore, in order for the other's disagreeing opinion to have enough impact on each of us, we need to be reliable thinkers with regard to our question.

Also, we need to suppose that we do not have reason to believe that the other is suffering from some unfavorable factors. This is because otherwise, for example, if I am now suffering from severe intoxication, my disagreeing opinion would not have an enough impact on you because you can rationally believe that I am much likely to be wrong based on the information indicating the malfunctioning of my cognitive ability.

According to the above peer disagreement case, you are rational in having your opinion while I am not, given that our shared evidence supports your degree of confidence while not mine. But there could be some worries about this based on epistemic permissiveness. For example, when we disagree over some complex questions in philosophy, politics, and so on based on a substantial body of evidence we share, our disagreement need not indicate that one of us is rational while the other is not. Given that we as experts in such fields have thought about the question for a long time, our disagreement might originate from our comparable but conflicting weighing to the epistemic principles such as simplicity and fit to the data. In this case, it seems to be correct that we are equally rational in having our respective opinions. Therefore, it seems that the following thesis is false:

> **The Uniqueness Thesis**. For a given body of evidence and a given proposition, there is some one level of confidence that it is uniquely rational to have in that proposition given that evidence. (Kelly (2010: 119))[5]

This thesis is controversial,[6] so I will not try to take a stance on this issue. Rather, only if the target view that I assess assumes this thesis, I will assume it. Another strategy to avoid taking a stance is to deal with cases where it seems relatively clear that only one of the disagreeing

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[5] There are several versions of the uniqueness thesis provided by Feldman (2007), Christensen (2007), Cohen (2013) as well as Kelly (2010). Although they capture the same idea, there is a difference between them concerning which they range over between degrees of confidence or all-or-nothing beliefs.

[6] Feldman (2007), Christensen (2007) and Cohen (2013) provide arguments supporting the uniqueness thesis in particular in the spirit of what Cohen (2013: 101) calls "Doxastic Uniqueness."

peers is rational. For example, if we disagree over an arithmetic question to add 3,232 and 4,237 and if your answer is correct while mine is not, it seems relatively clear that your belief about the answer is rational while mine is not. I think this is correct regardless of whether the uniqueness thesis is true.[7]

Based on these preliminary points, I will discuss the two major views on the peer disagreement problem, Total Evidence View and Equal Weight View. In Chapter 2, I will explain and assess Kelly's (2010) Total Evidence View by distinguishing the following two main claims of it: The requirement of Total Evidence View to the effect that you should favor your original opinion if you have correctly responded to the original evidence and the total evidence principle to the effect that what you should believe when you find that we disagree is determined by the total evidence you have at the time. I will criticize Total Evidence View by showing that these two claims cannot hold at the same time by discussing several disagreement cases. In Chapter 3, Equal Weight View will be discussed by examining arguments for it provided by Elga (2010) and Christensen (2007). I will explain and assess this view also by distinguishing the two main claims of it as follows: The requirement of Equal Weight View to the effect that you should split the difference with me when you find that we disagree and the independence principle to the effect that you should evaluate the epistemic credential of my disagreeing opinion in a way that is independent from your original reasoning. Then, I will criticize that the independence principle does not generally hold, based on Kelly's idea of the justified higher-order belief with help from Lackey's (2010) argument. Also, I will argue that even in the cases where the independence principle holds, this principle does not plausibly yield the requirement of Equal Weight View if you are rationally required to take account of the original evidence again. But as will be argued, if you retain the original evidence when you find that we disagree, you are rationally required to take account of it again because you have reason to check your own reasoning against the possibility of irrationality. Therefore, when you retain the original evidence, you are not rational in splitting the difference. In arguing this claim, I will also show that the independence principle need not to be in conflict with the total evidence principle. In the final chapter, I will briefly consider a rational disagreement case where the requirement of taking account of the original evidence again does not hold. Finally, based on the discussion about Total Evidence View and Equal Weight View together with one

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[7] In some similar cases where your belief is rational while mine is not but we do not have entailing evidence, if the uniqueness is true, our shared evidence will support only your degree of confidence. But even if the uniqueness thesis is false and so even if the rational degree of confidence is over a range, our shared evidence will support your degree of confidence over mine because the range will include m (your degree of confidence) but not n (mine).

about the rational disagreement case, I will conclude that the cases under the single title of "peer disagreement" are heterogeneous so that providing a general account to them by relying on a single intuition is far from viable.

2. An Assessment of Total Evidence View

2.1. Total Evidence View

In this chapter, I will explain and assess Kelly's (2010) Total Evidence View on the peer disagreement problem. Kelly intends to offer his view as an alternative to Equal Weight View, therefore, I need to briefly introduce this view in order to explain Total Evidence View.[8]

   According to Equal Weight View, what is rationally required for each peer to do when they find that they disagree is to give equal weight to their respective opinions and split the difference. Let us consider the following peer disagreement case again:

> [Peer Disagreement] You and I rationally believe that we are roughly epistemic peers in a specific field. At time t0, we try to answer a question in the field based on our shared evidence E. After a while at time t1, you have m confidence in that p and I have n confidence in that p (0≤m≤1, 0≤n≤1, m≠n). At time t2, we share our respective answers to the question and find that we disagree. (Suppose that our shared evidence supports your degree of confidence but not mine. Also suppose that we are reliable thinkers in the specific field and we have no additional evidence about the question that the other does not have. And we do not have reason to believe that the other is suffering from some unfavorable factors such as sleep deprivation or intoxication that might have a negative impact on cognitive abilities.)

The proponents of Equal Weight View argue that in this case you should give equal weight to my opinion and yours and split the difference between two different degrees of confidence. Also, I should do the same thing. Therefore, both you and I are rationally required to have 0.5 degree of confidence if you have 0.7 confidence and I have 0.3 confidence in that p.

   The rationale for Equal Weight View is that we are not in the position to rationally believe whose opinion is the correct response to our shared evidence because our respective epistemic situations are symmetrical. *Ex hypothesi* we regard each other as epistemic peers and we have no additional evidence bearing on the question that the other does not possess. Also, we have no independent reason to demote the other's opinion such as information about intoxication. In this respect, our respective epistemic situations are symmetrical. Therefore,

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[8] In Chapter 3, I will deal with Equal Weight View in more details.

even though you but not I in fact have taken account of our shared original evidence correctly, disagreement itself is not evidence for you to believe that you are right or for me to believe that I am wrong. We should think that both of us are equally likely to be mistaken. Therefore, we should give equal weight to our respective opinions, and split the difference between our two degrees of confidence.

Kelly's (2010) main motivation for Total Evidence View is based on his criticism against Equal Weight View. He criticizes that Equal Weight View ignores important facts that our shared evidence, or original evidence E, in fact supports your 0.7 confidence in that p and that you in fact have taken account of this evidence correctly while I have not. Before sharing our disagreeing opinions, what is rationally required of you is to retain your original opinion, namely, your 0.7 confidence in that p, while what is rationally required of me is to revise my original opinion and have 0.7 confidence in that p. However, according to Equal Weight View, the different epistemic statuses of our original opinions vanish once we share our opinions. That is, we should split the difference between our opinions regardless of such an asymmetry. Kelly (2010: 123) thinks that this is "an extremely dubious consequence of the Equal Weight View." In particular, he argues that to require equally extensive revisions in our respective opinions by splitting the difference is implausible, given the asymmetry between epistemic statuses of our original opinions.

Kelly's criticism against Equal Weight View proceeds by focusing on total evidence that we have at t2 when we share our opposite opinions. Given that what is rationally required for us to believe is determined by the total evidence we have at the time, the total evidence consisting of the following pieces should play such a role.

The original evidence E
The fact that you have 0.7 confidence in that p based on E
The fact that I have 0.3 confidence in that p based on E

However, according to Equal Weight View, our original evidence plays no role in determining what degree of confidence we should have about that p at t2 because what is rationally required of us is to split the difference based on the two facts about our different degrees of confidence and to have 0.5 confidence in that p. In this sense, our original evidence E is completely swamped by our two doxastic facts.

Kelly argues that this picture of Equal Weight View makes our disagreement case similar to a third person case or a case in which we have lost our original evidence. With regard to

the former case, suppose a third person who knows that two competent peers in a specific field (namely, you and I) have their respective degrees of confidence 0.7 and 0.3 in that p with regard to a certain question. Also, suppose that the third person does not have any other evidence including our original evidence bearing on the question. In this case, what the third person should do is to split the difference between two peers' respective degrees of confidence and have 0.5 confidence in that p. With regard to the latter case, suppose that after sharing our respective opinions, we have lost our access to original evidence E by forgetting it while retaining our respective degrees of confidence. In this case, what we should do is also to split the difference between our original opinions.

However, Kelly argues that to make our peer disagreement case similar to these cases is absurd. Consider the following Kelly's claim:

> [I]t is mysterious why, in cases in which we *do* have access to the original evidence, that evidence should play no role in determining what it is reasonable for us to believe but is rather completely swamped by the opinions that we form in response to it. It is a weakness of the Equal Weight View that it assimilates cases in which one does have access to the original evidence to cases in which one does not. (Kelly (2010: 124); emphasis in original)

Based on criticisms against Equal Weight View, Kelly provides his Total Evidence View as an alternative to it. According to Total Evidence View, in the above peer disagreement case, you are not rationally required to give equal weight to your opinion and mine, if your opinion is a rational response to our original evidence. Then, Kelly needs to answer the question about how much weight you should give my opinion and I should give your opinion. One of the options could be that you do not need to give any weight to my opinion (rather, you need to give all weight to your opinion) and I should give all weight to your opinion (and no weight to my opinion). At first glance, this option seems plausible. Suppose that this option was false and that you gave a bit of weight to my opinion and thereby revised your degree of confidence a little bit. *Ex hypothesi* my opinion is an inappropriate response to our original evidence E, while your original opinion is the correct response. Then, by moving towards my opinion, your revised degree of confidence deviates from a rational degree of confidence supported by our original evidence E. This is applied to me in the same way. Suppose that I gave significant but not all weight to your opinion and thereby revised my degree of confidence. In this case, I arrive at a degree of confidence close to your original one but not the same. But this means

that my revised degree of confidence does not reach the rational degree of confidence supported by our original evidence E. Therefore, in order for you and me to have the rational degree of confidence supported by our original evidence E, it seems that you do not need to give any weight to my opinion and I should give all weight to yours.

However, Kelly rejects this option because the fact that we are fallible thinkers should be taken into account. Even if your opinion is an impeccable response to our original evidence E, you should not be certain that you are right when you have evidence to the effect that you are fallible. And such evidence is provided when you know that I have a different degree of confidence in that p based on the same evidence E. Kelly (2010: 139) argues as follows:

> When one possesses higher-order evidence to the effect that one is currently in circumstances in which one is more likely than usual to have made a mistake in responding to one's first-order evidence, one has a reason to temper one's confidence— even if that confidence is in fact an impeccable response to the first-order evidence. … Moreover, this is so, even if the higher-order evidence is misleading, as when one has in fact responded appropriately to the first-order evidence and one's peers have not.

In this claim, higher-order evidence can be understood as evidence about the evidential support of first-order evidence. In this sense, the fact that I have 0.3 confidence in that p based on our original evidence E is higher-order evidence because this fact indicates the evidential support of first-order evidence that first-order evidence E supports 0.3 confidence in that p. Also, this evidence is evidence to the effect that you made a mistake in having 0.7 confidence in that p based on E. Therefore, given such higher-order evidence provided by my disagreeing opinion, you should temper your confidence. After all, this means that you should move to some extent towards my degree of confidence in that p by giving some weight to my opinion.

Meanwhile, the above argument does not prevent me from giving all weight to your opinion. According to the above option that Kelly rejects, you do not need to give any weight to my opinion and I should give all weight to yours. As argued above, in your case, you need to give some weight to my opinion, given higher-order evidence provided by my disagreeing opinion. However, in my case, I already need to give all weight to your opinion. Therefore, higher-order evidence provided by your opinion does not prevent me from giving all weight to your opinion.

Kelly does not explicitly explain why I should not do as such, but this is inferable from his account of higher-order evidence. First of all, the reason why my opinion is higher-order evidence bearing on the evidential support of our original first-order evidence is that I am as

a generally reliable thinker as you. Therefore, you need to take account of my disagreeing opinion as evidence rather than to simply ignore it. In a similar way, given that I am as a generally reliable thinker as you, I need to take account of my opinion as evidence. The fact that I have 0.3 degree of confidence in that p based on the original evidence E is higher-order evidence to the effect that original evidence E supports 0.3 degree of confidence. Therefore, when I take account of this higher-order evidence as a doxastic product of a generally reliable thinker, I need to give some weight to my opinion, thereby not giving all weight to your opinion.

However, even though you and I should give some weight to my opinion (and also you and I should give some weight to your opinion), still, the question about how much weight we should give to each of our opinions needs to be answered. According to Equal Weight View, we should give equal weight to our respective opinions and split the difference. In this case, the fact that you have responded to original evidence E correctly and I have not plays no role in determining what we should believe about that p after sharing our opinions. Rather, only the two pieces of higher-order evidence consisting of the fact that you have 0.7 confidence in that p based on E and the fact that I have 0.3 confidence in that p based on E play every role in determining that. But Kelly thinks that this is mistaken. He (2010: 140) argues that "to acknowledge that higher-order considerations make some difference is not to fall back into the mistake of thinking that they make all the difference." Therefore, although you need to temper your confidence in that p because my opinion makes some difference, you do not need to give up your original opinion and split the difference with me, if your original opinion is a correct response to the original evidence. That is, my opinion as higher-order evidence to the effect that you are fallible does not make whole difference and, therefore, does not force you to give up your original opinion and split the difference with me. In my case, although I need to give some weight to my opinion, I should give much more weight to your opinion if my opinion is an inappropriate response to the original evidence E. The fact that I have 0.3 confidence based on E makes some difference, and therefore, it allows me not to give all weight to your opinion. But it does not make all difference by allowing me to treat our respective opinions equally.

After all, according to Total Evidence View, what it is rational for us to do when we know that we disagree is to give more weight to your opinion and less weight to mine and thereby have a bit tempered degree of confidence than your original one in that p, if your original opinion is a correct response to our original evidence. Therefore, the degree of confidence that *both of us* should have when we know that we disagree is placed between 0.5 and 0.7. (This means that you should move a little towards my degree of confidence by giving a bit of

weight to my opinion and I should move to a great extent towards your degree of confidence by giving significant weight to your opinion.)

Meanwhile, this explanation about Total Evidence View gives an impression of externalism. According to the above explanation, you are rationally required to give more weight to your opinion and less weight to mine, if the fact that you have responded to the original evidence correctly obtains. But that the fact that you have responded to the original evidence correctly obtains does not entail that you are aware that such a fact obtains. Therefore, when you are rationally required to give more weight to your opinion and less weight to mine, this requirement governs you regardless of your awareness that in fact you have responded to the original evidence correctly. After all, this means that even if you are not in the position to rationally believe that your opinion is the correct response to the original evidence, you are rationally required to give more weight to your opinion and less weight to mine.

However, such an externalistic view on the peer disagreement problem is inappropriate at least as an alternative to Equal Weight View. I explained above that the motivation for Equal Weight View is provided by the fact that we are not in the position to rationally believe whose opinion is the correct response to the original evidence because our respective epistemic situations are symmetrical. Therefore, if Total Evidence View tries to be an appropriate alternative to Equal Weight View by arguing that Equal Weight View is implausible, Total Evidence View should explain away such a motivation for its target view, rather than simply ignoring it by appealing to an externalistic view.

In fact, Kelly recognizes this worry about Total Evidence View and tries to alleviate it by arguing higher-order asymmetry. Let us consider the following Kelly's claim:

> First, let us observe the unobvious point that, when one responds correctly to a body of evidence, one typically has some justification for thinking that one has responded correctly. In paradigmatic cases in which one takes up the view that is best supported by one's evidence, it is no mere accident that one has done so (although lucky accidents are of course possible, they are atypical.) Rather, one takes up the belief in question precisely because it is supported by one's evidence. Indeed, in a given case, one might very well take up the belief because one *recognizes* that this is what one's evidence supports. Plausibly, *recognizing that p* entails *knowing that p*. Assuming that that is so, then any case in which one recognizes that one's evidence supports a given belief is a case in which one knows that one's evidence supports that belief. Clearly, if one knows that one's evidence supports a given belief, then one is *justified* in thinking that one's

evidence supports that belief; if one were not justified, one would not know. But even if recognizing that p does *not* entail knowing that p, one would in any case not be able to recognize that p if one were unjustified in thinking that p. It follows immediately from this that, whenever one recognizes that one's evidence supports such-and-such a conclusion, one is justified in thinking that one's evidence supports that conclusion. (Kelly (2010: 156); emphasis in original)

According to this argument, when one has a belief by recognizing that one's evidence supports it, one is not only rational in having such a belief but also rational in thinking that one's evidence supports this belief. Based on this claim, Kelly argues that in the peer disagreement case, you are rational in thinking that your 0.7 confidence in that p is supported by our original evidence E because your confidence is a result of your recognition that the original evidence E supports your confidence (assuming that you have such a confidence not by accident but by recognizing that the original evidence supports it). In the same way, I am not rational in thinking that my 0.3 confidence in that p is supported by our original evidence E because my confidence is not a result of such a recognition. In this respect, there is asymmetry between the epistemic status of your higher-order belief and that of mine. Then, based on your justified higher-order belief that your (first-order) confidence is a correct response to the original evidence, you would be rational in giving more weight to your opinion and less weight to mine.

For an easier understanding, let us consider an extreme disagreement case. Suppose a case where you and I as epistemic peers[9] with regard to arithmetic disagree over the correct answer to a simple arithmetic question to add 35 and 47. You believe with maximal confidence that the answer is 82 but I believe with maximal confidence that the answer is not 82. In this extreme disagreement case, it seems intuitively correct that you are in the position to rationally believe that your answer is correct and such a rational higher-order belief seems to be a product of your recognition that adding 35 and 47 is 82.[10]

If this account successfully explains away the internalistic motivation for Equal Weight View, then Total Evidence View could be regarded as an appropriate alternative to it. Also, Total Evidence View would not be regarded as merely an externalistic view ignoring the internalistic motivation because it explains how you can be aware of the fact that you have responded to

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[9] By "you and I as epistemic peers," I mean that you and I regard each other as roughly an epistemic peer.

[10] In this case, one might think that you do not need to give any weight to my opinion unlike the claim that based on your justified higher-order belief, you are rational in giving more weight to your opinion and less weight to mine. I will discuss this worry in dealing with the total evidence principle in the next section.

the original evidence correctly.

After all, what the above explanation shows is not only that you *are rational to give* more weight to your opinion and less weight to mine if the fact that your opinion was a correct response to our original evidence obtains but also that you are *rational in doing* so, based on your justified higher-order belief about such a fact.[11]

Meanwhile, against Equal Weight View in which the original evidence plays no role in determining what you should believe about that p when you find that we disagree, Kelly argues that this requirement is supported by the total evidence consisting of the following pieces:

The original evidence E

The fact that you have 0.7 confidence in that p based on E[12]

The fact that I have 0.3 confidence in that p based on E

Then, the question is how this total evidence yields the requirement of Total Evidence View. First of all, according to Kelly (2010: 142-143), "it is plausible to suppose that the two pieces of higher-order psychological evidence … are more or less equally strong pieces of evidence that point in opposite directions." But it is mistaken to think that when these two pieces of evidence are added, they are counterbalanced and the net effect comes to none. If this calculation were right, then what we should believe based on the total evidence at t2 (when we find that we disagree) would be the same as that at t1 (before we find that we disagree) when our total evidence consists of only the original evidence E. Kelly rejects this because if this were right, higher-order evidence would play no role in determining what we should believe at t2 and in effect, this would have the same result as the option that you do not need to give any weight to my opinion and I should give all weight to yours.

Rather, Kelly argues that adding the two pieces of higher-order evidence has some impact on what we should believe at t2. According to him (2010:143), the addition of them "has a moderating impact and tends to push what it is reasonable for us to believe about the hypothesis in the direction of agnosticism." Therefore, given that original evidence supports your original confidence (0.7) in that p, the total evidence at t2 supports a degree of confidence

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[11] In discussing van Wietmarschen's (2013) claim about evidential support in the next section, I will explain this distinction between being rational to do and being rational in doing in more details.

[12] The reason why you should treat the fact about your opinion as evidence in the peer disagreement case is provided by the fact that you are a generally reliable thinker. With regard to the discussion about this point, see Cohen (2013: 112).

less than 0.7 but more than 0.5.[13]

2.2. The Requirement of Total Evidence View and the Total Evidence Principle

So far, I explained Kelly's Total Evidence View. From now on, I will focus on clarifying some unobvious points and assessing his view. In this section, I will concentrate in particular on making clear the requirement of Total Evidence View and the total evidence principle and also the relation between them.

First of all, let us consider the requirement of Total Evidence View. As explained in the previous section, Kelly argues that **you are rational to give more weight to your opinion and less weight to mine if the fact that your opinion was a correct response to our original evidence obtains and also you are rational in doing so, based on your justified higher-order belief about such a fact.** I call this claim "**the requirement of Total Evidence View.**"

Now, let us consider the total evidence principle. As I explained in the previous section, against Equal Weight View, Kelly claims that **what you should believe when you find that we disagree is determined by the total evidence you have at the time**. I will call this claim "**the total evidence principle.**"

Then, let us consider again the following pieces of the total evidence you have when you find that we disagree in the peer disagreement case:

The original evidence E

The fact that you have 0.7 confidence in that p based on E

The fact that I have 0.3 confidence in that p based on E

Given this total evidence, we need to know how you should treat the two facts about our respective degrees of confidence. First of all, if you follow the requirement of Total Evidence View, it seems that you should not treat the two facts equally. This is because the above two facts are entailed by your opinion and mine and according to the requirement of Total Evidence View, you should give more weight to your opinion and less weight to mine. Therefore, if you give more weight to your opinion and less weight to mine at t2 by following the requirement of Total Evidence View, it seems that you should give more weight to the fact about your

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[13] In the next section, I will explain the relation between the total evidence and each of externalistic and internalistic requirements in more details.

confidence and less weight to the fact about my confidence.

Then, suppose that you give different weight to each of the two facts by following the requirement of Total Evidence View. Then, unlike Kelly's explanation, the original evidence E in the total evidence will play no role in determining what you should believe at t2. This is because according to Total Evidence View, what you should believe at t2 is determined only by giving different weight to each of our opinions. In the same way, if such a weighing is applied to the two facts, what you should believe about that p at t2 would be determined only by the two weighed facts without the original evidence E.

Then, how should we understand the seeming discrepancy between the requirement of Total Evidence View and the total evidence principle? This is already hinted by Kelly when he (2010: 142-143) says that "it is plausible to suppose that the two pieces of higher-order psychological evidence … are more or less equally strong pieces of evidence that point in opposite directions." This means that after all, we should distinguish between to give equal weight to the two facts about our respective degrees of confidence and to give different weight to our respective degrees of confidence. Also, this means that your way of giving different weight to our respective degrees of confidence does not entail your way of weighing the two facts about our respective degrees of confidence in our total evidence.

Meanwhile, according to Kelly, the requirement of Total Evidence View is supported by the total evidence you have when you find that we disagree or is yielded by applying the total evidence principle to you. Therefore, the way of meeting the condition that you should give equal weight to the two facts about our respective degrees of confidence and give different weight to our respective degrees of confidence is to regard the latter as attainable by means of the total evidence principle where the former obtains.[14]

This can be explained as follows: When the total evidence principle is applied at t2, the two equally strong pieces of evidence, namely, the two facts about our degrees of confidence support the agnostic impact. But because our original evidence supports 0.7 confidence in that p, what degree of confidence you should have about that p given the total evidence is determined as a degree of confidence between 0.5 and 0.7. This is the very degree of confidence you should have when you follow the requirement of Total Evidence View.

I think that the above explanation is faithful to Kelly's idea about the relation between the requirement of Total Evidence View and the total evidence principle. But I think that this

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[14] In section 3.3, I will employ this point in discussing the relation between the independence principle and the total evidence one.

explanation is still unclear in particular when we examine in details how the total evidence principle yields each of the externalistic and internalistic requirements of Total Evidence View. In what follows, rather than trying to be faithful to Kelly's idea, I will attempt to provide an alternative understanding about the relation between each of the requirements and the total evidence principle with help from van Wietmarschen (2013).

First of all, let us focus on the relation between the externalistic requirement and the total evidence principle. According to the externalistic requirement, you are rational to give more weight to your opinion and less weight to mine if the fact that your opinion was a correct response to our original evidence obtains and thereby you are rational to have a degree of confidence between 0.5 and 0.7 in our peer disagreement case. As I argued above, this requirement holds regardless of your awareness of such a fact. That is, even if you do not have any recognition about what the original evidence supports, therefore, even if you do not have any recognition about what the total evidence supports, you are rationally required to have such a degree of confidence.

Then, let us apply this point to the total evidence principle. Suppose that you do not have any recognition about what the original evidence supports, therefore, what the total evidence supports. But if you have such total evidence, you are still rational to have a degree of confidence supported by the total evidence in the sense of evidential support [15] or propositional justification. Therefore, given that the total evidence in the peer disagreement case supports a degree of confidence between 0.5 and 0.7 according to Kelly, you are rational to have such a degree even if you do not have any recognition about what your total evidence supports. (Note that this degree of confidence is the same as one you should have when you follow the externalistic requirement of Total Evidence View.) In this respect, the externalistic requirement of Total Evidence View is yielded by the total evidence principle when it is understood in the sense of evidential support.

Even though this explanation shows the relation between the externalistic requirement and the total evidence principle, it is still unclear because it does not explain the conception of evidential support. Therefore, in what follows, I will focus on this with help from van Wietmarschen (2013).

First of all, let us consider the following formulation of evidential support provided by van Wietmarschen (2013: 401):

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[15] I borrowed this term from van Wietmarschen (2013). I will discuss his idea about evidential support in the next paragraph.

Evidential Support (ES): A body of evidence E supports the belief that p for subject S if and only if S would believe that p on ideal reflection on whether p, given access to E.

One crucial feature of this formulation is that you are not required to actually reason from E to that p or to actually have recognition about evidential support of E in order for a body of evidence E to support the belief that p. I take this conception of evidential support as correct.

But this conception of evidential support raises worry about Kelly's explanation about what the total evidence supports. According to him, the total evidence supports a tempered degree of confidence than that supported by the original evidence. But suppose that our disagreement in the peer disagreement case is over the correct answer of an arithmetic question to add 35,223 and 26,321. In this case, your total evidence consisting of the original evidence about the arithmetic question and the two facts about our disagreeing opinions will support to have a maximal degree of confidence in the correct answer. This is because on ideal reflection, you will believe the correct answer with a maximal confidence given the original evidence, and based on this, you will dismiss my opinion. (Also, in the same way, your opinion about the correct answer will play little role in believing the correct answer with a maximal confidence because given the original evidence, your opinion will be superfluous in believing as such.) Therefore, it seems that you will not need to have a tempered degree of confidence than that supported by the original evidence.

But even though your total evidence supports to have a maximal degree of confidence in the correct answer, you will still need to temper your degree a little bit because our disagreeing opinions can also indicate that one of us has failed to initially register the numbers correctly.[16] But if you rationally believe that we registered them, for example, by clearly seeing the numbers printed on paper, you will need to temper your degree of confidence only an extremely little bit. In this case, the original evidence will play almost the whole role in determining what rational degree of confidence you should have about the correct answer. But the sum of the two equally weak pieces of higher-order evidence (our respective answers) to the effect that the other has mistaken in registering the numbers still has a moderating impact although extremely little. Then, you will still need to temper your degree although an extremely little bit.

Also, we can find some other cases where you need to temper your degree of confidence significantly. First of all, in the above formulation of evidential support, we need to notice that evidential support holds in an epistemic subject S. Foley (1993) provides a plausible

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[16] See Christensen (2007: n. 16).

explanation about this kind of evidential support.[17] According to him, ideal reflection involves finding one's deepest epistemic standard and correctly judging whether believing that p given E conforms to such a standard. But one's deepest epistemic standards need not be the same as those of others given different epistemic perspectives the others have. Therefore, if the deepest epistemic standard of an epistemic subject X is quite different from that of S, X might not believe that p on ideal reflection. Given the above formulation about evidential support, this means that what a body of evidence E supports can vary according to different epistemic subjects. Of course, in the above case including an arithmetic question, it is hard to imagine how you and I can have comparable but quite different standards about arithmetic. But we need not suppose that in all cases, deepest epistemic standards are uniform regardless of different subjects.

In particular, in some cases involving difficult moral questions, political issues or philosophical claims, it seems plausible that individuals' deepest epistemic standards can differ from each other. If this is right, then peer disagreement about these topics would be structurally different from the above arithmetic case. For example, suppose that our disagreement in the peer disagreement case is over whether abortion is morally permissible. Also, suppose that we disagree after having considered this issue for our whole lives. In this case, the total evidence supports a significantly tempered degree of confidence than that supported by the original evidence in your epistemic standard or it supports nearly an average between your degree of confidence and mine. This is because given that we have considered the issue for our whole lives so that our reflection on the issue is nearly ideal, our disagreement does not indicate the possibility of the mistake in reasoning (or registering the relevant information), rather, it indicates the possibility that there is a comparable but different epistemic standard that makes my opinion rational. In this case, even though the original evidence E supports your opinion given your epistemic standard, this does not indicate that my epistemic standard is inferior or yours is superior. Therefore, you should not rely on this evidence in order to dismiss my opinion or favor yours. Rather, given that we are epistemic peers, you should give equal weight to our respective opinions rationally yielded by our respective epistemic standards and have a significantly tempered degree of confidence.[18]

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[17] In fact, van Wietmarschen (2013: 401) says that the above formulation of evidential support "is inspired by Richard Foley's conception of epistemic rationality."

[18] In arguing this, I am assuming the doxastic uniqueness formulated by Cohen (2013: 101) as follows: "A subject cannot rationally believe there are two (or more) rational credences for [a proposition] h on [a body of evidence] e, while rationally holding either."

Meanwhile, in this case, I assumed that our reflections on the issue are nearly ideal. But even if they were ideal, this result would still hold. One thing to notice is that in this case, the two equally strong pieces of higher-order evidence play almost the whole role in determining what rational degree of confidence you should have while the role of the original evidence is extremely little.

Also, there could be some intermediate cases between the above arithmetic case and the abortion case. In such cases, our disagreement indicates both the possibility of the mistake in reasoning (or registering the relevant information) and the possibility that there is a comparable but different epistemic standard that makes the other's opinion rational. Then, the total evidence supports a moderately tempered degree of confidence.

So far, I explained the relation between the externalistic requirement of Total Evidence View and the total evidence principle in the sense of evidential support. Now, we need to examine the relation between the internalistic requirement of Total Evidence View and the total evidence principle. But before explaining this, I need to explain the moderating impact that the sum of the two pieces of higher-order evidence has.

Kelly does not explicitly explain why the addition of the two pieces of higher-order evidence provided by the two facts about our respective degrees of confidence has a moderating impact. But this can be inferable when we consider a case different from our peer disagreement one. Suppose a case in which all the details are the same as the peer disagreement case except for our degrees of confidence in that p. In this case, you have 0.7 confidence in that p and I have 0.9 confidence in that p. (Suppose that you have correctly responded to our original evidence while I have overestimated the probative force of this evidence.) Then, the addition of the two facts about our degrees of confidence would not have a moderating impact because my 0.9 confidence would make you raise your confidence rather than lower it. That is, the addition of the two facts would push what we should believe at t2 (when we find that we disagree) in the direction of 0.8 confidence (the average of our degrees of confidence), making the rational degree of confidence at t2 be placed between 0.7 and 0.8. In the same way, the addition of the two pieces of higher-order evidence in the original peer disagreement case has a moderating impact because the average of our degrees of confidence is 0.5.

Then, let us consider again the following internalistic requirement of Total Evidence View: You are rational in giving more weight to your opinion and less weight to mine based on your justified higher-order belief that your opinion was a correct response to our original evidence. In order for the total evidence principle to yield this internalistic requirement of Total Evidence View, it should reflect the justified higher-order belief in its framework. The following Kelly's

explanation about the justified higher-order belief makes this possible. According to his explanation, the original evidence E makes you rational in thinking that your confidence is supported by the original evidence if you have recognized that the original evidence supports your degree of confidence. Therefore, in our peer disagreement case, the original evidence E makes you rational in thinking that having 0.7 confidence in that p is rational based on E. But when you find that we disagree, your total evidence also includes the two pieces of higher-order evidence about our respective degrees of confidence and in our peer disagreement case, the sum of them makes you rational in thinking that having 0.5 confidence in that p is rational based on these two pieces of higher-order evidence. Then, the total evidence consisting of the original evidence and the two pieces of higher-order evidence makes you rational in thinking that having a degree of confidence between 0.5 and 0.7 is rational based on the total evidence. According to Kelly (2010: 156), one has a rational degree of confidence in that p based on one's recognition or justified belief that this is what one's evidence supports. Therefore, based on your justified belief that having a degree of confidence between 0.5 and 0.7 is rational based on the total evidence, you are rational in having such a degree of confidence. Meanwhile, this is precisely the degree of confidence you should have when you follow the internalistic requirement of Total Evidence View that you are rational in giving more weight to your opinion and less weight to mine (and having a degree of confidence between 0.5 and 0.7). Therefore, the internalistic requirement is yielded by the total evidence principle.

We can see the difference between the total evidence principle in the sense of evidential support and that in the sense of this explanation that I will call "the doxastic sense" by applying this explanation to the above arithmetic case. I argued that according to the total evidence principle in the sense of evidential support, the total evidence supports a maximal degree of confidence in the correct answer or an extremely little bit tempered one than this. Also, I argued that in the total evidence principle in this sense, the two facts about our respective opinions play an extremely little role in determining what degree of confidence the total evidence supports. Meanwhile, this result was achieved based on the condition of ideal reflection. But we do not need to suppose such a condition in accepting the total evidence principle in the doxastic sense. This is because given that the principle in this sense is related to the internalistic requirement of Total Evidence View, the principle should reflect your actual epistemic states you are aware of. Therefore, if you favor your opinion based on the total evidence, you should do so based on your actual higher-order belief that you came to have by your original reasoning from the original evidence.[19]

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[19] The epistemic status (justification) of your higher-order belief could be opaque to you. In this respect, the

Of course, it would be possible that you have a justified higher-order belief on nearly ideal reflection. In this case, you would have a justified higher-order belief with a nearly maximal degree of confidence. For example, if you calculate the addition of 35,223 and 26,321 many times in a very careful manner, you would be justified in having a higher-order belief with a nearly maximal degree of confidence that the addition of 35,223 and 26,321 is 61,544.[20] Then, as I argued in discussing the total evidence principle in the sense of evidential support, the two facts about our respective opinions would play a very little role in determining what degree of confidence it is rational for you in having about the correct answer because given this justified higher-order belief, you could nearly dismiss my opinion and also your opinion would be nearly superfluous.[21] But if you have a justified higher-order belief on quick reflection such as mental arithmetic, the two facts about our respective opinions will play a significant role. First of all, in this case, you would be justified in having a higher-order belief with a quite low degree of confidence. Therefore, you could not easily dismiss the evidence provided by the fact about my opinion. Also, your opinion would never be just superfluous, rather, it would be strong evidence about the correct answer. Therefore, given that you regard me as an epistemic peer, you would be rational in nearly splitting the difference between your opinion and mine. In this respect, when you have a justified higher-order belief by using a less reliable method, the sum of the two facts about our respective opinions will have a significant moderating impact.[22]

Given this relationship between the requirement of Total Evidence View and the total evidence principle, we need to examine how plausibly the requirement of Total Evidence View

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internalistic element of Total Evidence View seems not purely internalistic. Nevertheless, if we drop the justifiedness from your justified higher-order belief, the problem of irrational dogmatists will arise. I will explain this problem in section 3.2.

[20] I think that the reason why you are justified in having a higher-order belief with a maximal degree of confidence is provided by the fact that you have used a very reliable method (calculating the numbers many times in a very careful manner) in appreciating the original evidence. In this respect, when you use a very reliable method in having a justified first-order belief, it seems that both your first-order belief with a very high degree of confidence and you higher-order belief with such a degree are justified.

[21] I will discuss this in more details in section 3.2.

[22] Consider the following Kelly's (2013: 46-47) claim: "it is difficult to make sense of the idea that someone who possesses entailing evidence should invest less than maximal credence in the entailed proposition; indeed, orthodox theories of evidential probability would seem to rule this out (at least in cases in which the person is certain of the entailing evidence itself)." Kelly thinks that this is a genuine puzzle. I will not deal with this issue in what follows. Rather, I will assume that one should not have a maximal confidence in one's answer when one calculates a little bit complex arithmetic question such as the multiplication of 27 and 35 (in one's head) as my target views in this thesis assume.

is yielded by the total evidence principle in some concrete cases. In the following sections, I will focus on this question.

But before turning to the next section, I would like to be clear about my use of the distinction between "being rational to believe something" and "being rational in believing something." [23] As shown in the above discussion, I will use "being rational to believe something" when you are rationally required to do so according to the externalistic requirement of Total Evidence View or the total evidence principle in the sense of evidential support. On the other hand, I will use "being rational in believing something" when you are rationally required to do so according to the internalistic requirement of Total Evidence View or the total evidence principle in the doxastic sense.

One more thing to mention before turning to the next section is that the idea of the graded higher-order belief (higher-order belief with a certain degree of confidence) does not appear in Kelly's explanation. [24] But I think that this idea is very important, otherwise, a counterexample against Total Evidence View such as one that I will provide in the next section can be easily conceived. Nonetheless, in the next section, I will rely not on the idea of the graded higher-order belief but on Kelly's original conception in order to reveal the problem.

2.3. Justified Higher-Order Belief and Retaining the Original Evidence

In this section, I will examine how plausibly the requirement of Total Evidence View is yielded by the total evidence principle in some concrete cases. But before doing this, let us remind them as follows:

> **The Requirement of Total Evidence View**: You are rational to give more weight to your opinion and less weight to mine if the fact that your opinion was a correct response to our original evidence obtains and also you are rational in doing so, based on your justified higher-order belief about such a fact

> **The Total Evidence Principle**: What you should believe when you find that we disagree

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[23] This distinction is discussed by van Wietmarschen (2013) in details.

[24] Kelly seems to recognize the necessity of the graded higher-order belief. Cohen (2013: 106) says that "Perhaps the case for [Total Evidence View] can be improved if we think of second-order belief states as graded rather than binary" and makes a footnote on this as follows: "Both Tom Kelly and David Christensen suggested this to me."

is determined by the total evidence you have at the time.

Then now, let us consider the following case provided by Kelly which he argues is non-problematic although applying the total evidence principle to this case does not yield the requirement of Total Evidence View:

[Calculation] You and I add a series of ten three-digit numbers in our heads. A third party calls out the numbers, one after the other. Each of us keeps a running tally, adding the numbers as we go, not attempting to keep track of any particular number in the sequence after it has been added to the running total. We know that, when we have played this game in the past, we have made a more or less equal number of mistakes. This time, I arrive at the number 5,863 and you arrive at the number 5,883. Once we discover that we have arrived at different answers, how should we respond? (Kelly (2010: 167))

In this case, what we should do after sharing our respective beliefs about the correct answer seems to give equal weight to our beliefs and suspend judgment. Also, it seems that we are rational in doing so. At least, this seems intuitively correct and Kelly also agrees with this. The problem is how plausibly Total Evidence View can deal with this case.

First of all, Kelly argues that although the above calculation case supports an intuition of Equal Weight View, it does not support Equal Weight View over Total Evidence View because when the case is properly understood, Total Evidence View can also explain this intuition. In the above case, when we find that we disagree, according to Kelly, our total evidence consists of only two facts about our respective beliefs about the correct answer because we did not attempt to keep track of numbers that have been added to the total. That is, our total evidence consists of the following two facts:

The fact that you believe that the correct answer is 5,883
The fact that I believe that the correct answer is 5,863

Therefore, if we apply the total evidence principle to this case, the result would be that we are rational to split the difference and suspend judgment about the correct answer. Also, we would be rational in doing so based on these two pieces of evidence. In this respect, applying the total evidence principle to this case does not yield the requirement of Total Evidence View.

However, this is not a threat to Total Evidence View since it could be argued that the

requirement of Total Evidence View is only applied to the paradigmatic case such as the peer disagreement case in section 2.1 in which each peer retains original evidence when they find that they disagree. Rather, for Kelly, the fact that applying the total evidence principle to this calculation case does not yield the requirement of Total Evidence View is a welcomed result. After all, this means that the total evidence principle can explain even the intuition of Equal Weight View in a non-paradigmatic case where each peer has lost their original evidence.

Therefore, given that our question is how plausibly applying the total evidence principle to a peer disagreement case yields the requirement of Total Evidence View or how plausibly the requirement depends on the total evidence, we should focus on a paradigmatic case where peers retain their original evidence when they find that they disagree. That is, we should focus on examining whether applying the total evidence principle to this case allows us to plausibly get the requirement of Total Evidence View. If such an application does not plausibly ensure the requirement of Total Evidence View, this would be a real threat to Total Evidence View.

Then, let us consider a case where peers retain their original evidence but the requirement of Total Evidence View is not plausibly achieved by applying the total evidence principle. This case can be given by revising Kelly's calculation case as follows:

[Revised Calculation] You and I add a series of ten three-digit numbers consisting of 123, 234, 345, 456, 567, 678, 789, 891, 912, 123 in our heads. A third party calls out the numbers, one after the other. Each of us keeps a running tally, adding the numbers as we go. In the sequence after it has been added to the running total we remember the number because of their regularity. We know that, when we have played this game in the past, we have made a more or less equal number of mistakes. This time, I arrive at the number 5,128 and you arrive at the number 5,118. Once we discover that we have arrived at different answers, how should we respond? (The correct answer is 5,118.)

First of all, let us consider the total evidence you have when you find that we have arrived at different answers as follows:

The original evidence provided by your memory
The fact that you believe that the correct answer is 5,118
The fact that I believe that the correct answer is 5,128

Now, let us examine whether the requirement of Total Evidence View holds in this case.

First of all, this case can be shown to have the same structure as the original peer disagreement case by supposing some inessential details. For example, we can suppose that your belief about the correct answer is a replacement of having m confidence in your answer and my belief about my correct answer is a replacement of having m confidence in my answer or having 1-m confidence in your answer. Then, given the structural sameness between the original peer disagreement case and the revised calculation case, the requirement between these two cases should be the same. This means that the requirement of Total Evidence View holds in the revised calculation case.

Then, let us examine whether the application of the total evidence principle to this case plausibly yields the externalistic requirement of Total Evidence View. According to the total evidence principle in the sense of evidential support, you are rational to have an extremely little bit tempered degree of confidence than your original one in your answer (or to favor your answer) because your total evidence supports this degree of confidence. When this is understood in the framework of the requirement of Total Evidence View, this would mean that you are rational to give almost the whole weight to your belief and extremely little weight to my belief. In this respect, the total evidence principle plausibly yields the externalistic requirement of Total Evidence View.

Then, let us examine whether the application of the total evidence principle to this case plausibly yields the following internalistic requirement of Total Evidence View: You are rational in giving more weight to your opinion and less weight to mine based on your justified higher-order belief that your opinion was a correct response to our original evidence. But this requirement is already problematic because in the revised calculation case, it seems intuitively correct that you are rational in splitting the difference. If we set aside some inessential details, the crucial difference between the original calculation case and the revised one is that in the latter case, you remember the numbers while in the former case, you do not. But given that you do not calculate them again in the latter case, does the fact that you merely remember the numbers make you rational in favoring your original belief about the correct answer by giving more weight to your opinion and less weight to mine? I think the answer should be negative.

However, Kelly should accept that you are rational in favoring your original belief. According to Kelly's explanation (2010: 156) about higher-order asymmetry, in the revised calculation case, it is no mere accident that you believe that the correct answer is 5,118. Rather, you take up your belief precisely because you recognize that it is supported by our original evidence. In fact, if you did not recognize this, you could not have such a belief

because the probability of accidently having this correct belief is very low. Therefore, given Kelly's claim that when one has a belief by recognizing that one's evidence supports it, one has a justified higher-order belief that one's evidence supports this belief, we can say that in the revised calculation case, you have a justified higher-order belief. But given that you have a justified higher-order belief, you are rational in giving different weight to our respective beliefs based on this higher-order belief and thereby you are rational in favoring your answer. However, as I argued in the previous paragraph, this seems intuitively incorrect.

But I would set aside this problem because it can be responded by appealing to the idea of graded higher-order belief discussed in the previous section. Rather, in this section, I would assume that Kelly is right in this requirement and focus on the question about how plausibly the internalistic requirement of Total Evidence View is yielded by the total evidence principle.[25]

Then, let us consider again the total evidence in the revised calculation case as follows:

The original evidence provided by your memory
The fact that you believe that the correct answer is 5,118
The fact that I believe that the correct answer is 5,128

When the total evidence principle in the doxastic sense is applied, you would be rational in having a tempered degree of confidence in your answer than your original confidence based on your justified higher-order belief about what degree of confidence the original evidence supports together with your correct reasoning from the two facts about our respective beliefs. This degree of confidence is what you should have when you give more weight to your opinion and less weight to mine based on your justified higher-order belief, that is, what you should have when you follow the internalistic requirement of Total Evidence View. In this respect, it seems that the total evidence principle plausibly yields the internalistic requirement.

However, if this is the way that the total evidence principle in the doxastic sense yields the internalistic requirement of Total Evidence View, the fact that you retain your original evidence

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[25] If we introduce the graded higher-order belief, the above worry about the internalistic requirement will be alleviated to some extent. In the previous section, I argued that if you have a justified higher-order belief on quick reflection such as mental arithmetic, the two facts about our respective opinions play a significant role. This was because since you are justified in having a higher-order belief with a quite low degree of confidence, you cannot easily dismiss the evidence provided by the fact about my opinion and you should not treat the fact about your opinion as just superfluous. Therefore, given that you regard me as an epistemic peer, you are rational in (nearly) splitting the difference in this case. But in this section, I will assume the all-or-nothing higher-order belief because the following arguments do not depend on our choice between the all-or-nothing and the graded higher-order belief.

will play no role. As Kelly argues, your higher-order belief is justified by the original evidence via your recognition which has led you to your (first-order) belief. Therefore, if you have a justified higher-order belief, you have it when you initially appreciate the original evidence to take up your (first-order) belief. Then, the fact that you remember the numbers when you find that we disagree is not relevant to your justified higher-order belief.

But if the fact that you retain your original evidence is not relevant to your justified higher-order belief, the relation between the internalistic requirement of Total Evidence View and the total evidence principle will collapse. This is because if the fact that you retain your original evidence is not relevant to your justified higher-order belief, you can have a justified higher-order belief in the original calculation case where you do not retain the original evidence just as you have such a belief in the revised calculation case. But if you have such a higher-order belief in this case, you are rational in giving more weight to your opinion and less weight to mine based on this justified higher-order belief, therefore, the internalistic requirement of Total Evidence View holds. But in the original calculation case, your total evidence consists of only the two facts about our respective beliefs. Therefore, when the total evidence principle in the doxastic sense is applied to this case, you are rational in splitting the difference. After all, the internalistic requirement is not yielded by the total evidence principle in the doxastic sense, and this means that what you are rational in believing when you find that we disagree does not depend on the total evidence you have.

One might respond to this argument by claiming that in the original calculation case you should treat your higher-order belief as an additional piece of evidence when you find that we disagree. If this is correct, it seems that the total evidence principle in the doxastic sense can yield the requirement of Total Evidence View. But even if this reestablishes the relation between the total evidence principle and the internalistic requirement, you should not treat your higher-order belief as evidence. If you were allowed to do this, I would be also allowed to treat my higher-order belief as evidence. But if I am allowed to do so, I would be also rational in favoring my answer. But this is intuitively wrong.

Against this argument, one might claim that you should treat your *justified* higher-order belief as an additional piece of evidence. This would prevent me from treating my unjustified higher-order belief as evidence. But this claim is problematic because if you are allowed to treat your justified higher-order belief as an additional piece of evidence, the original calculation case and the revised one would become structurally the same given that the fact that you retain your original evidence is not relevant to your justified higher-order belief which makes you rational in favoring your answer. But this is clearly what Total Evidence View

refuses when it criticizes Equal Weight View through the third person case or the case in which we have lost our original evidence.

As a response to the above argument against the relation between the internalistic requirement and the total evidence principle, one might argue that the fact that you retain the original evidence rather than your justified higher-order belief makes you rational in favoring your opinion in the total evidence principle. This would mean that even though according to the internalistic requirement, you are rational in favoring your opinion based on your justified higher-order belief, according to the total evidence principle, you are rational in doing so because you retain the original evidence. If this were right, the relation between the internalistic requirement and the total evidence principle would collapse given that whether you have justified higher-order belief is irrelevant to whether you retain the original evidence. But even if we set aside this problem, another problem still arises.

If we set aside some inessential details, the crucial difference between the original calculation case and the revised one is that the total evidence in the latter case include the original evidence while that in the former case does not. But if we assume that you do not take account of the original evidence again, that is, you do not calculate the numbers again, the fact that you merely retain the original evidence, that is, the fact that you merely remember the numbers does not make you rational in favoring your answer in the revised calculation case. Therefore, in this case, the internalistic requirement is not plausibly yielded by the total evidence principle.[26]

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[26] Regardless of responding to this argument, one might argue that in the revised calculation case, the fact that you remember the numbers does not mean that you retain the original evidence by providing a certain conception of possessing evidence. According to this conception, that one possesses a piece of information as evidence for a certain proposition entails that one is now appreciating whether this information makes the proposition probable or improbable. If this conception were correct, then in the revised calculation case, you would not retain the original evidence because you would not be appreciating it when you find that we disagree. But I think this conception of possessing evidence is highly unintuitive in particular in cases where appreciating information involves reasoning from it. For example, it seems intuitively correct to say that you possess many pieces of evidence bearing on whether externalism about epistemic justification is correct even if now you are not appreciating difficult arguments provided by epistemologists. But if the above conception of possessing evidence were correct, we should accept that you do not have evidence for externalism about epistemic justification if you are not now thinking of the arguments even if you can rehearse them whenever you want. Also, if such a conception were correct, you would gain evidence only when you are thinking of relevant information and you lose it if you stop thinking of it although you clearly remember the information. But this seems to go against our intuition about possessing evidence. Then, one might revise this conception in order to make it more plausible. For example, one might argue an alternative conception of possessing evidence as follows: that one possesses a piece of information as evidence for a certain proposition entails that one have appreciated whether this information makes the proposition probable or improbable or entails that one can

2.4. Extreme Disagreement Cases

The arguments in the previous section show that the total evidence principle does not plausibly yield the internalistic requirement of Total Evidence View. This means that what it is rational for peers in believing about that p does not depend on their total evidence when they find that they disagree.

When discussing Total Evidence View in the previous section, I focused on the cases in which Equal Weight View seems to have advantage. Therefore, one might argue that these cases are not proper examples to appreciate the intuitive appeal of Total Evidence View and so we need to focus on other cases which support an intuition to the effect that one can rationally favor one's opinion over the other's. Although I think that the arguments in the previous section also hold in this kind of cases, still I need to explain why they hold.

Then, let us discuss such a kind of cases by considering a peer disagreement case involving a simple arithmetic question introduced in section 2.1 as follows:

> [Simple Arithmetic] Suppose that you and I as epistemic peers with regard to arithmetic disagree on the correct answer to a simple arithmetic question to add 35 and 47. You believe with maximal confidence that the answer is 82 but I believe with maximal confidence that the answer is not 82. Also, suppose that we remember the added numbers, 35 and 47.

In this extreme disagreement case, it seems intuitively correct that you are rational in giving significant weight to your answer and extremely little weight to mine (or in favoring your answer) even though you do not have any independent reason to demote my opinion such as my sleep deprivation.[27]

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appreciate it. However, even if these conceptions are more plausible than the original one, still they are problematic with regard to the revised calculation case. In the revised calculation case, the information you retain when you find that we disagree is the information that you have already appreciated and also you can appreciate. Therefore, even if these conceptions were correct, they cannot prevent you from retaining the original evidence when you find that we disagree.

[27] Even if you have independent reason to demote *your* answer such as *your* sleep deprivation, it seems intuitively correct that you are rational in giving significant weight to your answer and extremely little weight to mine (or in favoring your answer).

Also, given that this case has the same structure as the paradigmatic case where you retain the original evidence when you find that we disagree, Total Evidence View yields this intuitively correct verdict by its internalistic requirement. That is, in this case, the following internalistic requirement holds: You are rational in giving more weight to your opinion and less weight to mine based on your justified higher-order belief that your opinion was a correct response to our original evidence.

Then, let us consider whether the total evidence principle plausibly yields this requirement. First of all, in the simple arithmetic case, you have the following pieces of the total evidence when you find that we disagree:

Original evidence about the simple arithmetic question to add 35 and 47

The fact that you believe with maximal confidence that the answer is 82

The fact that I believe with maximal confidence that the answer is not 82

As I argued in the previous section, according to the total evidence principle in the doxastic sense, you would be rational in having an extremely little bit tempered degree of confidence in your answer than your original confidence based on your justified higher-order belief (with a high degree of confidence) about what degree of confidence the original evidence supports together with your correct reasoning from the two facts about our respective beliefs. In this respect, the total evidence principle in the doxastic sense yields the internalistic requirement of Total Evidence View.

However, as argued in the previous section, if this is the way that the total evidence principle in the doxastic sense yields the internalistic requirement of Total Evidence View, the fact that you retain your original evidence will play no role.

For an easier explanation, let us consider another extreme disagreement case involving an arithmetic question.

[Maintenance Fee] Suppose that you and I as epistemic peers with regard to arithmetic try to solve an arithmetic question to add five two-digit numbers consisting of 23, 24, 56, 72 and 90. Because the sum is the total amount we need to pay for our maintenance fee, while referring to the same bill on a computer screen, we calculate them on paper in a very cautious manner and after finishing our calculation, we check our own answers five times. After a while, you believe that the answer is 265 (the correct answer) and I believe that the answer is 275. Now, we turn off the computer and share our respective answers.

Also, suppose that your initial answer 265 has been the same through the five times of checkup and we do not remember the numbers on the computer screen.

Of course, this kind of case is very unlikely to happen in reality but if it happens, you are rational in favoring your answer according to the internalistic requirement of Total Evidence View. This is because you are justified in believing with a high degree of confidence that the original evidence about the arithmetic question supports your answer, given that your answer is a result of your six times of recognitions that the original evidence supports your answer. Then, based on this justified higher-order belief, you are rational in favoring your answer.

Then, let us examine whether the total evidence principle plausibly yields this requirement. In this case, *ex hypothesi* we do not remember the original numbers on the computer screen. Therefore, when you find that we disagree, your total evidence consists of the following two facts:

The fact that you believe that the sum is 265
The fact that I believe that the sum is 275

Then, according to the total evidence principle, you would be rational in splitting the difference and suspending judgment based on the two facts. This means that the total evidence principle does not plausibly yield the requirement of Total Evidence View in this case.

After all, what this argument shows is that if the internalistic requirement of Total Evidence View to the effect that you are rational in favoring your opinion obtains because your higher-order belief with a high degree of confidence is justified, such a requirement obtains regardless of whether you retain the original evidence. That is, it obtains regardless of whether your total evidence at the time when you know that we disagree includes the original evidence. Finally, this means that the requirement of Total Evidence View does not depend on your total evidence.

This point can be applied to the simple arithmetic case in the same way. If you are rational in favoring your answer based on your justified higher-order belief with a high degree of confidence together with your correct reasoning from the two facts about our respective beliefs, that is, if you are rational in doing so by following the total evidence principle in the doxastic sense, you would be rational in doing so regardless of the fact that you retain the original evidence.

Then, one might try to defend Total Evidence View by arguing that the fact that you retain

the original evidence rather than your justified higher-order belief makes you rational in favoring your opinion in the total evidence principle. But as argued in the previous section, this claim is implausible. This is because the mere fact that you retain your original evidence without appreciating it cannot make you rational in favoring your answer. This point can be explained by considering the following case. Suppose that you are a meteorologist and have various meteorological data which support a belief that there is 70 percent possibility that it will rain tomorrow. If you correctly appreciate the data, you will believe as such. But because appreciating the data takes more than one hour and you are on holiday, you refer to your tarot card reading which you irrationally believe is highly reliable. Now, based on your tarot card reading, you believe that there is 70 percent possibility that it will rain tomorrow.

In this case, your belief that there is 70 percent possibility that it will rain tomorrow corresponds to what it is rational for you to believe given your meteorological data. But such a coincidence does not mean that your believing as such is rational. This is because even though you have various meteorological data, your believing as such is based not on them but on your tarot card reading. Therefore, as this case shows, we need to recognize that merely having evidence without appreciating it does not make you rational in having a belief supported by it.

Therefore, in the simple arithmetic case, the mere fact that you retain your original evidence without appreciating it does not make you rational in favoring your answer. Rather, given that you take account of only our respective answers without recalculating the numbers when you find that we disagree, you would be rational in splitting the difference based on the two facts about our respective beliefs.[28]

After all, what this argument shows is that the internalistic requirement of Total Evidence View to the effect that you are rational in favoring your answer is not plausibly yielded by the total evidence principle. This means that the internalistic requirement of Total Evidence View does not depend on the total evidence.

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[28] One might try to respond to this by arguing that because the original evidence has been already appreciated correctly when you initially arrived to your answer, you are rational in favoring your answer *based on* the total evidence. Then, according to this response, you are rational in favoring your answer by your correct initial appreciation of the original evidence combined with your appreciation of the two facts about our respective beliefs. But this response is implausible because if this were right, you do not need to retain the original evidence. This is because in order to initially appreciate the original evidence correctly, you do not need to retain your original evidence after initially appreciating it correctly.

2.5. Taking Account of the Original Evidence Again

In providing the above argument, I assumed that you do not take account of the original evidence again even though you retain the original evidence when you find that we disagree. For example, I assumed that you remember the ten three-digit numbers in the revised calculation case and that you remember the two numbers in the simple arithmetic case but you do not calculate them again in both cases. As shown in the previous section, this assumption made you irrational in favoring your answer because this assumption prevented your favoring your answer from being based on all pieces of the total evidence.

However, in order to reestablish the relation between the internalistic requirement and the total evidence principle, one might argue that Total Evidence View does not need to make this assumption. First of all, let us suppose that this claim is roughly[29] true. Then, by correctly taking account of the original evidence again, for example, by recalculating the numbers you remember in the revised calculation case, you would be able to rationally favor your answer.[30] Also, in this case, favoring your answer would be based on the total evidence.

This can be compared to the epistemic situation of the third person in the revised calculation case. Let us suppose that the third person who called out the ten three-digit numbers comes to know each of our answers when we find that we disagree because she is with us when we share our respective answers. Also, suppose that she does not know the correct answer of the addition game but remember all the ten numbers. (It is not important whether this third person regards us as epistemic peers with regard to arithmetic, but for the sake of argument I will assume that she does.) Then, when we find that we disagree, the total evidence that the third person has with regard to the arithmetic question consists of the following pieces:

The original evidence provided by her memory
The fact that you believe that the correct answer is 5,118
The fact that I believe that the correct answer is 5,128

If the third person correctly appreciates the above three pieces of the total evidence, she

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[29] In what follows, I will refine this claim.

[30] Equal Weight View would agree with this claim because if you take account of the original evidence one more time than me, you would have an independent reason for favoring your answer provided by the fact that you take account of the original evidence one more time than me.

would be rational in believing that the answer is 5,118 (the correct answer) with a bit tempered degree of confidence than what it is rational for the third person in believing based on only the original evidence because the two facts about our beliefs has a moderating impact.[31] I think that if this verdict about the rational belief of the third person is plausible, then the verdict about your rational belief when you take account of the original evidence again is also plausible. I will discuss this point in the next chapter in more details.

Then, let us consider the claim that Total Evidence View does not need to make the assumption that you do not take account of the original evidence again when you find that we disagree although you retain the original evidence. But the claim does not reestablish the relation between the internalistic requirement and the total evidence principle because even if you are allowed to take account of the original evidence again, this does not mean that you are rationally required to do so. Therefore, even if you are allowed to take account of the original evidence again, you could be rational even when you refuse to take account of it again. But if this is right, the total evidence principle would yield not only the internalistic requirement of Total Evidence View but also the requirement of Equal Weight View to the effect that you are rational in splitting the difference. Therefore, in order to reestablish the relation between the internalistic requirement of Total Evidence View and the total evidence principle, Total Evidence View should assume that you are rationally required to take account of the original evidence again.

However, if Total Evidence View makes this assumption in order to reestablish the relation, this would in effect amount to the concession that without correctly taking account of the original evidence again, you are not rational in favoring your opinion even though you have responded to the original evidence correctly. And this would mean that even though your higher-order belief that the original evidence supports your belief is justified by your recognition about this, you are not rational in favoring your opinion if you do not take account of the original evidence again. However, as I explained in section 2.1, the main internalistic element of Total Evidence View is provided by your justified higher-order belief that you come to have when you initially appreciate the original evidence correctly. Also, the internalistic requirement of Total Evidence View to the effect that you are rational in favoring your opinion

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[31] With regard to the moderating impact, suppose that the third person knows that a thousand arithmetic peers believe that the correct answer is 5,118 and another thousand believe that the correct answer is 5,128. Then, according to Kelly (2010: 142), the third person would be rational in believing that the correct is 5,118 with a much more tempered degree of confidence because the third person has a lot of higher-order evidence, the sum of which indicates that the rational degree of confidence towards the correct answer is 0.5. If this is right, the sum of the two pieces of higher-order evidence in the above case would also have a moderating impact although not as great as this unrealistic case.

is viable when your justified higher-order belief makes you rational in favoring your belief regardless of whether you take account of the original evidence again after having such a justified higher-order belief. Therefore, if you are not rational in favoring your opinion when you do not take account of the original evidence again even though your higher-order belief is justified, this would mean that Total Evidence View gives up its main internalistic element by appealing an alternative element, namely, taking account of the original evidence again. In this respect, I think that Total Evidence View should not claim that you are rationally required to take account of the original evidence again.

2.6. The Problem of Total Evidence View

So far, I discussed Total Evidence View by arguing that its main claims are inconsistent to each other. In this section, I will make clear the reason why they are inconsistent. Also, I will try to find a disagreement case where such claims can hold together without inconsistency and examine whether this case makes Total Evidence View interesting enough.

First of all, let us consider again the main claims of Total Evidence View as follows:

The Requirement of Total Evidence View: You are rational to give more weight to your opinion and less weight to mine if the fact that your opinion was a correct response to our original evidence obtains and also you are rational in doing so, based on your justified higher-order belief about such a fact.

The Total Evidence Principle: What you should believe when you find that we disagree is determined by the total evidence you have at the time.

As argued above, the problem of Total Evidence View was that the internalistic requirement of Total Evidence View is not plausibly yielded by the total evidence principle in various peer disagreement cases including the revised calculation and the simple arithmetic one. What this problem means is that the above two claims of Total Evidence View do not hold together.

Then, we need to examine why this problem arises in Total Evidence View. First of all, according to the internalistic requirement of Total Evidence View, Total Evidence View requires you to have a justified higher-order belief in order to be rational in favoring your belief. At the same time, according to the total evidence principle, Total Evidence View requires you

to retain the original evidence in order to be rational in favoring your belief. However, as I argued, if you are rational in favoring your (first-order) belief because your higher-order belief is justified, this obtains regardless of whether you retain the original evidence. Therefore, if your justified higher-order belief is your ground for you to be rational in favoring your belief, you do not need to retain the original evidence, therefore, the total evidence principle cannot decisively yield the requirement about what it is rational for you in doing (either favoring your belief or splitting the difference). That is, if the internalistic element of Total Evidence View provided by the justified higher-order belief holds, the total evidence principle does not hold. In this respect, if Total Evidence View tries to maintain its main internalistic element of the justified higher-order belief, Total Evidence View should give up its main claim to the effect that what it is rational for us in believing when we find that we disagree is determined by total evidence at the time.

In this respect, in order for Total Evidence View to maintain its main claim, the ground based on which you are rational in favoring your belief should originate from the fact about the total evidence, namely the fact that you retain the original evidence. However, as I argued in section 2.4, the fact that you merely retain your original evidence without taking account of it again cannot make you rational in favoring your opinion. Also, as I argued in the previous section, Total Evidence View should not claim that you are rationally required to take account of it again because if this claim holds, Total Evidence View should deny its main internalistic element of the justified higher-order belief. In this respect, if Total Evidence View tries to maintain its main claim to the effect that what it is rational for us in believing is determined by the total evidence, it should give up its main internalistic element.

In sum, if Total Evidence View maintains its main internalistic element of the justified higher-order belief, it cannot be the 'total evidence view.' On the other hand, if it tries to be the 'total evidence view' by appealing to the total evidence principle, it cannot explain why you are rational in favoring your belief without requiring you to take account of the original evidence again. But even if we accept that you are rationally required to take account of the original evidence again, Total Evidence View cannot be a successful view because in this case it cannot maintain its main internalistic element of the justified higher-order belief.

One might conceive a case where these problems seem not to arise. Suppose a very extreme disagreement case where you and I disagree on the question to add 1 and 2 by you believing that the correct answer is 3 and me believing it is 4. Also, suppose that we remember this very simple arithmetic question when we find that we disagree. According to Total Evidence View, in this case your higher-order belief with a very high degree of confidence that

the question supports your belief is justified by your recognition that 1 added by 2 equals 3 and based on your justified higher-order belief, you are rational in favoring your answer. And, in this very simple arithmetic case, you seem to inevitably appreciate the original evidence when you retain the original evidence provided by your memory. In fact, it seems dubious that a person with a typical adult-level cognitive ability can have the evidence about such a simple arithmetic question without believing the correct answer. That is, it seems that in cases where the evidence is simple enough to allow one to automatically appreciate it, to have evidence nearly involves to appreciate it.[32] Then, in this very simple arithmetic case, favoring your belief would be based on your correctly appreciating all pieces of the total evidence because it is almost impossible for you to retain your original evidence without appreciating it. In this respect, the total evidence principle would plausibly yield the requirement that you are rational in favoring your answer. Therefore, in this very simple arithmetic case, it seems that the two main claims hold together.

However, the above discussion can be applied to this case in the same way. If you are rational in favoring your answer based on your justified higher-order belief with a very high degree of confidence, you would not need to retain the original evidence in order to be rational in favoring your belief. Also, if you are rational in doing so by appreciating all pieces of the total evidence when you find that we disagree, you would not need to have the justified higher-order belief you came to have when you initially appreciate the original evidence. Nevertheless, if one regards this case as the case where Total Evidence View plausibly holds, Total Evidence View would be a very uninteresting theory about the peer disagreement problem because only in very extreme disagreement cases such as this, the condition that the original evidence is simple enough to allow one to automatically appreciate it holds.

Meanwhile, the above problems of Total Evidence View arose because we tried to make the two main claims of Total Evidence View (the internalistic requirement of Total Evidence View and the total evidence principle) hold together. But this does not imply that each claim is implausible when they are separately considered.

Rather, I think that the intuition concerning the justified higher-order belief is strong in particular when such a higher-order belief has a high degree of confidence. I will discuss this in the next chapter.

Also, I think that the intuition of Total Evidence View qua the 'total evidence' view (a view based on the total evidence principle) is strong enough to compete with Equal Weight View.

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[32] With regard to this point, see note 26.

In order to argue for such a view, Kelly's original version of the total evidence view should be revised by giving up its internalistic element of the justified higher-order belief and by adding an alternative element of taking account of the original evidence again. But I think that if this revised view can be plausibly argued, it would be considered as a real alternative to Equal Weight View. But before discussing this revised total evidence view, I need to examine Equal Weight View.

3. An Assessment of Equal Weight View

3.1. Equal Weight View and the Independence Principle

Equal Weight View is the most influential view on the peer disagreement problem. This view or one very close to this is accepted by many contributors to this topic including Feldman (2006), Elga (2007), Christensen (2007), Kornblith (2010) and Cohen (2013). In this section, I will explain Equal Weight View in particular focusing on Elga's (2007) and Christensen's (2007) discussion.

First of all, let us consider the following peer disagreement case again.

[Peer Disagreement] You and I rationally believe that we are roughly epistemic peers in a specific field. At time t0, we try to answer a question in the field based on our shared evidence E. After a while at time t1, you have m confidence in that p and I have n confidence in that p (0≤m≤1, 0≤n≤1, m≠n). At time t2, we share our respective answers to the question and find that we disagree. (Suppose that our shared evidence supports your degree of confidence but not mine. Also suppose that we are reliable thinkers in the specific field and we have no additional evidence about the question that the other does not have. And we do not have reason to believe that the other is suffering from some unfavorable factors such as sleep deprivation or intoxication that might have a negative impact on cognitive abilities.)

As I briefly explained in section 2.1, according to Equal Weight View, we are rational in splitting the difference by giving equal weight to our respective opinions in this case. This is because we are not in the position to rationally believe whose opinion is the correct response to our original evidence. *Ex hypothesi* we regard each other as epistemic peers and we have no additional evidence bearing on the question that the other does not have. Also, we have no independent reason to demote the other's opinion such as information about intoxication. Therefore, even though you but not I in fact have taken account of the original evidence correctly, simply comparing our opinions and finding out our disagreement does not provide evidence for you to believe that you are right or for me to believe that I am wrong. We should think that both of us are equally likely to be mistaken. In this respect, our respective epistemic situations are symmetrical. Therefore, we should give equal weight to our respective opinions and split the difference between our two degrees of confidence.

As one of the several versions of Equal Weight View, let us consider the following Elga's (2007: 490) formulation which captures this point about the peer disagreement case.

Equal weight view Upon finding out that an advisor disagrees, your probability that you are right should equal your prior conditional probability that you would be right. Prior to what? Prior to your thinking through the disputed issue, and finding out what the advisor thinks of it. Conditional on what? On whatever you have learned about the circumstances of the disagreement.

In this formulation, what you have learned about the circumstances of the disagreement includes the information that one of us is suffering from some unfavorable factors such as sleep deprivation or intoxication that might have a negative impact on cognitive abilities.[33] Then, suppose that you have information that I have been awake for 50 hours and before you think through the disputed issue, your probability that you would be right is 70 percent, conditional on a disagreement arising in a situation where I am suffering from sleep deprivation but you are not. That is, suppose that before taking account of the original evidence (therefore, before finding out that we disagree), you think that if we disagree about a certain issue in a situation where I am suffering from sleep deprivation but you are not, the probability that you would be right is 70 percent. Then, according to Elga, when you find out that we disagree, your probability that you are right should be 70 percent and you should revise your degree of confidence based on this probability.

Then, let us apply Elga's formulation of Equal Weight View to the above peer disagreement case. In this case, the advisor disagreeing with you is me who you regard as your epistemic peer. Therefore, your probability that you would be right prior to your thinking through the disputed issue is 50 percent. Also, *ex hypothesi*, you do not have any information to increase or decrease your probability that you would be right such as the information about sleep

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[33] Elga (2007: 490) also includes in what you have learned about the circumstances of the disagreement the followings (when our disagreement is about the correct answer to the same multiplication problem): "[H]ow confident [we] were in [our] respective answers (after doing the calculation, but before finding out about the disagreement); how absurd each of [us] finds the other's answer." In particular, the information that we are extremely confident in our respective answers or the information that each of us finds the other's answer totally absurd are important for Elga in responding to a problem that an extreme disagreement case raises to Equal Weight View. But for a while, I assume that we do not have these pieces of information (or we have the information that we are not extremely confident in our respective answers or the information that each of us do not think that the other's answer is absurd) for the sake of a simple presentation of Elga's Equal Weight View.

deprivation or intoxication. Therefore, given that your prior conditional probability that you would be right is 50 percent, your probability that you are right should be 50 percent when you find out that we disagree, and based on this probability, you should revise your degree of confidence. After all, according to Elga's formulation of Equal Weight View, you should split the difference and have a degree of confidence averaging our different degrees.

Meanwhile, in the previous chapter, I analyzed Total Evidence View by distinguishing the requirement of Total Evidence View and the total evidence principle. Also, I examined whether the requirement of Total Evidence View is plausibly yielded by the total evidence principle. In a similar way, we can analyze Equal Weight View by distinguishing the requirement of Equal Weight View and a principle which reflects that fundamental intuition of Equal Weight View.

First of all, according to the above explanation, the requirement of Equal Weight View in the peer disagreement case is as follows:

The Requirement of Equal Weight View: We are rational in giving equal weight to our respective opinions and splitting the difference between our respective degrees of confidence when we find that we disagree.

One thing to mention is that this requirement is an internalistic one. This is because the requirement of Equal Weight View does not introduce any element which obtains regardless of our awareness. Consider the externalistic requirement of Total Evidence View that you are rational to give more weight to your opinion and less weight to mine if the fact that your opinion was a correct response to our original evidence obtains. As I explained in section 2.1, that the fact that you have responded to the original evidence correctly obtains does not entail that you are aware that such a fact obtains. Therefore, when you are rationally required to give more weight to your opinion and less weight to mine, this requirement governs you regardless of your awareness that in fact you have responded to the original evidence correctly. However, the crucial feature of Equal Weight View is that even though such a fact obtains, we are not in the position to rationally believe whose opinion is the correct response, therefore, such a fact does not play a role in determining how we should revise our respective opinions. Rather, according to Equal Weight View, we should revise our respective opinions based on information that we are aware of including information that we are epistemic peers, that we are not suffering from sleep deprivation, and so on. In this respect, the requirement of Equal Weight View should be regarded as an internalistic requirement.

Then, we need to examine what is the fundamental intuition of Equal Weight View and

what principle reflects this intuition. In introducing Equal Weight View, I said that even though you but not I in fact have taken account of the original evidence correctly, we are not in the position to rationally believe whose opinion is in fact the correct response, therefore, we should think that both of us are equally likely to be correct (or to be mistaken) when we find that we disagree. I take this claim as the fundamental intuition of Equal Weight View.[34]

Christensen (2007) tries to capture this intuition by arguing the independence principle as follows:

> [Independence] In evaluating the epistemic credentials of another person's belief about *P*, to determine how (if at all) to modify one's own belief about *P*, one should do so in a way that is independent of the reasoning behind one's own initial belief about *P*. (Christensen (2009: 758))[35]

When applied to the peer disagreement case, this principle is a requirement that when you find that we disagree, you should not depend on your original reasoning from the original evidence to your opinion in evaluating the epistemic credential of my disagreeing opinion. And this requirement in effect amounts to a requirement that you should not dismiss my opinion by depending on your original reasoning.

In the above peer disagreement case, you have m confidence in that p by your reasoning from the original evidence. If you were allowed to depend on your original reasoning, then you would be rational in dismissing my opinion because according to your original reasoning, the original evidence supports your m degree of confidence. Then, this would mean that you are rational in sticking to your degree of confidence by dismissing mine. In this respect, the

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[34] For example, about the peer disagreement case involving the question of predicting tomorrow's weather, Christensen (2007: 194) says that "the intuition supporting belief-revision in the meteorology case depends on my acknowledging that my friend is as likely as I am to react correctly to the data we have," and also, that "intuitively, the explanation in terms of my friend's mistake is no more reasonable than the explanation in terms of my mistake." (2007: 198)

[35] In Christensen (2007: 199), the independence principle has a different form as follows: "I should assess explanations for the disagreement in a way that's independent of my reasoning on the matter under dispute." One important difference between the two forms is that this (former) form explicitly mentions that it is applied to disagreement while the above (later) form does not. In this respect, the later form is more general than the former one. I will use the later form in what follows for two reasons. First of all, when the later form is applied to disagreement cases, it amounts to nearly the same as the former form. Another reason is that since Kelly (2013) uses the later form to criticize the independence principle, it is more convenient to assess Kelly's argument and discuss the plausibility of this principle by using the later form than by using the former form.

independence principle amounts to a requirement that you should not dismiss my opinion by depending on your original reasoning.

Then, let us consider how the independence principle captures the fundamental intuition of Equal Weight View. As I explained above, the fundamental intuition of Equal Weight View is that even though you but not I in fact have taken account of the original evidence correctly, we should think that both of us are equally likely to be correct (or to be mistaken) when we find that we disagree. This is precisely what the independence principle requires because the requirement that you should evaluate the epistemic credential of my belief about P in a way that is independent of your original reasoning means that even though you but not I have taken account of the original evidence correctly, this fact should be set aside. And given that considerations independent of such a fact indicates that our respective epistemic situations are symmetrical, what the independence principle requires amounts to a requirement that we should think that both of us are equally likely to be correct (or to be mistaken) when we find that we disagree even though you but not I have taken account of the original evidence correctly.

This explanation about the independence principle also shows how it plausibly yields the requirement of Equal Weight View. As shown above, when the independence principle is applied to the peer disagreement case, we should think that both of us are equally likely to be correct based on considerations independent of our respective original reasoning when we find that we disagree. This entails that we should give equal weight to our respective opinions. Also, when we give equal weight to our respective opinions, it seems that we should split the difference between our respective degrees of confidence.[36] Also, given that such independent considerations are among what we are aware of, we are rational in giving equal weight to our respective opinions and splitting the difference between our respective degrees of confidence when we find that we disagree (the requirement of Equal Weight View). In this respect, the problem that the requirement about peer disagreement is not plausibly yielded by the principle that reflects the fundamental intuition does not arise in Equal Weight View unlike Total Evidence View.[37]

In this respect, the good strategy for criticizing Equal Weight View would be to assess the

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[36] In section 3.3, I will argue that this is not always true. But for now, I assume that this is true.

[37] Kelly (2013: 37) says that "although I think that both Independence and Conciliationism are false, if I changed my mind about the former I would immediately change my mind about the latter. More generally, I think that once one accepts Independence, Conciliationism is more or less irresistible." In this quote, Conciliationism involves Equal Weight View and one very close to this.

independence principle itself, rather than to assess the relation between the requirement of Equal Weight View and the independence principle. Following this strategy, Kelly (2013) provides an argument against the independence principle in order to criticize the requirement of Equal Weight View. In the next section, I will explain and assess Kelly's argument.

3.2. Arguments against the Independence Principle

In order to assess the independence principle of Equal Weight View, Kelly (2013: 40) provides the following alternative principle that he thinks captures all crucial points of Christensen's formulation in the previous section:

[Independence*] In evaluating the epistemic credentials of another person's belief about P, in order to determine how (if at all) to modify one's own belief about P, one should do so in a way that is independent of one's assessment of those considerations that led one to initially believe as one does about P.

The reason for the revision of the original version is that there are some cases to which it is not easy to understand how it can be applied. According to the original version, one should evaluate the epistemic credentials of another person's belief about P in a way that is independent of *the reasoning behind* one's own initial belief about P. Then, suppose some cases involving one's fundamental belief such as one that there is the mind-independent world and also suppose that one has this belief by considering all other beliefs one has about the world. Unlike the case (for example, the peer disagreement case in the previous section) where one believes as one does by some discrete pieces of reasoning one can single out, in this case, it is not straightforward how to set aside one's reasoning behind one's own fundamental belief. Based on this worry, Kelly provides the above revised version of the independence principle which "has clear application to a case in which one's initial belief is based on one's assessment of a given body of evidence or information." (Kelly (2013: 40))

   When the original version of the independence principle is applied to the peer disagreement case that we mainly discuss, Kelly's worry about the original version can be alleviated because in this case, we have our respective beliefs based on our respective assessments of a given body of evidence, the original evidence E. Therefore, when each of us is required to set aside the reasoning behind our respective initial beliefs by the original

version of the independence principle, we would be able to do so by setting aside our respective assessments of the original evidence E. Nevertheless, I will use Kelly's version of the independence principle in what follows because I think that it is a more detailed formulation about what we should set aside. (Therefore, in what follows, the independence principle should be understood as referring to Kelly's version of Independence or Independence*.)

Now, let us consider Kelly's assessment of the independence principle. Kelly provides a case that he thinks shows the problem of this principle. For example, suppose you invest a very high degree of confidence to the proposition that Neil Armstrong was the first person who walked on the moon after gathering a great deal of evidence provided by various reliable sources including authoritative scientific journals and after correctly judging that these pieces of evidence strongly confirm the proposition. You then encounter a person who believes that humankind has never been to the moon after visiting a website providing moon landing conspiracy theories. (Suppose that you have reason to believe that this person is quite reliable in many scientific and historical matters unrelated to the moon landing. Also suppose that all pieces of evidence that the moon landing denier has about whether humankind has ever been to the moon consists of only a short article on the website, therefore, this person is ignorant of the considerations that led you to believe as you do.)[38]

According to Kelly, the moon landing denier's opinion could be rational in the sense that his evidence supports his belief objectively and he succeeded to take account of this evidence correctly. Therefore, if this person's belief is problematic, the problem is not on his rational ability to correctly take account of evidence but on his ignorance of relevant considerations about the moon landing because his evidence consisting of only an article on the website is grossly impoverished.

Kelly argues that in this case, the fact that this person is grossly ignorant of relevant considerations about the moon landing should be an important ground for you to dismiss his opposite opinion. But if you are required by the independence principle to set aside your assessment of the evidence you gathered from various reliable sources in order to evaluate the epistemic credential of this person's belief, you would lose this important ground for dismissing the opinion of moon landing denier. This is because "[your] judgment that the [moon landing] denier is grossly ignorant when it comes to matters relating to the [moon landing] is not at all independent of [your] assessment that the relevant considerations strongly

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[38] This case is what I revised Kelly's (2013: 40) original example involving a Holocaust denier in order to avoid such an uneasy sentence as "the Holocaust denier's opinion could be rational," but I think that this preserves all crucial points of the original example.

confirm the [moon landing]." (Kelly (2013: 41)) I will explain this claim in more details below, but before doing so, let us consider the following reasoning that Kelly (2013: 41) provides as your reasoning in dismissing the moon landing denier's opinion:

(1) F1 . . . Fn are true.

(2) Given F1 . . . Fn, it is extremely likely that [the moon landing happened].

(3) The [moon landing] denier is ignorant of F1 . . . Fn.

(4) Therefore, the [moon landing] denier is ignorant of facts that make it extremely likely that [the moon landing happened].

(5) Therefore, the [moon landing] denier's opinion about whether [the moon landing happened] is untrustworthy/lacking in epistemic credentials.

In order to understand Kelly's point in this reasoning, we need to distinguish this case from a case where you have independent reason to think that the evidence that the moon landing denier has is inferior to yours. For example, if you know that the denier's evidence consists of only an article on the website, or if you have reason to think that your evidential situation is much more superior to the average person since you have devoted your whole life to refuting the moon landing conspiracy theories, you would have a ground for dismissing the denier's opinion. And this ground would be independent from your assessment of the considerations that led you to initially believe as you do because when you invested a high degree of confidence in that Neil Armstrong was the first person who walked on the moon, you did not encounter the denier, therefore, you did not have any information about the inferior evidential situation of the denier. Therefore, the information that the denier's evidence is inferior to yours is independent from your assessment of those considerations that led you to initially believe that the moon landing happened. Given that this case is different from Kelly's, in order to understand Kelly's point in the above reasoning, (3) in your reasoning should not be understood as being introduced because you have independent reason to believe that the denier's evidence is severely impoverished.

Then, how can (3) be introduced in your above reasoning for dismissing the denier's opinion? Let us consider again the following Kelly's claim: "[your] judgment that the [moon landing] denier is grossly ignorant when it comes to matters relating to the [moon landing] is not at all independent of [your] assessment that the relevant considerations strongly confirm the [moon landing]." According to this claim, (3) depends on (2), and in this respect, I think that the plausible way of understanding the above reasoning is to think that you can reason

(3) from (2).

However, as Kelly does not show how you can reason from (2) to (3), we need to construct your detailed reasoning from (2) to (3) by adding some premises as follows:[39] First of all, given your rational belief about (2) (Given F1 . . . Fn, it is extremely likely that [the moon landing happened]), you are rational in thinking that our disagreement about the moon landing is explained by the fact that the moon landing denier is ignorant of the relevant considerations of F1 . . . Fn or by the fact that he knows the relevant considerations of F1 . . . Fn but he also has extremely conclusive evidence so that when considered together with F1 . . . Fn, the total evidence supports the denier's opinion. However, you are rational in thinking that it is improbable that the denier has such extremely conclusive evidence that outweighs the evidence you gathered from various reliable sources including authoritative scientific journals. Therefore, you are rational in thinking that our disagreement is explained by the fact that the moon landing denier is ignorant of the relevant considerations of F1 . . . Fn.

Then, the reasoning from (2) to (3) can be laid out as follows:

(2) Given F1 . . . Fn, it is extremely likely that [the moon landing happened].

(2-1A) Our disagreement about the moon landing is explained by the fact that the moon landing denier is ignorant of F1 . . . Fn, or

(2-1B) Our disagreement about the moon landing is explained by the fact that the moon landing denier has extremely conclusive evidence together with F1 . . . Fn so that the total evidence supports the denier's opinion.

(2-2) It is improbable that the denier has such extremely conclusive evidence that outweighs the evidence from various reliable sources.

(3) The [moon landing] denier is ignorant of F1 . . . Fn.

In this reasoning, premise (2) specifying your assessment of considerations that led you to initially believe as you do plays a crucial role in reasoning premise (3) and finally accepting conclusion (5). That is, your negative evaluation of the epistemic credential of the moon landing denier (conclusion (5)) depends on your assessment of considerations that led you to

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[39] The following reasoning can be understood as an attempt to apply Lackey's argument against the independence principle to the case where your ground for dismissing another person's belief is this person's ignorance of relevant considerations. In this section, I also consider Lackey's argument about the case where your ground for dismissing another person's belief is the malfunction of this person's cognitive ability by constructing the similar reasoning to what Kelly provides.

initially believe as you do (premise (2)). Therefore, if the above reasoning is plausible, the independence principle does not hold.

One important thing to note about the above reasoning is that you are required to be rational in believing each premise in order to rationally conclude that the moon landing denier's opinion is untrustworthy. This is because if there were a premise in the above reasoning that you are not rational in believing, your belief about the conclusion would be based on your irrational belief about this premise, therefore, your belief about the conclusion would be irrational. In particular, the important thing with regard to the independence principle is that you should be rational in believing premise (2) that given F1 . . . Fn, it is extremely likely that [the moon landing happened], that is, you should be rational in assessing the considerations that led you to initially believe as you do. As argued by Lackey (2010), if this were not required, the above reasoning would allow an irrational dogmatist to dismiss another person's belief based on his dogmatic and irrational assessment of relevant considerations. For example, suppose that the moon landing denier thinks that his evidence from the website for the moon landing conspiracy theories makes it extremely likely that humankind has never been to the moon and also thinks that the website is extremely reliable even more than the authoritative scientific journals. Then, the moon landing denier would be able to dismiss your belief by a similar reasoning to yours based on the irrational assessment of his evidence. However, it is intuitively correct that this is irrational. Therefore, in order to prevent one from irrationally dismissing another's belief, the requirement to the effect that one should be rational in one's assessment of the considerations that led one to initially believe as one does should hold.

Kelly's argument against the independence principle shows that there is a case where such a principle does not hold. This case was the case where disagreement happened because of asymmetry in peer's respective evidential situations rather than asymmetry in rationality in the sense of taking account of evidence correctly. Therefore, one might argue that Kelly's argument does not show that the independence principle is implausible in the peer disagreement case where disagreement happens because of asymmetry in rationality. However, I think that an argument against the independence principle in this case can be easily given when we consider Kelly's claim about the justified higher-order belief with help from Lackey's (2010) argument about personal information.

First of all, let us consider again the following extreme disagreement case involving an arithmetic question from the previous chapter:

[Maintenance Fee] Suppose that you and I as epistemic peers with regard to arithmetic

try to solve an arithmetic question to add five two-digit numbers consisting of 23, 24, 56, 72 and 90. Because the sum is the total amount we need to pay for our maintenance fee, while referring to the same bill on a computer screen, we calculate them on paper in a very cautious manner and after finishing our calculation, we check our own answers five times. After a while, you believe that the answer is 265 (the correct answer) and I believe that the answer is 275. Now, we turn off the computer and share our respective answers. Also, suppose that your initial answer 265 has been the same through the five times of checkup and we do not remember the numbers on the computer screen.

According to Total Evidence View together with my explanation about the idea of the graded higher-order belief in section 2.2, in this case, you are rational in favoring your answer based on your justified higher-order belief with a very high degree of confidence. In particular, in this case, you are justified in having a higher-order belief with a very high degree of confidence because your answer is a result of your six times of recognitions that the original evidence supports your answer.

Then, let us construct your reasoning with a similar form to the above one.

(1) The considerations constituting the original evidence are true.[40]

(2) It is extremely probable that the original evidence supports the proposition that the total amount of our maintenance fee is 265.[41]

(2-1A) Our disagreement about the total amount is explained by the fact that my disagreeing peer is mistaken in assessing the original evidence, or

(2-1B) Our disagreement about the total amount is explained by the fact that I am mistaken in assessing the original evidence.

(2-2) When I am extremely confident in my assessment of evidence by using a very reliable method such as calculating the numbers on paper six times in a very cautious manner, that I am mistaken in calculating the numbers indicates that I am severely suffering from cognitive malfunction.

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[40] Suppose that the original evidence consists of F1 . . . F6, and F1 is the consideration that the heating cost is ￡90, F2 is the consideration that the electricity bill is ￡72 . . . and F6 is the consideration that the sum of these five bills is the total amount of the maintenance fee. In the above case, you do not remember F1 . . . F6 but this does not imply that you cannot believe that the considerations are true.

[41] This premise is the content of your justified higher-order belief with a high degree of confidence that the original evidence supports your answer. As I said in note 40, you do not remember F1 . . . F6 but this does not imply that you cannot have this justified higher-order belief.

(2-3) I am not suffering from gross cognitive malfunction given my personal information that I am not suffering from this.

(2-4) I have no information about my peer's current state of mind.

(3) My disagreeing peer is mistaken.

(4) Therefore, my disagreeing peer has failed to assess that F1 . . . Fn supports the proposition that the total amount of our maintenance fee is 265.

(5) Therefore, my disagreeing peer's opinion is untrustworthy/lacking in epistemic credentials.[42]

As argued in the above ignorance case, you are required to be rational in believing each premise in order to rationally conclude that your disagreeing peer's opinion is untrustworthy. In particular, you should be rational in believing premise (2) in order to prevent the irrational reasoning of dogmatists.

In this reasoning, I need to explain premise (2-2). According to the maintenance fee case, you take up your belief based on your six-times of calculations on paper in a very cautious manner and also your initial answer 265 has been the same through the five times of checkup. Therefore, you would be extremely confident in your assessment of the original evidence. Also, given that your extremely high degree of confidence in your assessment is the result of employing a very reliable epistemic method, you would be rational in thinking that only when you are severely suffering from cognitive malfunction, you can be mistaken in assessing the evidence by employing such a method.

Now, let us explain how you can reason from (2-3) and (2-4) to (3). First of all, you have no reason to think that your peer is suffering from cognitive malfunction, but you are rational in thinking that one of us is suffering from it. But given that your extremely high degree of confidence in your assessment is the result of employing a very reliable epistemic method and that you can be mistaken in your assessment only when you are severely suffering from

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[42] I take this reasoning as a higher-order belief version of Lackey's (2010) argument. Also, I think that this reasoning shows a possible response to Cohen's (2013) argument against Kelly's notion of the justified higher-order belief. When we disagree over the current temperature based on each of our equally reliable thermometers, Cohen (2013: 107-108) argues as follows: "What matters is not whether you are better justified in thinking your thermometer is functioning properly than I am in thinking mine is functioning properly. Rather, what matters is what you are justified in thinking regarding the relative functioning of our respective thermometers. If you are justified in thinking your thermometer is functioning better than mine, then you are rational to favor your own thermometer's reading." According to the above reasoning, you are rational in thinking you are functioning better than me based on asymmetry of the personal information together with your justified higher-order belief with a high degree of confidence.

cognitive malfunction and also given that you have the personal information that you are in the normal state of mind but you have no information about your peer's present state of mind, disagreement itself gives you reason to believe that I am suffering from cognitive malfunction. Although you have no reason for my cognitive malfunction before you find that we disagree, this does not entail that you cannot gain a new reason to the same effect.[43] Therefore, you can conclude that I am mistaken based on your justified higher-order belief with a high degree of confidence together with your personal information.[44]

Meanwhile, in the above reasoning, your dismissal of my opinion is based on your justified higher-order belief with a high degree of confidence that the original evidence supports the proposition that the total amount of our maintenance fee is 265 or your correct assessment of the original evidence (together with your personal information). Therefore, if the above reasoning is correct, the independence principle does not hold.[45]

I think that the above arguments against the independence principle are plausible and they are plausible in particular in some cases such as one involving significant failure of knowing relevant considerations and one involving significant failure of assessing relevant considerations. But this should not be misunderstood as that the independence principle is implausible in all disagreement cases.

When I explained the independence principle in the previous section, I argued that this principle captures the fundamental intuition of Equal Weight View to the effect that we should think that both of us are equally likely to be correct (or to be mistaken) when we find that we disagree. Therefore, even though there are some cases where the independence principle does not hold, still we have reason to maintain this principle in other cases that support the intuition of Equal Weight View.

Given that our discussed cases of peer disagreement is concerned to irrationality rather than ignorance, let us focus on a case where disagreement is explained by the fact that one of the disagreeing peers is mistaken in assessing the original evidence but the independence

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[43] If you had sufficient reason for trusting my cognitive functioning, this reason would have prevented you from gaining a new reason for my cognitive malfunction based on our disagreement itself.

[44] This explanation is what I applied Lackey's (2010) argument to our case involving your justified higher-order belief with a high degree of confidence.

[45] In this explanation, I said that your dismissal of my opinion depends on your justified higher-order belief in your assessment, rather than, on your assessment itself. But this should not be misunderstood as claiming that from your first-person perspective, you dismiss my opinion based on your higher-order belief about your assessment. Rather, this should be understood as claiming that from your first-person perspective, you dismiss my opinion based on the content of your higher-order belief, namely your assessment.

principle still holds unlike the above extreme disagreement case. For the sake of simplicity, suppose a case very similar to the above maintenance fee case. Other details are the same as the original case but in this revised case, we calculate the numbers in our heads and after we arrive at our respective answers, we do not check them. (Therefore, there is no opportunity for your initial answer 265 to be the same through the five times of checkup.)

In this case, even though you are justified in believing that the original evidence supports your answer (because you recognize this when you take up your first-order belief), you are rational in having a much less degree of confidence about this than in the original case. This is because unlike the original case involving six times of calculations on paper, in this case, you calculate the numbers in your head, that is, unlike the original case where you use an extremely reliable method in assessing the original evidence, in this case, you use a much less reliable method in doing so. In this respect, it is much more likely that you are mistaken in assessing the original evidence in this case than in the original case. Therefore, you are rational in having a much less degree of confidence in that the original evidence supports your answer than in the original case.

Then, having this point in mind, let us construct your reasoning similar to the above as follows and examine whether the independence principle holds:

(1) The considerations constituting the original evidence are true.

(2) It is moderately probable that the original evidence supports the proposition that the total amount of our maintenance fee is 265.

(2-1A) Our disagreement about the total amount is explained by the fact that my disagreeing peer is mistaken in assessing the original evidence, or

(2-1B) Our disagreement about the total amount is explained by the fact that I am mistaken in assessing the original evidence.

(2-2) When I am moderately confident in my assessment of evidence by using a less reliable method such as adding the five two-digit numbers in my head, that I am mistaken in calculating the numbers in my head does not imply that I am severely suffering from cognitive malfunction.

(2-3) My personal information to the effect that I am not severely suffering from cognitive malfunction does not give me reason to think that I am not mistaken in adding the five two-digit numbers in my head.

(2-4) If I do not have reason to think that I am not mistaken, I do not have reason to think that my peer is mistaken.

(3) (2-1A) and (2-1B) are equally plausible.

(4) Therefore, our respective opinions are equally trustworthy in epistemic credentials.[46]

In this reasoning, although your higher-order belief in your assessment that the original evidence supports the proposition that the total amount of our maintenance fee is 265 is justified, you are not rational in dismissing my opinion depending on this. Rather, in a case where you have a justified higher-order belief with a moderate degree of confidence, you are rational in following the independence principle and thereby splitting the difference. After all, this means that there are cases where the independence principle holds as a rational requirement.

Now, I need to sum up our discussion about the independence principle together with our discussion about the justified higher-order belief in the previous chapter. In the above discussion, I focused on the cases where the independence principle does not hold and tried to show that such cases are the case where you have a justified higher-order belief with a high degree of confidence. Meanwhile, in the previous chapter, I argued that if the requirement of Total Evidence View to the effect that you are rational in favoring your opinion obtains because your higher-order belief is justified, such a requirement obtains regardless of whether you retain the original evidence. Therefore, as shown by your reasoning in the maintenance fee case, if you are rational in dismissing my opinion depending on your justified higher-order belief with a high degree of confidence, you are still rational in doing so even when you have lost the original evidence when you find that we disagree. After all, this means that in the case where you have a justified higher-order belief with a high degree of confidence, both the independence principle and the total evidence principle do not hold.

But I argued that in the case where you have a justified higher-order belief with a moderate degree of confidence, the independence principle holds as a rational requirement. Also, as I said at the end of the previous chapter, I think that there are some cases where Total Evidence View qua the 'total evidence' view (a view based on the total evidence principle) is plausible. Then, I need to examine what such cases are and in such cases, whether the total evidence principle can hold without a conflict with the independence principle. I will discuss these questions in the next section.

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[46] This reasoning is what I applied Lackey's (2010) argument to our case involving your justified higher-order belief with a moderate degree of confidence.

3.3. The Independence Principle and the Total Evidence Principle

I argued in the previous section that in the case where you have a justified higher-order belief with a high degree of confidence, both the independence principle and the total evidence principle do not hold. Therefore, in order to find a case where either the independence principle or the total evidence principle or both holds, we need to focus on a case where you have a justified higher-order belief with a moderate degree of confidence. This case is the case where you take up your belief by employing a less reliable method such as adding different ten three-digit numbers in your head.

Then, let us consider the following case:

> [Toilet Tile] Suppose that you and I as epistemic peers with regard to arithmetic try to solve an arithmetic question to multiply 123 by 187 bearing on how many tiles we should buy to cover our toilet floor. While referring to the same measured result written on paper that each of the width and the length of the floor requires 123 and 187 tiles and the floor is rectangular, we calculate the numbers in our heads. After a while, you believe that the amount of the required tile is 23,001 (the correct answer) and I believe that it is 23,002. Then, we share our respective answers.

In this case, given that your method which you have employed in order to take up your belief about the answer is less reliable, you are rational in having a moderate degree of confidence in that the amount of the required tile is 23,001. Also, even though your higher-order belief that the original evidence supports your conclusion is justified, you are rational in having a moderate degree of confidence in this assessment of the original evidence.[47] Therefore, in this case, you are not rational in favoring your answer or dismissing mine based on your justified higher-order belief.

Then, are you rational in splitting the difference? In order to answer this question, we need some more details. First of all, let us suppose that you do not look at the numbers on paper again and also have completely lost the original evidence by forgetting them. Of course, even though you do not remember the numbers precisely, it would be possible that you still remember that the numbers are all odd. But for the sake of argument, I assume that you do not remember this.

I think that the intuitively correct verdict to this case is that you are rational in giving equal

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[47] See note 20.

weight to our respective answers and splitting the difference when you find that we disagree. Also, in this case, both the independence principle and the total evidence one hold because they plausibly yield this requirement. First of all, according to the independence principle, you should set aside your assessment of the original evidence that led you to initially believe as you do and consider reasons independent from this assessment. Therefore, given that you have no independent reason to demote my opinion, you should evaluate my belief as equally trustworthy as yours and thereby give equal weight to our respective beliefs. Also, according to Equal Weight View, if you are rational in giving equal weight to our respective beliefs, you are rational in splitting the difference. Therefore, given this assumption of Equal Weight View, the independence principle plausibly yields the intuitively correct verdict.

Then, let us consider how the total evidence principle holds in this case. According to the case, the total evidence you have when you find that we disagree consists of the following two doxastic facts: the fact that you believe that the amount of the required tile is 23,001 and the fact that I believe that it is 23,002. As I argued in section 2.2, you should treat these two doxastic facts equally by giving equal weight.[48] Therefore, if your total evidence consists of these two facts without the original evidence, you are rational in splitting the difference as shown by the original calculation case in section 2.3.

Now, let us supplement some different details to the toilet tile case and examine whether each of the independence principle and the total evidence principle still plausibly yields the correct verdict to this case. First of all, let us suppose that you do not remember the precise numbers and also do not look at the numbers on paper again. But in this case, you remember some facts entailed by the numbers such as one that the numbers are all odd.[49]

The intuitively correct verdict to this case is that you are rational in favoring your answer over mine. And at least, this verdict to this case would be accepted by Christensen (2007) and Elga (2007)[50] as proponents of Equal Weight View (or one very close to this view) and by

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[48] Remind the following claim of Kelly (2010: 142-143) we considered in section 2.2: "it is plausible to suppose that the two pieces of higher-order psychological evidence … are more or less equally strong pieces of evidence that point in opposite directions."

[49] I think that this case preserves the crucial point of Christensen's (2007: 199) Extreme Restaurant case where two arithmetic peers disagree by one having the opinion that our equal shares to the dinner bill is $45 and the other having the opinion that it is $450 which is higher than the whole bill.

[50] Christensen (2007: 199) accepts this verdict when he discusses his Extreme Restaurant case mentioned in note 49 and Elga (2007: 491) also accepts it when he discusses a case very similar to the Extreme Restaurant case. In fact, they regard the above case or very similar ones as an apparent counterexample to Equal Weight View based on the judgment that the verdict to this case is intuitively correct.

Kelly (2010)[51] as a proponent of Total Evidence View. Then, let us examine, first of all, how the independence principle can plausibly yield this verdict.

According to Christensen (2007: 199-203), in this case, you can rationally favor your answer without violating the independence principle. Here, your ground for favoring your answer consists of your reasoning from the information that the numbers are all odd provided by your partial but correct memory about the original evidence to a conclusion that the multiplication of two odd numbers yields an odd number. You take it that this kind of reasoning is the sort of commonsense check that is much more reliable than mental arithmetic. Then, based on your commonsense check, you take it that the very reliable commonsense check supports your reasoning from the original evidence to your answer, but you do not have any reason to suppose that my reasoning is supported by equally reliable reasoning. Therefore, given these considerations about our respective reasoning, you can rationally favor your answer. Meanwhile, in favoring your answer or dismissing mine, your ground for doing so is based on considerations about your initial reasoning (considerations about reasoning that led you to initially believe as you do), but not based on your initial reasoning itself. Therefore, in favoring your answer or dismissing mine, you do not violate the independence principle that requires you to set aside your initial reasoning in evaluating the epistemic credential of my answer.[52]

Then, let us contrast this second toilet tile case with the first case where you have completely lost the original evidence and any information about it by forgetting them. In the first case, you are rational in giving equal weight to our respective answers and splitting the difference because you do not have the original evidence and any information about the original evidence (such as the information that the numbers are all odd), therefore, you do not have any ground for dismissing my answer. But in the second case, the fact that you have the

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[51] With regard to Christensen's (2007: 199) Extreme Restaurant case, Kelly (2010: 150) claims as follows: "it would be completely unreasonable for you to give any significant credence to the proposition that a share of the total bill is $450, despite the fact that this is what I, your peer, believe."

[52] Following Lackey's (2010) argument, I emphasized in the previous section that when you dismiss my opinion based on your assessment in some extreme disagreement cases, you should be justified in having your higher-order belief in your assessment of the original evidence in order to prevent the irrational reasoning of dogmatists. When applied to our present case, this point amounts to the requirement that you should be justified in believing that the multiplication of two odd numbers yields an odd number. This requirement is quite plausible because it shows why I am irrational in dismissing your (correct) answer based on my (irrational) belief that the multiplication of two odd numbers yields an even number (together with my (irrational) belief that this kind of reasoning is the sort of commonsense check that is much more reliable than mental arithmetic). See Lackey's (2010: 323-324) argument against Christensen's response to the Extreme Restaurant case.

information that the numbers are all odd together with the fact that you have correctly taken account of this information by recognizing that multiplication of two odd numbers yields an odd number constitutes your ground for favoring your answer. Therefore, just as in the first case, if you take account of the facts about our respective answers when you find that we disagree, you would be rational in splitting the difference, but just as in the second case, if you take account of the facts about our respective answers together with the information about the original evidence, you would be rational in favoring your answer. After all, the additional facts in the second case that you have the information about the original evidence and that you correctly take account of this information make a difference between the Equal Weight View's verdicts to each case.[53]

I think this is what the total evidence principle can provide as an explanation about the two cases. According to total evidence principle, what it is rational for you in believing is determined by the total evidence you have when you find that we disagree. In the first case, your total evidence consists of the two facts about our respective answers, therefore, given that these facts "are more or less equally strong pieces of evidence that point in opposite directions" (Kelly (2010: 143)), you are rational in splitting the difference by taking account of them. However, in the second case, your total evidence consists of the facts about our respective answers plus the information that the numbers are all odd. Then, by taking account of these three pieces of evidence, you are rational in retaining your answer with an extremely little bit tempered confidence.

What we need to notice is that in this explanation based on the total evidence principle, you are rationally required to take account of the information about the original evidence. In the previous chapter, I argued that Total Evidence View should not claim that you are rationally required to take account of the original evidence again because claiming this in effect amounts to concession that the justified higher-order belief cannot make you rational in favoring your opinion, therefore, claiming this amounts to giving up the main internalistic element of Total Evidence View.[54] In the similar way, one might claim that Total Evidence View should not accept that you are rationally required to take account of the information entailed by the original evidence.

I would not discuss this claim, rather, what I would say is that here, we do not need to

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[53] In the second case, if you did not take account of the information about the original evidence, you would not be rational in favoring your answer. Rather, you would be rational in splitting the difference because your favoring your answer is not based on the information you have. See section 2.4.

[54] See section 2.5.

worry about this claim because we are not discussing the plausibility of Total Evidence View. We are discussing the case where your justified higher-order belief plays no role in making you rational in favoring your opinion and we are examining whether in this case either the independence principle or the total evidence principle or both hold. Therefore, given that we are separately considering the total evidence principle from the justified higher-order belief, there is no reason to refuse the requirement that you are rationally required to take account of the original evidence again or to take account of the information entailed by the original evidence.

Another thing to note is that in the above explanation based on the total evidence principle, the independence principle still holds. Let us consider this principle again as follows:

In evaluating the epistemic credentials of another person's belief about P, in order to determine how (if at all) to modify one's own belief about P, one should do so in a way that is independent of one's assessment of those considerations that led one to initially believe as one does about P. (Kelly (2013: 40))

What this principle requires is that *in evaluating the epistemic credential of my belief*, you should set aside your assessment of those considerations that led you to initially believe as you do. In this respect, the independence principle can be understood as showing how you should evaluate the epistemic credential of evidence provided by my disagreeing opinion.

When we have a certain degree of confidence in a proposition based on evidence, our rational judgment about the epistemic credential of this evidence is important in order for our degree of confidence to be rational. For example, suppose that you have a high degree of confidence in the proposition that humankind has never been to the moon based on an article in a tabloid newspaper. But if you have enough reason to doubt the reliability of this newspaper, you would be rationally required to give a low epistemic credential to the evidence provided by this newspaper and given this evaluation, you would not be rational in having a high degree of confidence in the proposition. In this respect, the rationality of your degree of confidence depends in many parts on what you should believe about the epistemic credential of evidence based on which you have such a degree of confidence. And also, in order to have a rational degree of confidence in a certain proposition based on evidence, your judgment about the epistemic credential of evidence should be rational.

When applying this point to the present disagreement case, your judgment about the epistemic credential of the following pieces of the total evidence should be rational in order to

have a rational degree of confidence based on such evidence you have when you find that we disagree:

> The information that the numbers are all odd.
> The fact that you believe that the amount of the required tile is 23,001
> The fact that I believe that the amount of the required tile is 23,002

Your evaluation about the epistemic credential of the information about the numbers would depend on some facts concerning your memorizing ability, specific features of this situation and so on. Rather than pursuing this issue, I would like to assume that you have enough reason to judge that the information that the numbers are all odd is quite trustworthy. Then, we need to examine how you should judge the epistemic credential of the facts about our respective beliefs. As I said above, I think that the answer to this question can be given by the independence principle. According to the principle, you should not dismiss my opinion based on your initial assessment of the original evidence, rather, you should evaluate it based on some independent reasons such as the fact that I am equally reliable as you with regard to these kind of questions, I have a comparable background knowledge as you and so on. (I assume that you do not have any other reason to dismiss or defer to my opinion such as the information that I had a reasoning distorting drug or a smart pill.) This means that you should evaluate the epistemic credential of my opinion as equally trustworthy as yours. After all, this means that you should evaluate the above two facts about our respective beliefs as "more or less equally strong pieces of evidence that point in opposite directions." (Kelly (2010: 143)) In this respect, the total evidence principle need not be in conflict with the independence principle. To put it another way, the independence principle still holds in the explanation based on the total evidence principle when the former principle is understood as showing how you should evaluate the epistemic credential of evidence provided by my disagreeing opinion.

Finally, we need to consider the third version of the toilet tile case where you remember the numbers exactly, that is, you retain the original evidence. But let us revise the original case a little bit in order to prevent this third case from becoming very similar to the second case. In this third case, I believe that the amount of the required tile is 24,001 (rather than 23,002).

Before discussing this case, I need to be clear about my way of argumentation. In discussing the above first and second cases, I tested the independence principle and the total evidence one against our intuitive verdict to each case. Also, I explained that the total evidence principle and the independence principle are in harmony with the intuitive verdicts to these

cases. This means that in such cases, our different intuitions supporting the two principles are in harmony with the intuitive verdicts to the cases. In the course of our discussion in this section, the intuition, against which the intuitions behind the two principles are tested, was the intuition expressed by the verdicts to each case because this intuition is so strong that if the intuitions behind the two principles are in conflict with this, the problem is on them.[55]

But this argumentation strategy is not viable in the third version of the tile case because in this version, the intuitive verdict cannot play the role of a bedrock. Unlike the first and second cases where Equal Weight View and Total Evidence View agree on the respective verdicts to the cases, in the third case, their verdicts disagree. (According to Equal Weight View, you are rational in splitting the difference with me while according to Total Evidence View, you are rational in favoring your opinion given that the third case is the paradigmatic case where you retain the original evidence.[56]) Therefore, rather than presupposing a certain verdict to the third case as intuitively correct, we should examine which verdict is correct based on the intuitions supporting the two principles. That is, we should test the verdict against the intuitions behind the independence principle and the total evidence one.

Then, first of all, let us examine what verdict to the third case is yielded by the total evidence principle by considering the following pieces of the total evidence you have when you find that we disagree:

The original evidence about the measured result

The fact that you believe that the amount of the required tile is 23,001

The fact that I believe that the amount of the required tile is 24,001

Given this total evidence, you are rational in retaining your answer with a bit tempered degree of your original confidence by taking account of all pieces of evidence. One thing to note is that taking account of all pieces of evidence involves taking account of the original evidence again. As I argued in discussing the second case, there is no reason to prohibit you from taking account of the original evidence again (as well as taking account of the information entailed by the original evidence) given that we are separately considering the total evidence

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[55] In the criticism against the independence principle in the previous section, the intuitive verdict to the relevant cases that you are rational in favoring your opinion also played a role of the bedrock and on this bedrock, the intuition behind the independence principle and that behind the justified higher-order belief competed against each other.

[56] This requirement of Total Evidence View holds given Kelly's conception of the justified higher-order belief as all-or-nothing belief. See section 2.3.

principle from the justified higher-order belief. Therefore, according to the total evidence principle, you are rational in retaining your answer with a bit tempered degree of your original confidence by taking account of the two facts about our respective beliefs (two equally strong pieces of evidence) together with taking account of the original evidence again.

Then, let us examine what verdict to the third case is yielded by the independence principle. As I argued in discussing the second case, the independence principle can be understood as showing how you should evaluate the epistemic credential of evidence provided by my disagreeing opinion. Therefore, when applied to the third case, the independence principle requires you to evaluate the epistemic credential of my opinion as equally trustworthy as yours. But this does not mean that you should split the difference with me. For example, I showed in the above explanation based on the total evidence principle that even though you follow the independence principle by regarding the two facts about our respective beliefs as equally strong pieces of evidence, you are rational in favoring your opinion rather than splitting the difference with me. In this respect, the independence principle itself does not entail the requirement of Equal Weight View.

However, this claim seems to be in discord with the previous claim in section 3.1 that the requirement of Equal Weight View is plausibly yielded by the independence principle. In explaining Equal Weight View, I said that when the independence principle is applied to the peer disagreement case, you should think that both of us are equally likely to be correct and this yields the requirement that you should split the difference between our respective degrees of confidence.

But we do not need to regard these seemingly conflicting claims as really conflicting. This is because the claim (in harmony with the independence principle) that you are rational in favoring your opinion holds if you are rationally required to take account of the original evidence again. In contrast, you are rational in splitting the difference with me based on the independence principle if you are not rationally required to take account of the original evidence again. In this respect, Equal Weight View involving the independence principle and the requirement of Equal Weight View as its elements holds without inconsistency if you are not rationally required to take account of the original evidence again.

Then, let us reconsider our present question as follows: What verdict to the third case is yielded by the independence principle. When the above point is considered, this question cannot be answered without examining whether you are rationally required to take account of the original evidence again. Therefore, we need to focus on the latter question in order to answer the former.

Now, let us examine whether you are rationally required to take account of the original evidence again in the third case. First of all, suppose that an epistemic subject S who regards us as her arithmetic peers has the following pieces of evidence you have as the total evidence when you find that we disagree (when A is you and B is me):

The original evidence about the measured result
The fact that A believes that the amount of the required tile is 23,001
The fact that B believes that the amount of the required tile is 24,001

I think it is intuitively correct that S is rationally required to take account of all pieces of evidence. And if this is correct, S would be rational in believing that the amount of the required tile is 23,001 with a bit less degree of confidence[57] than that supported by S's reasoning of the original evidence by taking account of the above three pieces of evidence.

Having this verdict in mind, let us suppose a little bit differently that the disagreement between A and B over the amount of the required tile happened a few days ago, and an epistemic subject X, who regards A and B as his arithmetic peers, is clearly looking at the measured result on paper as well as A's and B's respective answers written on the same paper. Then, the total evidence X has would be as follows:

The original evidence about the measured result
The fact that A believed that the amount of the required tile is 23,001
The fact that B believed that the amount of the required tile is 24,001

I think it is intuitively correct that whether the disagreement between A and B happened a few minutes ago or a few days ago is not relevant to what to believe about the required tile. Also, I think that whether one gains evidence about A's and B's respective beliefs by hearing what they say or by reading what they wrote is irrelevant to what to believe about the required tile. Therefore, just as S's case, X would be rational in believing that the amount of the required tile is 23,001 with a bit less degree of confidence.

Then, finally let us suppose that the disagreement between A and B over the amount of the required tile happened a few days ago, and X is clearly looking at the measured result on paper as well as A's and B's respective answers written on the same paper. But in this case,

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[57] With regard to the reason why one should have a bit less degree of confidence, see my discussion about the third person case in section 2.5.

X suddenly comes to know that A was in fact himself. Does this change what X should believe about the required tile? According to Equal Weight View, the fact that X suddenly comes to know that A was in fact himself seems to change what X should believe about the required tile. First of all, when X comes to know this, X comes to know that he is involved in peer disagreement. [58] Then, proponents of Equal Weight View will claim that in this peer disagreement case X is involved in, X is not rational in believing that the amount of the required tile is 23,001 with a bit less degree of confidence (or X is not rational in favoring X's original answer). Rather, they will claim that X is rational in splitting the difference. I argued above that the requirement that one is rational in favoring one's opinion holds if one is rationally required to take account of the original evidence again. Therefore, according to Equal Weight View, X would not be rationally required to take account of the original evidence again in this case.

But it seems not easy to understand why X's awareness of the fact that A was in fact himself should incapacitate the original evidence in determining what X should believe. When X did not have such an awareness and regarded A as another person, X was rationally required to take account of the original evidence. Then, why does the awareness that A's opinion was in fact the opinion of X's past-self make X exempted from taking account of the original evidence (again)? That is, why does X's awareness that the belief that the amount of the required tile is 23,001 belongs to X's past-self rather than another person allow X to close his eyes to the original evidence? I think that it is implausible to award such a special status of incapacitating the original evidence to X's past-self without doing the same to another person at least in the spirit of Equal Weight View.

However, proponents of Equal Weight View would respond to this case by saying that this case should not be regarded as a peer disagreement case. This is because in this case, X does not at present have a belief about the required amount of tile, rather, have a belief that one's past-self had a belief about that. In contrast, in the third version of the tile case as a paradigmatic peer disagreement case, you have at present a belief about the required amount of tile.

Given this difference, proponents of Equal Weight View could accept that in the above X's case, X needs to take account of X's relevant total evidence including the original evidence in

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[58] Equal Weight View should accept that in order for a peer disagreement case to obtain, at least one of the disagreeing peers should rationally believe that she is involved in such a case. This is because without such a belief, the peer disagreement case would be very similar to the above S's case, the case where the requirement of Equal Weight View does not hold.

order to initially have a correct belief about the required amount of tile.[59] But they would argue that in the third version of the tile case, because you have at present a belief about that, you do not need to take account of the original evidence again in order to initially have such a belief, rather, you only need to take account of your new evidence consisting of the facts about our respective beliefs (given that ignoring new evidence is irrational.) Therefore, according to proponents of Equal Weight View, even though you retain your original evidence after you have a belief about the required amount of tile, this would not require you to take account of the original evidence again.

I think that this is correct, that is, the mere fact that you retain your original evidence does not require you to take account of it again. Also, I think that such a fact itself should not require you to take account of the original evidence again. This is because otherwise, you would never be rational until you lose the evidence. For example, suppose that one has a belief that p by correctly taking account of a piece of evidence and one retains this evidence. In this case, it is intuitively correct that one does not need to take account of the evidence again. But if the mere fact that one retains the evidence requires one to take account of it, one would not be rational in resting on this point because one is rationally required to take account of the evidence again. However, even if one takes account of the evidence again in order to be rational, one would not be rational in resting on this further point because still one is rationally required to take account of the evidence once again given that one retains the evidence. Therefore, one would never be rational until one loses the evidence. But this is implausible, so the mere fact that you retain your original evidence itself should not require you to take account of the original evidence again.

Given the point, are you not really required to take account of the original evidence again in the third version of the tile case? Or to put it another way, do you have no reason to do so unlike X's case where X has reason to take account of the original evidence (again)? I think that you have equally good reason as X's one. In X's case, X is rationally required to take account of X's total evidence in order to initially take up a correct belief about the required amount of tile. In the third version of the tile case, you aim to have a correct belief about that. But as Kelly (2010: 139) argues, my disagreeing opinion plays a role of higher-order evidence "to the effect that [you are] currently in circumstances in which [you are] more likely than usual

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[59] X would need to take account of the two facts about the belief of X's past-self and B's belief at least if they are relevant to what one should believe about the required amount of tile. With regard to the relevance of higher-order evidence to a first-order belief, see section 2.1 and 2.2 as well as Kelly's (2010: 137-138) argument about his mathematical conjecture case.

to have made a mistake in responding to [your] first-order evidence."[60] That is, my disagreeing opinion is evidence to the effect that you might have been irrational in responding to the original evidence. Given this possibility of irrationality, you are rationally required to check your reasoning from the original evidence to your belief in order to have a correct belief. This check would include what Christensen (2007: 201) calls the sort of commonsense check shown in the second version of the tile case. But when this is not available to you just as in the third version of the tile case, you would be rationally required to take account of the original evidence again in order to check your reasoning and in order to achieve your aim to have a correct belief.[61]

As alluded in this argument, proponents of Equal Weight View in fact need to concede that you are rationally required to take account of the original evidence again in order to respond to the second version of the tile case. In this case, you have reason to do commonsense check because it is available to you and my disagreeing opinion indicates the possibility of your irrationality. In this respect, you are rationally required to do commonsense check. Meanwhile, notice that the reason why you are rationally required to do so is not that doing commonsense check allows you to initially take up a correct belief about the required amount of tile just as in X's case. If your reason were as thus, you would not need to do commonsense check given that you already have a correct belief about that. Rather, the reason why you are rationally required to do commonsense check is that you have (higher-order) evidence indicating the possibility of your irrationality in having responded to the original evidence. Therefore, given this possibility of irrationality, you are rationally required to check your reasoning from the original evidence to your belief in order to correctly believe about the required amount of tile.

But if the possibility of your irrationality together with your aim to have a correct belief requires you to do commonsense check, it seems arbitrary to argue that you are not rationally required to take account of the original evidence again given that doing so allows you to check your reasoning against the possibility of irrationality as the commonsense check does. That is, given that the reason why you are rationally required to check your reasoning is to respond to the possibility of irrationality in order to believe correctly, it seems arbitrary to distinguish

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[60] I accept this point as uncontroversial between Total Evidence View and Equal Weight View.

[61] As this argument shows, you are required to take account of the original evidence again when my disagreeing opinion makes you rational in thinking that you might have been irrational in responding the original evidence. However, my disagreeing opinion need not make you rational in thinking as such in all cases. In particular, in rational disagreement cases where disagreeing peers are equally rational in having their respective beliefs, you would not need to think that you might have been irrational in responding to the original evidence when my disagreeing opinion is given. See section 2.2. Also, I will consider this case in the next chapter.

between doing commonsense check and taking account of the original evidence again given that both of them provide you what you need, namely, the checking of your reasoning against the possibility of irrationality. Then, proponents of Equal Weight View should concede that you are rationally required to take account of the original evidence again in the third version of the tile case if they want to retain their response to the second version of the tile case.

Now, we can answer our following original question: What verdict to the third version of the tile case is yielded by the independence principle. I said that in order to answer this question, we need to answer to the question about whether you are rationally required to take account of the original evidence again. Given the above argument, the answer to the latter question is that you are rationally required to take account of the original evidence again. As I argued above, if you are rationally required to do so, you are rational in favoring your opinion. Therefore, the correct verdict to the third case yielded by the independence principle should be that you are rational in favoring your opinion.

Before discussing the third version of the tile case, I said that unlike the first and second cases where Equal Weight View and Total Evidence View agree on the verdict to these cases, in this case their respective verdicts disagree. Therefore, I said that rather than presupposing a certain verdict to the third case as intuitive correct, we should examine which verdict is correct based on the independence principle and the total evidence principle. In this argumentation strategy, the best verdict would be one in which both of two principles hold given that they might conflict in some other verdicts.[62] In this respect, the verdict to the third version of the tile case that you are rational in favoring your opinion is desirable as it satisfies the two principles.

Finally, I need to say something more about the relation between the independence principle and Equal Weight View. According to the above argument, the independence principle need not entail Equal Weight View, and when you are rationally required to take account of the original evidence again, it does not entail the view. But I think that in some cases where my disagreeing opinion does not make you rational in thinking that you might have been irrational in responding to the original evidence or in some other cases where taking account of the original evidence again does not play a role of checking your reasoning mistake, you are not rationally required to take account of the original evidence again. In the next and final chapter, I will briefly discuss such cases.

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[62] For example, if you were rational in splitting the difference in the third version of the tile case, the total evidence principle could not hold in this verdict.

4. Conclusion

In discussing Total Evidence View and Equal Weight View, I have dealt with cases involving arithmetic questions. But unlike these cases, real world disagreement cases including disagreement over, for example, political policies or philosophical claims[63] are much more complicated. In particular, unlike our cases where disagreement indicates the fact that one of us has failed to take account of the original evidence correctly, in the real world disagreement cases, disagreement need not indicate such a fact. For example, suppose that you and I, as members of a jury, disagree over whether an arrested criminal is guilty after very carefully taking account of our shared evidence for several days. In this case, our disagreement need not indicate that one of us has failed to take account of the original evidence correctly. Rather, you might have enough reason to think that our disagreement originates from our comparable but conflicting background beliefs or our comparable but conflicting weighing to the epistemic principles such as simplicity and fit to the data. In this case, my disagreeing opinion would make you rational in thinking that some other factors such as our comparable but conflicting background beliefs made us disagree rather than thinking that you might have failed in correctly taking account of the original evidence. But even if you do not have such reason, my disagreeing opinion would not make you rational in thinking the latter, if you have enough reason to think that we have very carefully taken account of our shared evidence for several days. In this case, you would be rational in thinking that some other factors such as our comparable but conflicting background beliefs made us disagree rather than thinking that you might have failed in correctly taking account of the original evidence.

In these cases, you would not be rationally required to take account of the original evidence again. This is because given that our disagreement does not indicate that one of us has failed to take account of the original evidence correctly, you do not need to check your reasoning from the original evidence to your conclusion.

Then, what is the correct verdict to this case? I think that in order to answer this question, we need to answer several other questions first including whether there can be a rational disagreement case where disagreeing peers are equally rational in having their own beliefs, and if any, how they should evaluate the epistemic credential of the other's belief in order to

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[63] Real world disagreement case includes peer disagreement about a correct view on peer disagreement problem (for example, disagreement between a proponent of Total Evidence View and that of Equal Weight View over the correct view on the peer disagreement problem). With regard to this kind of disagreement, see Elga (2010), Christensen (2013), and Weatherson (2013).

revise one's own belief in such a case.[64] I think that to discuss real world cases by answering these questions is very important because such cases are what we ultimately want to understand by discussing the peer disagreement problem, but I cannot pursue this here.

Nevertheless, when considered together with the discussions in the previous chapters, the above real world case serves as a good lesson. What I have done in discussing Total Evidence View and in particular Equal Weight View is to distinguish cases according to different intuitions. For example, in dealing with the case where you calculate your maintenance fee six times, I argued that the correct verdict is plausibly yielded by your justified higher-order belief with a high degree of confidence. I also argued that in this kind of cases, both the independence principle and the total evidence principle do not hold. But in dealing with other cases, in particular, the tile case where you have a justified higher-order belief with a moderate degree of confidence, I showed that the two principles hold while your justified higher-order belief is irrelevant to the verdict to such a case. Also, by distinguishing the three versions of the tile case, I argued that the difference between the details of the three versions about your memory concerning the original evidence makes the correct verdict to this case varied and also makes it varied which intuition we should regard as basic against which other intuitions are tested. What all these cases show is that it is hard to provide a comprehensive account to different peer disagreement cases by relying on a single intuition. Moreover, given the above jury case, this task seems far from viable.

The upshot of our discussion thus far is that the cases under the single title of "peer disagreement" are heterogeneous, that is, they disagree with each other.

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[64] Also, we need to respond to some problems such as skepticism arising from taking up a certain view about the correct verdict.

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