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Modal Notions and Semantics

by
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Presented in Partial Fulfillment of the Requirements of Independent Study Thesis
Research

Supervised by

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Department of Philosophy

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Preface

I must thank professor Garrett Thomson for his support, without which I could not finish my I.S. Especially during the last three months, life has been quite difficult for me, but his encouragement alone is strong enough for me to pull up myself and maintain my focus. This project is half a self-entertainment and half a self-challenge. Philosophy, although being my major, is not my strength; how I came to major in Philosophy is a complicated story, but I quite enjoy every class I had in this lovely domain. In my Junior year, I took ontology with professor Schiltz, and we had a conversation about Lewis and his theory about possible worlds. At that time, I merely feel quite bizarre to believe these worlds exist and could serve as means to understand modality; I wrote an essay full of critique on his theory, but I could understand why half of the contemporary philosophers were happy to accept his methodology as a valid theory to investigate modal sentences; and professor Schiltz encouraged me to make this topic as my I.S.

I must admit this I.S. isn't something I dreamed at the first place. I was trying to create something new, something fantastic that I can tell myself that I achieved something. But solving a dichotomy and finding a third position has been proved to be much more difficult than I imagined, so in the end I can only find a possible way that can serve the background for my future study on modality.

But the journey of writing the I.S. is enjoyable, although from time to time I wished I had chosen a different topic like ethic, which is something that can always be easily thought of. Philosophy of language is difficult, because it is very abstract. Although we speak every day, but not many people would like to pay attention to our language. Language is intimately related to our mind, our episteme, and humanity, which is the reason why Quine believed that to answer

his Epistemological problem, he had to have a language theory first. But creating a language theory is hard, not only because philosophy itself is a project of language, also because a theory of language might change every other philosophical subject, and one must be careful when he wants to introduce a new language theory.

Essay One: The Dichotomy Between Quine and Lewis

Introduction:

We use modal sentences every day, as I have been saying to my fellow students all the years that “I could have majored in mathematics, had I not been charmed by the faculty of our department”; and yet for many logicians and linguistics, the meaning of those sentences is unclear. I would beg you not to laugh at my statement, as I have no doubt you understand what I mean when complaining my major; however, troubles about modal sentences have an old root. In ancient time, Aristotle was skeptical about modal sentences; for him, and for many other contemporary philosophers such as Quine and Davidson, understanding a sentence is to tell its truth value (i.e. in what condition makes it the sentences true or false). Dreadful as modal sentences seem to Aristotle, he says that we cannot tell the truth value of modal sentences because there is none; and therefore, we should not talk about them as meaningful sentences. In the sentence “I could have majored in mathematics, had I not been charmed by the faculty of our department”, I surely cannot observe any facts that tells me the truth value of the sentence, nor can I make a sound deduction to obtain its truth value. Now, it seems like I know what it means and don’t know what it means at the same time, as if I had locked myself in a room and lost the key.

At this stage, though, I think I must address a distinction between causal modality and semantic modality; or if you prefer, you can call it physical modality and logical modality. The modal sentences we are concerned here are restricted to semantic modality. I think causal modality, although worth studying, is less interesting than the semantic one, and including both is too much for a single project. Causal modality, simply put, means that something is possible or necessary based on the casual laws and observable facts. E.g., it is impossible that I can fly

without any tools. Semantic modality, as the name suggests, is to do with semantics, which is what we are going to investigate in the rest of the essay.

Now, having restricted our concern to semantic modality only, we have two positions in a dichotomy. Both positions have their influences in contemporary debates. One is the modal realism led by David Lewis, which in general says modal idioms, such as possibility and necessity are real, and can be analyzed extensionally. The other is the Eliminativism¹ led by William Van Quine, who says, quite like Aristotle but more extremely, that modal sentences are all false, and should be deleted from our language uses. Each side gives us some insights into the issues but has its drawbacks as well. In the following pages, I shall attempt to explain their positions and diagnose them. The main goal of this project is to find a third position, and claim this dichotomy is a false one.

Part A: David Lewis and Possible World Realism

1. Possible World Realism

David Lewis tries to build a semantic theory of modal sentences through possible world realism. He claims that there are possible worlds other than the one we are living on. His argument for his realism on possible worlds is not based on any metaphysical assumptions. But rather, he gives his argument by pointing out it is not controversial to say something might be otherwise than they are. He then paraphrases this claimant to there are many ways things could have been besides the way they are. Lewis says this sentence is an existential quantification, which says

¹ Eliminativism is a position in philosophy of language that claims all intensional sentences are false and should be eliminated. Intensional sentences are those which are referentially opaque, which means substitution of co-referential terms might change the truth value of the sentences.

there exist many entities of a certain description, “ways things could have been”. And “ways things could have been” shall be called as “possible worlds” (Lewis, 1973, 83).

It is uncontroversially true that things might be otherwise than what they are. I believe and so do you, that things could be different in countless ways...Ordinary language permits paraphrase: there are many ways things could have been besides the way they actually are...taking the paraphrase at its face value...I prefer to call them “possible worlds” (Lewis, 1973, 83).

Lewis is aware of that one shouldn't take seeming existential quantifications in ordinary language at their face value, but he says this operation is not allowed only when taking them at face value would lead into troubles or taking them some other ways is known not to. And in Lewis' point of views, neither of these conditions is met; therefore, Lewis argues, treating the sentence, “there are many ways things could have been other than the way they actually are” into an existential quantification makes sense perfectly (Lewis, 1973, 83). Though I shall not argue against his bold claim at this stage, we might consider the possibility that quantifying “many ways things could have been” will indeed cause some semantic or logical falsity. However, for explaining Lewis' theory, we shall leave this claim untouched for now.

Lewis suggests we can quantify our modal sentences into the following forms:

A is possible => There is a possible world where A is true.

A is necessary => All possible worlds are those where A is true.

A is impossible => There is no possible world where A is true.

A is unnecessary => Not all possible worlds are those where A is true.

2. Two Propositions for Possible World Realism

i) Lewis thinks treating possible worlds as entities is the only way to construct a valid theory of modal semantic. First, he denies treating modal idioms as unanalyzed primitives as a theory at all. Doing so, in virtual, merely tagging another term to “possibility” and “necessity”, which yields not a theory, but a substitution of names. Second, he denies treating modal idioms as metalinguistic predicates that we can analyzed in terms of consistency would yield any plausible theories. He argues that if a consistent sentence is one that could be true, or one that is not necessarily false, then the theory is circular, since it assumes the question on the table. If a consistent sentence is one which is true under some assignments of extensions to the non-logical vocabulary, the theory is incorrect, because some assignments are impossible (e.g., it is impossible to assign overlapping extensions to “pig” and “sheep”). If a consistent sentence is one which is true under possible assignment, then the theory is again circular.

Also, Lewis think it is false to take modal idioms as quantifiers over “possible worlds”, which are really some respectable linguistic entities (Lewis, 1973, 85).

We might call them (modal idioms) as quantifiers over so-called “possible worlds” that are really some sort of respectable linguistic entities: say, maximal consistent sets of sentences of some language...We might call these things “possible worlds”, but hasten to reassure anyone who was worried that secretly we were talking about something else...The theory would be either incorrect or circular, according as we explain consistency in modal terms or deductive terms (Lewis, 1973 85).

Here, Lewis thinks that taking modal idioms as modal quantifiers offers us no good other than complicate the issue. Doing so, we either accept that the quantification will appeal to the

consistency of a sentence, or we will build a theory which is purely based on modal theoretic terms, which is false or insufficient for a semantic theory.

ii) the word “actual” as an indexical element in his theory. Possible worlds are not different in kind, but in what happens in them. For Lewis, world is defined by its connected properties; in nature, all possible worlds are the same. The world we live in is only one among all possible worlds. We call it alone actual world merely because it is the world we inhabit. Lewis says his indexical theory of actuality is the twin of a doctrine of time. The present time is one among others, which we call as present time only because it is the time we inhabit; and there can be inhabitants in other time call theirs “present”. The Essen of this idea, is to reject the metaphysical differences between “actual things” and “possible things”. For Lewis, the world “actual” serves only as an indexical speaking about the things happening in our living world. Fundamentally, the “possible things” and “actual things” are just designators for things in different worlds (Lewis, 1973, 86).

3. Transworld Identity and Counterpart Theory

A challenge Lewis faces when he is constructing a semantic theory of modality through possible world realism, is that it might lead us to 1) a part of a world is also a part of another world, and 2) two worlds are overlapping. The first question is about trans-world identity. If the sentence “Benedict Cumberbatch might have been the Prime Minister of England” is to be quantified over a possible world where Benedict is the Prime Minister, then it seems that Benedict is a part of two worlds; and somehow, he will have different properties in different world. The other question, Lewis says, is a question that leads us to the *problem of accidental intrinsic*. If, we think that shape of Benedict is one of his intrinsic properties, and if two worlds where Benedict

have two arms in one world and one arm in the other are overlapping, then it would cause “having two arms” and “having one arm” both the intrinsic properties of Benedict, which is apparently a controversy (Lewis, 1968, 116).

Lewis think that both problem can be solved with the counterpart theory. In the simple form, the theory says that the *de re* in each possible world is a counterpart to one and others. The sentence “Benedict Cumberbatch might have been the Prime Minister of England” does not implies Benedict is part of more than one worlds, nor these worlds are overlapping; instead, the sentence should be quantified over a possible world where the counterpart of Benedict is the Prime Minister. “Benedict Cumberbatch” names not a specific counterpart, but the trans-world individual who is the mereological sum of all counterparts.

Giving his counterpart theory, there must be some connections in terms of similarity for all counterparts. He approaches this problem by suggesting that an individual is a set of stages. In short, an individual Y has a counterpart Y*, if and only if in some ways some stags of Y also belong to Y* (Lewis, 1968, 118).

4. Conclusion

Lewis’ theory of modal sentences is to quantify over possible worlds, not to quantify over modal sentences. In fact, the called modal idioms, such as possibly and necessity, are convenient speaking about things that happen in different world. Doing so, Lewis cunningly shift modal sentences from intensional sentences to extensional sentences. Intensional sentences are those which are referentially opaque, meaning substitution of co-referential terms may cause some absurdity or change the truth value of the sentences, while extensional sentences are referentially transparent, meaning substitution will leave the truth value of the sentences intact. Let us

consider “It is possible that the number of planets in solar system is smaller than 7”, which semantically speaking is perfectly fine; but if we substitute “8” to “the number of planets in solar system” it renders the sentence, “it is possible that 8 is smaller than 7”, which is false. But on the surface, Lewis’ theory seems to have avoided it; because possibility is no longer a sentential operator as it was in the case I just showed, it is a quantification over some worlds, where the number of planets in solar system is indeed smaller than 7. In those worlds, the number might be 5, 4, or 6, and “8” will no longer be a co-referential term for the “number of planets in solar system”. It is a cunning switch, but the result is promising, since his opponent, namely, Eliminativists claim modal sentences should be deleted exactly because they are intensional. Also, extensional sentences are far easier to analyze and format than intensional sentences. But we must remain skeptical about the postulation of possible worlds, as it is not clear if we should accept the existence of those worlds; and those extra worlds might cause us troubles in other subjects. Further, we must question whether it is necessary for a meaningful sentence to have concrete extension. Lewis’ presupposition is that modal sentences must refer to possible worlds, which are real, to be meaningful. However, many meaningful intensional sentences (let us put Eliminativism aside for this moment) do not have concrete extensions; e.g. “Harry Potter defeated Lord Voldemort and ended the third Wizard War” is meaningful but does not have extensions.

In the counterpart theory, Lewis utilizes some essentialist aspects. What the theory does is to solve problems about trans-world identity and double lives; in the process, Lewis disintegrates entities into sets of properties, and determine which one is the counterpart of which. It should be noticed that Lewis only utilizes some aspects of essentialism, but his theory is not an essentialist theory. Because an essentialist theory in nature is about causal modality, but Lewis’

is a semantic modal theory. What the counterpart theory suggests is an entity is a counterpart of another if it meets such and such conditions, but counterpart theory itself is not a modal theory. However, if I am not mistaken on what counterpart theory suggests, the counterpart is not identical to the subject of modal sentences. “It is possible that Benedict would have been the Prime Minister” means his counterpart in a distant world is the Prime Minister; then I am no longer talking about the Benedict in my mind anymore. Am I talking about the sexy British movie star, or a completely different person who I have never heard of. For many cases, name is indexical and it is a rigid designator, it seems the counterpart theory leads the main theory to an absurdity, where we talk about a different thing than the one we intend to. Nevertheless, we shall continue the discussion after we say more about Quine and Eliminativism.

Part B: Quine

1. Semantic positions

One of the most important positions that Quine has made is extensionalist view of language. Quine thinks that something must have a clear criterion to exist. For instance, we can know what is “one” with respect to a table. However, we cannot know what counts as “one” in terms of one idea or one belief; because psychological states such as belief and desire are not countable, they do not have a clear indication of existence, therefore they fail the condition of existence. Intensional languages, following thesis of extensionality, would be false. Thus, Quine thinks that a semantic theory of language must be extensional, without postulating intensional entities such as “meaning” (Gibson, 1986, 33).

Furthermore, Quine thinks theories do not confront the world in terms of individual assertions such as “the cat is on the mat”. In other words, we cannot talk about individual

sentences as being reducible to a set of assertions about placement of objects in space and time. Thus, understanding a sentence requires knowing its relationship with respect to a whole umbrella of concepts (Gibson, 1986, 33).

It should be noticed that Quine is a radical Empiricist, and he thinks there exists no a priori philosophy. Language is a social art which we learn through observations of people's behavior in various circumstances.

2. Naturalistic interpretation of language

One of the problems of Quine's semantic theory is that he is building a semantic theory for understanding sentences without the notion of "meaning". Quine's solution is to treat the concept of "meaning" as a form of behavior. The famous example is Quine's rabbit. What a sentence means is basically an assertability condition; under some conditions. One can give an affirmative answer to the question. If we travel to a foreign land where we do not understand the language of the locals. We can radically interpret a sentence by a set of questions (pointing at an object and asking what it is; pointing another similar object and asking if it is the same as the first one). And if we say we know the "meaning" of "rabbit", what we should say is "that thing is 'rabbit' is true".

Quine also thinks the what a sentence means is also underdetermined by our observations of linguistic behaviors. Since he is an Empiricist, he denies there would be a principle to justify any specific theory about our sense input. When there are two different theories which in their own terms can satiate sufficient explanations on the same object, the object is underdetermined by the theories. Although we can have a theory to say the utterance means "a rabbit" in the foreign land, it also can mean "good hunting" or something else. Naturalistic interpretation does

not provide us the “meaning” of linguistic behavior, but it is best candidates to replace “meaning” in Quine’s theory of language (Gibson, 1986, 79).

3. Modality

Quine is very opposed to the notion of Modality. He thinks that Modality 1) conflates “use” and “mention”, 2) becomes nonsensical when been unrestricted quantified, and 3) becomes vacuous when been restricted quantified (Gibson, 1986, 151).

Quine argues that conflation of “use” and “mention” is irresistible for modality. Consider: “It is necessary that $8 > 4$ ” implies “ $8 > 4$ ” is analytic. But the expression “ $8 > 4$ ” is mentioned in the first sentence, whereas used in the other one. To build such connection will result the conflation between “use” and “mention”, which is problematic in both logic and semantic (Quine, 1961, 234). The main problem, as you should be aware after I address the intensionality of modal sentences, is it will cause falsity or absurdity. Consider another set of sentences: “It is necessary that $8 > 4$ ” and “Necessarily the number of major planets in solar system is bigger than 4”. Quine thinks that the first sentence is true but the second is false or absurd. Although the number of major planets in solar system is in fact 8, the reference in the first sentence does not contribute to the truth value of the second. Quine thinks the two sentences are referentially opaque, which means the substitution of the referential terms can result the change of the sentence’s truth value. Therefore, the unrestricted quantification of modality is nonsensical. Or to put in the manner of an Eliminativist, Quine thinks modal sentences are all false because they are intensional.

If we were to legitimate quantification into modal position by postulating that when each of two open sentences uniquely determines one and the same object, the sentences are equivalent

by necessity (restricted quantification), there would be some undesirable consequences for modality (Quine, 1960, 197). First, it would indicate that identities are necessarily identities, which sounds bizarre. Second, it will imply that every true sentence is necessarily true.

Following this, the modal notion of necessity will collapse, and become redundant.

Quine, however, suggests that for modality to survive, we have to accept Essentialism in some degree (Gibson, 1968, 152). Essentialism says that for an object, there are essential traits and contingent traits. For example, we can argue that the number designated by “8” is an essential trait of the number of the major planets in solar system, hence it follows the set of sentences we demonstrated above. So, in Quine’s opinions, accepting modality means also accepting Essentialism; however, given his commitment into Naturalistic Behavior theory of language, Essentialism is not acceptable for Quine. Also, in the end, Essentialism is good as long as we are talking about causal modality, for semantic modality is somewhat beyond the reach of Essentialism.

4. Conclusion

The main reason why Quine is against modality is the intensionality of modal sentences; however, setting his Eliminativist view aside, we have some important aspects to consider. First, if we are to quantify modal sentences, we must be aware of the conflating between use and mention, as it would bring about some undesirable consequences due to the intensional nature of modal sentences; or maybe the intensionality comes from the conflation instead. I bring this question to the table because it might help us think about the problem of modal sentences. In “it is possible that the number of planets in solar system is smaller than 7”, is in the form $\diamond that p$, where p is both mentioned and used at the same time; it is mentioned when we think the sentence

as “something is possible and that thing is called p ”, but it is also used because the sentence implies “the number of the planets in solar system can be smaller than 7”. It seems absurdity of modal sentences are stick right at the intensional content. Understanding modal sentences under a logical layout requires the sentential operator to bound the predicates; whereas in many cases sentential operator cannot bound the intensional content of the predicate successfully, conflating use and mention then becomes very convenient for modal logic to dissolve the intensionality by treating the intensional content as an “entity” used in a sentence. It is undeniably fallacious, because I can eat pizza but cannot eat “pizza”. Now it seems to solve Quine’s concern on the conflation, we can either find a solution to bound the intensional content, or find a way to explain modal sentences without formal logic. But either way, at this stage, we are merely tasting the issue, and further discussion will be left for the future.

Quine’s Eliminativist view, however, is less profitable than his insight on use and mention. Even if in the end, we could not find a treatment to the intensional nature of modal sentences, we should not disregard it as whims in the air. Eliminativism is false ontologically and semantically, but for the current purposes, we shall leave the details until we discuss Quine’s position on modal sentences in depth. Intensional sentences play an important role in human life; we address our wishes, we share our sympathies, we acquire knowledge and understanding, and all these activities require the use of intensional language. To accept Eliminativism means to deny them all, and this may cause more harm than its supposed good.

Part C: The Debate

What are the differences between these two? If we are to find a third position, we must know where they differ and where they agree. I shall address the issue under following sections.

1. Quantifications of Modalities

Lewis' modal theory relies on quantification over possible world. A modal position is understood as quantifying over a possible world which has the object with such and such properties. As result, modal idioms are no longer the sentential operators as they serve in most of the modal logics. The quantification of modal sentences will just do well in Lewis' theory without the troubles in Quine, because all modal sentences will become assertions about the existence of worlds, and therefore no conflation of use and mention will occur. Also, Lewis clearly address that possibility and necessity are not quantification over modal sentences, which basically means he doesn't think we should quantify modal sentences in terms of consistency as restricted quantifier. Quine, as we can see, does not believe the quantification over modal sentences can work at all. His position stands on a traditional ground regarding modal sentences, where possibility and necessity are sentential operator. It for now is unclear which one should we side with. Treating modal notions as sentential operators will lead us into trouble regarding use and mention, as well as intensionality; however, accepting modal realism may also bring us other problems that we must solve. Also, we could find a position which does not require the quantification of modal sentences, but doing so will undeniably raise many concerns and objections.

2. Theory of Meaning

Quine has a truth value theory of semantic, aside from his naturalistic theory and Eliminativist theory. Remember, the ultimate project of Quine is epistemology, that he was trying to give an account for human understanding, how we understand the meaning is essentially understand its truth value, and that is why Quine sees no possible theory for modal semantics as the truth value

of modal sentences are unclear. Lewis, however, may not have a truth value theory of semantics. First, Lewis has no use of truth value in explaining modal sentences in terms of possible worlds, not on its surface at least. And second, truth value is something to be known and understood, but superficially, we do not know about possible worlds. I think Lewis' theory is closer to a referential theory of meaning, without any regard to the truth value, the meaning of a modal sentence simply refers to a set specific worlds. And, we should notice that Quine's theory of meaning is a developing theory through observing naturalistic linguistic behavior. It is not given by any purely analytical deduction, because of his Empirical position. But Lewis', specifically in his modal theory at least, has an analytical account for some degree. Because his approach is based on "it is not controversial to think things might have happened otherwise than the way it is", and the idea about possible worlds are not so much a naturalistic behavior, it functions more like a deduction and explanation over the modal sentences. But there is one thing that Quine and Lewis share in common; both think that meaningful sentences must have concrete extensions. Quine says that because the intensional content of modal sentences cannot refer to any intensional entities, they must be meaningless; while Lewis thinks that meaningful modal sentences refer to real possible worlds. They differ on if modal sentences refer to something, but their position presuppose the same thing.

3. A Conclusive Comment

If it is allowed, I wish focus mainly on Quine in this small paragraph. The reasons are, first, it is not easy to reject Quine's Eliminativism and it is better to cast some preliminary concerns for us to understand the issue clearly; and second, Quine theory of modality is more of a rejection than a positive one. I have said a little about Eliminativism, but now I want to make my comments

clear. Eliminativism is based on a false assumption, which is the extensionalist view on language. Extensional sentences have their advantages on most of the scientific subjects, but they are only a part of our language usage. To claim that only extensional sentences can be true will ultimately make almost every sentence in our ethics, literature, art nonsense. But a simpler question might come into our mind: don't I believe the earth is orbiting around the sun? My point is simple, Quine should not posit the elimination of modal sentences because of their intensional nature.

However, surprisingly, Quine contributes many wonderful questions, excluding his Eliminativist view, on modality. Are modal sentences, unavoidably, conflating use and mention? And, can we quantify modal sentences, and have an extensionally specified modal logic? Although we reject the Eliminativist view, these amazing questions remain still. And for the rest of this little project, I will try my best to answer each.

I shall put a detailed rejection to Lewisian positions in the next essay. For now, my small comment shall be: neither reification of intensional items, nor constructing a tower on a hollow ground does us any good. Although Lewis is self-assured about the existence of possible worlds, we do not have any good reasons to believe in such entities. The flow of his ontological theory of possible worlds comes from the need of his semantic theory, which says that modal sentences refer to real extension and thus can be meaningfully analyzed. I think this move is quite arbitrary because we usually need to clearly understand what is and what is not before stepping into how we want to apply our ontological understanding. For now, I will keep the details until the next essay.

Essay Two: Rejecting Lewisians

Introduction:

Previously, we have set out the dichotomy, and in this essay, I will argue that Lewisian positions are problematic. My argument has two components: first, de re modal sentences will be all false in Lewisian theory because de re reading neglects the indexical of proper names; second, Lewis' possible world semantic as a semantic theory cannot capture the intensionality of the sentence. Also, in this essay, I will analyze some weak Lewisian theory which denies the existence of possible worlds, while still maintaining a realistic view of modal notions. For the last part, I will discuss some alternative positions that fail to solve the dichotomy.

Part A: Problems with Strong Lewisian Theory

1. Modalizing de re and de dicto

“De re” means “of, concerning a thing”; “De dicto” means “of, concerning something having representative content, such as a sentence, statement or proposition”. Consider the following sentence “Garret believes the garbage boy in the local MacDonald is slow and daft”. This sentence is ambiguous as it can be constructed in both de re and de dicto fashions. Constructed de re, it means Garret has believes about a particular individual, who is the garbage boy in the local MacDonald, such that this individual is slow and daft. Constructed De dicto, it might be the case Garret has never met the garbage boy in the local MacDonald, but nevertheless he believes that whoever this person might be, he is bound to be slow and daft. The concept is quite easy to digest on the surface, but as the example shows, a sentence might be ambiguous with respects to de re and de dicto; when it comes to such cases, constructed differently might yield different interpretations and meanings.

The de re, de dicto distinction is crucial to how we are going to analyze, and reject Lewis' possible world semantics. Consider the sentence "Possibly, the CEO of the biggest company is heavier than the headmaster of the most expensive university". Following Lewisian instruction, we can construct the sentence in two ways: constructed de dicto, "there is some world where x that is the CEO of the biggest company is heavier than y that is the headmaster of the most expensive university"; constructed de re, "In the actual world there is an x that is CEO of the biggest company and there is a y that is headmaster of the most expensive University, and there is a world w , where there is an x -counterpart z and a y -counterpart, u , such that z is heavier than u ". The first reading, which is a de dicto sentence, has no particular absurdity or unwanted falsehood; because it is not about specific individuals, but a proposition, such that in some world, whoever so and so is heavier than whoever thus and thus. However, if we are to investigate the second reading, there are some unwanted falsehood and absurdities. First, the sentence would be outright false, if there are no such person who has the given properties in the actual world. But this situation, at least in most linguistic analysis, is not the primary concern. The second problem, however, requires our attention; when we have a de re reading about the sentence in the example, the names refer to the individuals in our world, or the actual world; but de re reading of its Lewisian rearrangement, the sentence is no longer concerned with the individuals in our world, but the counterparts in other worlds instead.

If this does not trouble some people, then let us consider the following example. "Possibly, my mother is a nurse than a doctor", of course, although being bizarre, I can read the sentence as de dicto, such that I never knew my mother, but there are worlds, where x is my mother, and whoever that might be, is a nurse other than a doctor. But if I read the sentence as a sentence about *my mother*, Lewisian approach will render the sentence into the following

statement, “in my world, there is an x that is my mother, and in another world, there is an x -counterpart y , such that y is a nurse than a doctor”, and now I have to face one of the hardest question in my life—which one is my mother? If the *de re* Lewisian reading is true, then it is the counterpart of my mother that is a nurse than a doctor, but when I was writing the original sentence, I am talking about my mother in the actual world, not her counterpart, as “my mother” in this sentence, is a rigid designator (Kripke, 1980, 5). However, if I want to avoid such absurdity in Lewisian approach to modal sentences, I must, in these cases, have a *de dicto* reading of the sentence; which also, creates absurdity in another sense. When I say, “my mother could be a nurse”, the intensional content embodies the speaker’s intention, and my intention behind the sentence, is related to my mother; but a *de dicto* reading cannot show the intensionality of the sentence, because a set of predicates do not express the indexical to which my intention is related (Perry, 1979, 20).

In fact, the confusion of *de re* and *de dicto* in Lewis’ theory roots in his realistic view of possible worlds. When quantifying a modal sentence in world-restricted manner, the absurdity of any *de re* modality becomes unavoidable. As we have foreseen in the previous essay, the counterpart is not identical to the individual in the actual world, but *de re* modality is the modal sentence about a specific thing, entity, or individual; its counterpart is not going to help explain what we mean when uttering a modal sentence about things in our world.

2. Logical Fallacy

Brian Ellis, Frank Jackson and Robert Pargetter have pointed out a crucial logical problem in Lewis’ modal semantic theory ((Ellis, Jackson and Pargetter, 1977, 355-357). The idea, I believe, has a strong affinity to Quine’s concern about modal logic. Lewis’ theory thrives upon the

convenience of measuring modal notions without further messing with intensional contents, because the we only quantify worlds, not any sentences. However, the intensional nature of modal sentences will cause many troubles when we put possible world semantic in a logic system. First, Ellis says that there is a theorem a successful modal theory must have and one must not have:

(T) $[(A \vee B) \Box \rightarrow C] \supset [(A \Box \rightarrow C) \& (B \Box \rightarrow C)]$

(N) $[(A \& B) \Box \rightarrow C] \supset (A \Box \rightarrow C)$ (Ellis, 1977, 356)

He says that a successful modal theory must have (T) and not have (N). Consider the example: “If I held ticket number one thousand or ticket number one thousand one, I would have won the lottery”, both ticket number must win me the lottery for the sentence to be true. And in the sentence, “If I had ten million dollars and a house in California, I would have quit my school”, both “ten million dollars” and “a house in California” must stand at the same time; only one of them cannot make the sentence true. However, remember that in Lewis’ theory, a modal sentence is explained by possible worlds, which are defined as sets of properties. In formal logic, this can be expressed as:

(W) $[(p \& r) \vee (p \& \sim r)] \Box \rightarrow q]$

And because possible worlds, by design, are extensional entities, and any modal sentences are to be analyzed extensionally in Lewis’ theory, (W) is equivalent to $(p \Box \rightarrow q)$. However, given (T), we would conclude that $[(p \& r) \Box \rightarrow q]$. And we would have the following result: if $(p \Box \rightarrow q)$, then $[(p \& r) \Box \rightarrow q]$; in other words, (T) pluses Lewis’ theory will be (N).

This problem can be seen from a different angle. Lewis wants to show that modal sentences can be analyzed extensionally, and thus he makes the biggest mistake in his theory. If the mistake about proper names is but a small error which can be neglected for convenient

purposes, then reifying intensional items can only prove the theory a dreadful one. Remember modal sentences are intensional, the intensional content create a sense that constitute the truth value of the sentence. When Lewis reify the modal notions into real world, he cuts of the sense which relates to the content, and is committed to the fallacy that has been pointed out by Ellis.

3. Problem with Possible World Realism

By far, we have seen how on logical and semantic ground Lewis' theory has failed. Now I wish to switch my attention to some ontological and epistemological concern. Lewis' possible world realism says possible worlds are as real as our world. I have said a few comments regarding this position in the last essay, where I said we should be skeptical about how real those possible worlds are. The realistic view about possible world has two main problems: 1) the epistemological obstacle and, 2) the circularity of a theory (Lycan, 1994, 16).

If, possible worlds are real, meaning they are just like our world and no less, they will require the same degree of evidence to justify any knowledge about their existence and properties. But sadly, we have none regarding the possible worlds. So, at least, the existence of the possible worlds, cannot be a solid metaphysical ground for a modal theory. A more serious question is: if these worlds exist, by any means, we should feel or notice their presence in some slight ways, and even perhaps, if the technology allows, we can even travel and visit these fascinating worlds, and I can have a lovely afternoon chat with my counterpart in a café. But sadly, in the mature Lewisian position, the counterfactuals for worlds are undefined, and as a result, the causal relation between worlds are also undefined. Without the causal relation, the other worlds appear to us as "the object behind the veil" and we can never have any contacts with the other worlds. Thus, it seems we should not make any assertive claim regarding their

existence. But their existence is possible, as some of you might immediately point out; and this comment will transit us to the next point.

If strong Lewisian theory is true, the claim above, “possibly, these worlds exist”, would be explained in the following fashion: there exist some world, where these worlds exist. If possible worlds are, possible, then it means there are some “bigger” worlds that contain the first set of worlds, and there presumably exist even “bigger” worlds that have the second sets as their properties, and so on. Circularity is not always a bad move, but this circularity is particularly vicious. If the only thing at the stake is possibly possible worlds exist, then how can they be a metaphysical background for a semantic theory. As I said, Lewis constructs his metaphysical view of possible worlds based on his semantic view, that modal sentences can and should be extensionally analyzed. But can I build a new metaphysical concept to justify what I said was right? A good semantic theory should rely on a healthy and justifiable metaphysical background; in other words, one should have a solid metaphysical position before constructing the semantic theory, not the other way around.

Part B: Ersatz Theory

The problems with Lewis do not go unnoticed, yet some philosophers still believe in the realism of modal notions. The main goal is to avoid Lewis’ realistic view of possible worlds, and consequently resolve the unwanted fallacies. Ersatz theories are a way to modify Lewisian theory. It contains most of Lewisian points, except that it denies the possible worlds are real. Possible worlds, in these theories are some intensional entities, or properties in general. There are three main streams of ersatz theories, 1) Combinatorial constructs, 2) Mental items theory, and 3) Ways things might have been (Lycan, 1994, 36).

1) Combinatorial construct theory, basically, is the idea that our world is made of infinite many small physical “atoms”. What an “atom” is can be anything, and it is trivial to be located specifically. What matters is that they can be rearranged into various ways, which make modal sentences meaningful. However, it provides no better reply to the objection against strong Lewisian view. We can construct a similar objection, that combinatorial construct theory lacks the epistemological justification of the basic metaphysical elements, namely, those “atoms”; and if we see their existence simply uncontroversial, it then will result the theory redundant. “It is possible that our world is constructed by some basic elements”, means that there are some elements, that construct these basic elements which construct our world. Simply put, the combinatorial theory is in fact an alternative version of strong Lewisian view, whose only difference from Lewis is that there is only one world which is constructed by some unknown actual metaphysical elements instead of many.

2) Mental items, such as linguistic entities, propositions, are another candidate for Ersatzter to replace the notion of possible world. For example, “It is possible that Leonardo da Vinci never painted Mona Lisa” means in a possible world, Leonardo da Vinci did not paint the famous painting; but in this scenario, the name Leonardo da Vinci is not a counterpart, but the same individual that the name stands for, and the possible world a mental or intensional item that is only going to describe how some of his properties might have changed. It, of course, is a solution to the absurdity of physical possible worlds, as possible worlds now are merely an intensional item. But there are two main problems for reifying intensional items.

Firstly, and most importantly, there are no intensional items. I shall not spend much time arguing why and how our world is made of matter, but among the commonly accepted ontology, the world is material, not dualistic or idealistic. I think a small argument will suffice for this

short essay. Most of the intensional sentences, where some people may think as an “aRb” form about an intensional items, are actually an “aΦp” form. For example, “I feel pain” does not imply there is an intensional item in my brain that is called “pain”, as an “aRb” form would suggest; but rather, it means that I act about a content, which is pain. Pain is not an item, but an intentional content that describes how I feel. Postulating intensional items, however, will deny the intentionality of mental states and other intensional sentences, as all intensional sentences are a statement about relationship between two objects, which is false.

Secondly, apart from postulating intensional items, what this theory does is mapping an intensional sentence onto other intensional sentence. But I do not think a proper theory of meaning should be heavily constructed with intensional sentences, largely because intensional sentences are referentially opaque. A theory must have the capacity of being substituted in other theories, without some drastic change of its truth value. Although it is not practical to delete any intensional aspect of a theory, such is how our language works, it, on the contrary, should do its best to avoid the ambiguity and opacity of intensional sentences. However, mapping modal sentences onto intensional sentences does not suffice. Intensional items, if there were any, are far from an objective criterion for a theory.

3) The last candidate is that “possible worlds” are merely ways things could have been. I think this is a more sophisticated way of saying intensional items, but people can argue that it is an ontological aspect in its own right. What it suggests is we need no further evaluation or explanation of modal sentences, apart from “it is uncontroversial that things could have been in other ways”. This is by far, the most successful alternative. However, there are certain preparations needed before we head to the conclusion that we only need to understand modal sentences as a linguistic feature without further postulating modal logic or unworthy ontology.

First, we want to ask how this method is doable; that is, how we can analyze a sentence without help from logical system and metaphysics. Second, if there are no other criteria, how can we successfully understand modal sentences, explaining modal sentences as themselves sounds as mystical as explaining nothing at all. And third, we must decide if an extensional constructed theory for semantic is necessary; understanding modal sentences as “ways things could have been” involves many intensional notions. Philosophers such as Quine and Churchland would strongly reject such move. I partially want to side with this position, however, these three questions must be answered properly. For now, let us keep them in our mind a bit longer, because until we finish Quine’s position, the answers cannot be given easily.

Part C: A Conclusion Regarding Lewisian Tradition

Strong Lewisian, and his Ersatz fellows, are called modal realism; as the name suggest, they think modal idioms such as possibility, necessity, contingency etc., are, or can manifested by something real. It problems have been shown, that these theories commonly result epistemological uncertainty, or theoretical redundancy. I am, of course, not blind on the merit these theories have. As an opposite position to Quine, they provide us a somewhat solid account for modality. However, modal semantic needs to answer what modal sentences mean; and what a sentence mean is consisted with its relationship to the world. a) “The grass is green” means the grass is green, is different from b) “possibly, Bella is smaller than Alex” means there is a world where B is smaller than A; because a) is an objective statement but b) is not. Language reflect our relationship to the world, but Lewisian theory do not imply such relationship. Indeed, under this tradition, modal sentences refer to something out there which supposedly can be analyzed. However, postulating intensional entities is not a proper way to construct the relationship,

because a relationship is understood in both direction; what things are, and how they are perceived and understood by people are related but different. I have said that postulating intensional entities will hide the intentional nature of mental contents, and I want to say a bit further regarding how the meaning of a sentence is underdetermined by the extension. In *Meaning and Reference*, Putnam provides us a lucid example where the extension of an expression fails to determine the meaning (Putnam, 1973, 704). What a sentence mean is highly related to the intentionality of our mental states, such as belief, desire, knowledge; if we do not include this element when we analyze sentences, intensional or not, we will always leave a blind spot which the extension of a sentence cannot cover on its own. Lewisian tradition surely understands the importance of extensionality and how inconvenient to analyze an intensional sentence; yet I must repeat that it is not necessary for a meaningful sentence to refer to any concrete extension. Just as expressions about the present King of France and Harry Potter do not refer to anything, we do not have to reify modal notions to understand what modal sentences mean. Thus, Lewisian tradition from the beginning has been committed to a false semantic assumption, and consequently the result is fallacious.

Part D: Mathematical Approach to Modality and Essentialism

1. Mathematical approach

John T. Kearns has a very interesting approach to modal semantics. In general, it introduces a new modal system that involves “necessary truth value” (T, F) and “contingent truth value” (t, f)

The simple matric is: (Kearns, 1981, 80)

A	$\Box A$	A	$\Diamond A$
T	T, t	T	T, T
t	f, F	t	T, t
f	f, F	f	T, t

F f, F F f, F

For the quantification, it follows the given axiom:

(i) A pseudo-sentence $(\forall a)A$ has value T if $A[a; p]$ has value T for every individual p in the domain.

(ii) A pseudo-sentence $(\forall a)A$ has value t iff $A[a; p]$ has value t for every individual p in the domain. (Remember, if an open formula has value T for one individual, it has value T for every individual.)

(iii) If pseudo-sentence $(\forall a)A$ has value f, then $A[a; p]$ has value f for some individual p in the domain, but $A[a; p]$ does not have value F for any individual p in the domain.

(iv) A pseudo-sentence $(\forall a)A$ has value F if $A[a; p]$ has value F for some individual p in the domain

And from here, Kearns believes that we can construct a modal system with tree proof deduction that does not require possible worlds. But besides its advanced mathematical, and logical methodology, it benefits little a semantic theory. First, the whole system is completely formal, which leads to Quine's old question—how we are supposed to avoid the confusion between “use” and “mention” and how we should quantify modal sentences; also, it is not convincing that traditional truth value table can be extended to contingent truth and necessary truth. To make his theory worthy, he must first prove that introducing the new truth table, necessity and possibility as sentential operators can bind the intensional content successfully; and second, he must reconcile the modal distinction with his new matrix. I think the first obstacle needs little explanation now, since we have repeated the issue many time already; in short, modal sentences are intensional, which means they are referentially opaque. The substitution of co-referential terms may change the truth value of the whole sentence, simply analyzing the truth

value of each component of a sentence is not enough to analyze the sentence as a whole. The second, however needs some extensions. For instance, “Necessarily, 8 is bigger than 4” is true, and under Kearns’ new matrix, it would become necessarily true, but how it is different from “true”? It seems as now modal distinction are quite redundant because every truth now becomes necessary truth. And how contingent truth different from necessary truth? I suppose to answer that there must be some definitions based on analyticity and contradiction, but as Quine in *Two Dogma of Empiricism* has said, such definition is a vicious circle (Quine, 1951, 23). It should be noticed that contingent truth and necessary truth requires the notion of modality, which makes the system beg the question.

Lastly, formal system is not enough for a semantic theory. I want to clarify that this project is not to do with modal logic, but semantics. Of course, modal logic is a solid option when it comes to understanding modal sentences; however formal logic itself is a project that raises questions as it is developing. Our semantic understanding cannot be fully captured by a formal logical system in many cases, and we should not believe that a strong and careful logic system can solve any problem in language. Even if the theory is promising enough, a language is not only captured by its syntax; people’s intention, desire, and belief etc. all constitute the meaning of sentences, and these elements, at least, cannot be realized in Kearns’ theory.

2. Essentialism

Another failed alternative is Essentialism; however, the reason for its failure is not that the theory is ill-constructed or anything (Vetter, 2011, 744). Essentialism says that each individual has its essence or nature. An essentialist theory of modality says that p is necessary if and only there is something in the nature of the thing that ensure p; p is possible if and only if

there is nothing in the nature of the thing that rules out that p. The theory itself is quite simple, although it has many modified version, which I am not going to explicate right now. I brought this theory up, because Quine thinks it is required to answer some difficult question about modality (Quine, 1960b, 200). However, it cannot answer the questions in this project. Our focus is on logical, or semantic modality, which is different from physical, or causal modality. “I can fly on a broom” is logically possible (allow me to set the discussion about modal semantic aside, and simply talk about this sentence on its face value for this short paragraph), but not physically. What essentialism provides, is a handy way to analyze physical modality, and for the sentence above, it is physically impossible because my essence and the essence of broom would not allow such things to happen, until further physical discovery is shown. If this example does not clarify the confusion, let us consider, “it is necessary that any matter with mass cannot go beyond the speed of light”. It is physically impossible because the essence of our physical rule ensures such event would not happen; but semantically, it is possible, or at least uncontroversial to say so. Essentialist positions are quite popular in contemporary debates about modality, however, since the focus of my project is strictly on semantic modality, I suggest that we do not spend too much time on this theory, although it would be quite interesting for someone who focuses on causality and physical modality.

3. Comments

Now we have seen how Lewisian tradition fails and entertained with some unsuccessful alternatives; since a semantic theory that requires queer metaphysical commitment, or a semantic that is entirely formally constructed does not solve the dichotomy, we might want to put our attention to the plainest, yet deepest one: understanding modal sentences as ways things could

have been. It is a fact that we use and understand modal sentences every day, why not construct a theory based on our everyday understanding? Of course, we are not to postulate the “ways things could have been” as intensional entities, as a linguistic feature there are no superficial fallacies. To put it more clearly, the solution should be understanding modal sentences through what modal notions mean. However, as I said there are questions to answer, and these answers cannot be given easily before we have seen why understanding modal sentences semantically is not tasteful to many people. Those philosophers like Quine would argue that we should give up modal semantic. So, before we show understanding modal sentences through the meaning of modal notions is a fruitful alternative to the dichotomy, we must understand why Quine and Eliminativists dislike the idea of semantic meaning and modal sentences in general.

Essay Three: Problem with Quine

Introduction:

Eliminativism as the opposite side of semantic modality dichotomy, says that modal sentences are essentially all false. The main reason is that modal sentences are intensional. Because of the intensionality of modal sentences, Eliminativists say that we cannot construct any worthy theories on modal logic, and even as semantic, they are nonsensical. The leading figure for Eliminativism, as I said, is Quine. And in this Chapter, we are going to analyze and eventually reject Quine's position. My argument will only reject his Eliminativist view of modal language, although Quine has many interesting points about modal logic, because my project does not focus on the logic but semantic. To reject Eliminativism, I will provide a defense for intensional language, and a diagnosis of the fallacies that Eliminativism is committed to. In this chapter, I will try my best to argue that intensional language is meaningful, and important in our life; the elimination of intensional language can only cause harm to our linguistic system. And I shall argue that Eliminativism is based on a mistake about ontology and semantic. Eventually, I will argue that both modal realism and Eliminativism are wrong, and the dichotomy is false.

1. Quine's rejection on modal logic

Quine's position of modal semantic is quite simple, that all modal sentences should be deleted. Apart from this, Quine has two crucial points that show why modal logic is doomed to failure. The reason why Quine reject modal logic comes from two parts: Eliminativism and use-mention distinction; although in his argument, these two parts are intertwined, they are nonetheless different propositions. Combined with these two, Quine says 1) modal logic results from and is perpetuated by a conflation of use and mention; 2) unrestricted quantification in modal logic is

nonsensical; 3) restricted quantification in modal logic results collapse in modal distinction; 4) Intelligibly quantifying modal logic requires an untenable metaphysical doctrine of essentialism (Gibson, 1986, 152).

Necessarily $8 > 4$, is explained as: “ $8 > 4$ ” is analytic, or, “ $8 > 4$ ” is logically true. “Analytic” in a formal modal logic, is explained as “strictly imply”. Quine says, that the role of “necessity” either as sentence forming operator, such as “strictly implies, or a general term joining singular term is unclear. For example, in Whitehead and Russell’s project, “p implies q” is equivalent to “if p then q”, which is identical to “not (p or not q)”. However, we should not write “p implies q” but “‘p’ implies ‘q’”, because the sentence is explained as what p means implies what q means. Therefore, the joining term “implies” should not be equivalent to “if ... then ...”, otherwise it leads to the conflation of use and mention. Likewise, “Necessarily p” should not be explained as “‘p’ is analytic”. But as Quine observes, such conflation of use and mention turns to be in favor of modal logic. When we explain “analytic” as “strictly imply”, it would go back to the same conflation as Whitehead and Russell have made (Quine, 1961b, 115)

Why the conflation of use and mention is a problem that we cannot neglect?

Ontologically, cat and “cat” stand for different things. The cat is a family of animals, whereas the “cat” is the word which refers to a cat. Let us consider the following example: “if X is a square, then it is a quadrilateral”, and “X being a square implies X being a quadrilateral”. The former is true when X is a quadrilateral or X is not a quadrilateral or a square; however, in the latter, the sentence’s truth value cannot be explained in the same way. Being a square itself does not imply being a quadrilateral, but the meaning of “being a square” implies the meaning of “being a quadrilateral”. Conflating the use and mention results a fallacy in ontology, thus we should write

“‘p’ implies ‘q’”, not “p implies q”. Translate “implies” as “if...then...”, therefore, is problematic; and the same goes for translating “analytic” to “strictly if...then...”.

Quine thinks such conflation is perpetuated in modal logic, because he does not think modal logic should be explicated in non-extensional ways. It is, however, possible that we do not explain “analytic” as “strictly not (p and not q)”. We can explain analytic in terms of what the proposition means. However, this is not acceptable by Quine, due to his Eliminativist position. Since “meaning” is a non-extensional notion, Quine thinks it should not be included in a scientific theory and logic system. We shall discuss this issue more in the later part of this essay. For the present purposes, I will explain more why Quine thinks that neither restricted quantification or non-restricted quantification of modal sentences can fit into the formal logic system. Assume Quine believes that formal logic can capture our language in an extensional fashion, at least in some degree, then he thinks there is no way to quantify modal sentences successfully.

If we quantify modal sentences non-restrictedly, Quine states, the quantification will be unintelligible because modal sentences are referentially opaque. “Necessarily $8 > 4$ ” is true, but “Necessarily the number of planets in solar system > 4 ” is false. When we quantify the sentence as “(x) Necessarily (x > 4)” it would lead to fallacy or absurdity like the example above. The content of the sentence is referentially opaque, thus the quantification outside the clause cannot successfully bind the content inside; although “8” is co-referential with “the number of the planets in solar system”, the substitution, however, will result the change of the truth value of the sentence (Quine, 1961b, 113).

We cannot quantify restrictedly either, as Quine observes. When doing so, the modal distinction would collapse. If we restrictedly quantify modal variables, we are to postulate whenever each of the two open sentences uniquely determines one and the same object, the sentences are equivalent by necessity. This postulate Quine says, will have two results: 1) every identity is necessary identity; 2) every true sentence is necessarily true. We can summarize the consequence as, if we restrictedly quantify modal variables, it implies that a sentence is true if and only if it is necessarily true, which will make the modal distinction collapse (Gibson, 1986, 153).

Therefore, modal logic is doomed according to Quine, because a) we should not apply the notion of “meaning” in our investigation of modality, b) formal logic system does not allow the intensional nature of modal sentences.

2. Defend Intensional language

In a formal logic system, it would be difficult, if not impossible, to quantify intensional content. Either the problem quantification or the conflation of use and mention, comes from Quine’s rejection of intensional notions, such as “meaning” and “senses”. However, formal logic is a project itself, which means it is not a definitive theory that is required for any investigation of language. I believe Quine would agree that we do not understand language based on formal logic, and his objection against modal logic has perfectly illustrated why we don’t want to use modal logic to understand modal sentences. Even set Eliminativist position aside, the intensionality of modal sentences is quite troublesome to the truth conditions and quantification which formal logic relies on. However, if we abandon modal logic as a valid approach to understand modal sentences, and purely understand modal sentences semantically, it is not

acceptable to Quine either. The reason for Quine is simple, that is his Eliminativist position. Quine thinks, for a theory to be scientific, it must follow the thesis of extensionality (Quine, 1960a, 264). A scientific theory of one area should be interchangeable with theories of other areas; for instance, a theory in physics should, in some application, allow for the uses by chemistry or biology. However, since only extensional sentences will preserve its truth value however the co-referential terms are substituted, the interchanging of theory cannot be possible if we allow the use of intensional languages. Since different scientific disciplines use their different terms and categories, should a theory be intensional, the substitution of co-referential terms will undesirably vary the sentence's truth value. Therefore, they (i.e. the intensional sentences) should be eliminated, at least in areas where careful and systematic inquiries are required.

However, the Eliminativist position is not true. First, intensional sentences are meaningful and they are used everywhere, from literature and poetics to many scientific areas such as psychology. Despite the crudeness and silliness of this objection, it entails the inseparable role of intensional language in our life. I presume a good example to show how disastrous the consequence of eliminating intensional sentences would be, is ethical theory. Morality and many ethical terms are intensional, they are related to one's belief, desire, etc. Should we delete them, and claim that all sentences about these terms are false, we are then ready to say ethics and morality are but nonsense. And I believe most people would not welcome this consequence. And even for an Eliminativist, an article done solely by extensional language is entirely impossible. But this objection is, as many can say, sentimental. Many Eliminativists such as Quine and Churchland have suggested us legitimate intensional languages into a more scientific and systematic extensional structure; while they will have to acknowledge the uses of intensional sentences, they say that intensional language work only for convenience of

communication. They would say, intensional language has its way in our life, but for a scientific theory, they must be legitimated into a well-crafted extensional system. To answer this postulate, our second objection is that Eliminativism is based on an ill constructed view of ontology and semantic.

Eliminativism states that only extensional sentences can tell the truth, which requires our attention. The notion of “being true” is both extensional and intensional. “Truth” is objective, which means it can be verified; but it relates to “belief”, “knowledge” etc. and given its partially intensional nature, we should realize that what counts as truth might change from time to time. Of course, for the present purposes, we should not extend our concerns to epistemology too much; we should notice, however, to be objective is not to be absolute. Nevertheless, if Eliminativism is true, it must cut off the intensional part of “truth”; in other words, truth would be absolute.

It requires another project to discuss and investigate whether the truth should be absolute thoroughly; for the current purposes, I will only provide a small section of arguments for why the truth is not absolute. First, Kant says that the world is structured in the way how our perception is structured (Kant, 1787, 346). But let us not hasten to make such a claim that Kant thinks we cannot acquire knowledge objectively; although for Kant, the truth is not absolute so that it is constant and unchanging; but it is objective, that we can be certain if we are right or wrong. Assume that we all agree that we experience the world, then there should be, as Kant addresses, some necessary conditions of experiences. Kant observes that, we think of the experiences as one’s own; in other words, one’s experiences belong to the single consciousness. Kant calls this as the Transcendental Unity of Apperception. The Transcendental Unity of Apperception is not an awareness of a mental self, but instead, it is the formal condition of experience that one

should be able to think one's experiences as one's own (Thomson, 2012, 312). To do so requires one to make judgements, which have various logical forms, that later become the Categories.

There are two points to be noticed in the confusing words of Kant. First, the categories are not Platonic Forms; the categories are necessary for experiences and perceptions, but they are not to be achieved or realized by pure reasoning. Many people in the past have read Kant as an advocator for Idealism, but Kant in fact is an empirical Realist. No matter how the categories enable us to think the experience as one's own, the categories are realized only when they are related to the world one perceives. The world for Kant, first and foremost, is to be experienced; those who think there must be knowledge beyond one's perceptions as absolute "things", or the truth as an absolute entity are fanatics. Let us consider a simple example, the Quality is a category, and we describe the qualities of objects here and there. However, as simply as the fact the same object might be green in one condition and red in another (e.g. a white plate under green light and red light), the notion of "Quality" is empty without a given situation. Second, our experiences are objective. Kant's argument is that to realize one is having an experience, there must be some concepts that allow us to distinguish experience from reality. Although I might see the same plate in a different colour if I put it under a different situation, I can still be sure that I am seeing, let us say, a green plate is true under certain condition.

The insights Kant gives us is being objective does not equal to being absolute. I think, the fallacy of the ontological mistake that Eliminativists are committed to, is that scientific inquiries, which would ultimately grant us the true knowledge about the world, should go beyond any specific situations. As I have argued, what is true is largely influenced by how we perceive the world; in each specific area, we perceive things differently. For instance, in Geology, scientists

do not observe the phenomena in a molecular level to explain how the crust has been shaped, whereas physicists may be interested in how the molecular reaction in the core produce the energy that changes the crust. When we perceive things in different scale, what is true is likely to differ. Eliminativism thinks that intensional language is dispensable for sciences and logical thinking, but even inside physics, intensional language plays a key role in normativity and categorization. Between red and yellow, there are infinitely many colours; and we can say that the difference between red and yellow is not one of kind, but of degree. But we categorize some colours as more “red” and some as more “yellow”; we can say such categorization is arbitrary, yet it serves a purpose. And what are the differences between a table and a chair? Of course, my point is not to claim that categorizations are senseless, I want to say they are purposeful. It is expected that we sit on chairs and put things on tables; but in reality, there is nothing preventing us from the reversed way. The differences between chairs and tables are drawn by human expectations for different purposes, not by an absolute form of chairs or tables. And the same point is equally applied to science. There are many names in physics, such as we are expected to distinguish gravitational force and normal force; but in the end, how much are they differ from each other? If the differences between two concepts are related to our expectations, then they cannot be explained with purely extensional terms.

A very similar point can be seen in *Philosophical Investigation* by Ludwig Wittgenstein, where he argues that there is no definitive definition of a word, but only a family resemblance (Wittgenstein, 1958, 19). I do not think that Wittgenstein wants to say the definition of a word is totally subjective, but we should not think the definition as an absolute concept that is equally applied in every situation. As we have seen, categorizations and concepts are based on specific situation and expectation, i.e. how humans perceive the world. Thus, the definitions of words

evolve throughout social development, because as the society develops, so does how we see the world. The word “man” only referred to white men before 18th century; women, black people, Asians were excluded by this concept. However, following many political and social movements, now when we use the word, it can refer to a person in either gender and in any race. The concept of “man” is renewed, and it might yet keep evolving; the process however, cannot be explained purely in extensional languages. Therefore, when we name something, we do not name them as so and so, purely by the extension, and likewise, we do not understand words purely by the extension either. In *Meaning and Reference*, the Putnam has provided us with a lucid thought experiment. In the article, Putnam argues that the meaning of a word is not purely determined by its extension; “Water” on the earth and “Water” on the twin earth have the same extension for the speakers, but the intentionality when people from different planets use “Water” is different, thus they mean differently (Putnam, 1973, 699-711). To conclude, how we use and understand language cannot be solely explained by extensionality; if we exclude the intentionality from our semantic understanding, not only can we no longer enjoy the lucidity in literature and poetry, but we shall destroy our linguistic system.

3. Conclusion:

Lewis and Quine represent two extreme in this dichotomy; one wants to reify modal notions into real being, the other wants to delete modal notions all together. As I said before, although they are different in modal theory, one thing they share in common, that they both believe that modal sentences must have extension to be meaningful. Quine thinks, because there is none of these entities called modal notions, modal sentences must be false; Lewis thinks modal sentences are meaningful, so there must be something called possible worlds that represent modal notions. I

fear both forget the simplest thing, that modal notions do not have to refer to real things.

Sometimes the only thing we need is what modal notion means, and this method actually had been said long before the dichotomy occurred by Carnap (Carnap, 1952). Carnap was trying to construct a modal theory that is based on the meaning of modal notions; I would not say that Carnap's method is the third position we require, because his methodology in his theory construct is messy and the theory itself is ambiguous. But it is quite possible that the meaning of modal notions is sufficient for us to understand modal language. Of course, there are difficulties we will have to face and solve; some people will argue that the meaning of modal notions cannot give a sufficient account; and some people would say this approach is not a semantic theory at all. I would like to answer each problems and objections that I can think of in detail in the next chapter.

Essay 4: Meaning Postulate

Introduction:

In the previous essays, we have seen why the dichotomy is false. Both Quine's tradition or Lewisian tradition fall short in explaining modal sentences. The purpose of this essay, however, is not to construct a specific theory of meaning that gives an account for modal sentences; rather, the purpose is to solve the dichotomy by illustrating the possibility of explaining modal sentences in terms of meaning. I shall do so by replying objections and answering problems.

1. Problem with Intensionality and Theories

One can argue that a semantic theory cannot include intensional elements, therefore, we should not construct a theory of meaning for modal sentences, since they are intensional. This proposition is quite similar to what Eliminativism has to say. As we have seen, intensional sentences are meaningful, and can be understood properly; it is evident enough that in our daily uses of language, modal sentences are quite meaningful. The superficial reading of this objection, which says that intensional languages are false, has been replied in the third essay where I rejected Eliminativism. Another reading is that a theory should avoid intensional elements, even though intensional sentences are meaningful; their referential opaqueness may result in some inconveniences for the theory. I shall argue that, first, despite the intensionality of modal language, the semantic theory which explains it does not have to include intensional elements. Similar projects have been done by philosophers, such as Davidson; his semantic theory is extensionally constructed, yet still captures intensional aspects of languages. In short, his theory, which is called the T-theory of a specific language, generates a set of T-sentences, that is constructed as "S is T-in-L if and only if p" for extensional sentences and "A Φ that p" is

T-in-I if and only if p” for intensional sentences, can potentially explain the meaning of any given sentence for a specific language (Davidson, 1984). Notice that I do not say that the Davidsonian theory must be a successful candidate for modal sentences, nevertheless, the success that his theory has achieved shows the possibility of such semantic theories. Moreover, a semantic theory can include intensional elements. For instance, truth semantic usually explain the meaning of a given sentence as “S is true if and only p”; notice that “is true” is different from “is T-in-I”, because theoretically “T-in-I” is purely extensional, which is constructed and understood by propositional logic, but “is true” has intensional aspect. Davidson avoided using “is true” in his theory, because he wanted to construct a purely extensional semantic theory, but his project does not imply that intensional element should be totally excluded from a semantic theory. Also, some pragmatic theories meaning, such as Grice’s theory of implicature, include intensional elements, especially for parts where the theory analyzes speakers’ intentions. Therefore, 1) a theory of meaning does not have to avoid intensional elements; 2) an extensionally constructed theory of meaning can explain intensional sentences such as modal sentences.

2. Problems with Circularity

Another objection might say, that explaining modal sentences in terms of meaning will become circular. To explain “necessity” requires “analytic”, but explain “analytic” also require notions like “necessity”; as a result, the objection says, the theory cannot avoid circularity. I shall argue that there are several ways to solve this dilemma. First, we can have a theory of knowledge such that it gives us a basis for terms like “analytic” or “necessity”; for example, in the Kantian theory, modality is a category, which is a structure that is inherent when we perceive the world;

the Categories are a priori, and do not require any further explanation. But I think the best reply is to argue that as long as the circularity is not vicious, it is acceptable. A circularity becomes vicious when it fails to satisfy the question in need. For instance, Quine argues that analytic and synthetic distinction is fallacious, because the notion of analytic is circular, and it prevents us from further analysis of the distinction between analytic and synthetic; therefore, the circularity is vicious. What Quine wants to argue here is that the meaning “analytic” requires “necessity” which is also the question in need. I suspect that Quine is suspicious about the meaning of these words because of his Eliminativist position. However, I shall argue that it is not a vicious circularity of understanding modal notions in terms of meaning, because 1) the meaning of “necessity” and “possibility” are not the questions on the table, 2) even though there are ambiguities about what they mean, the circularity is acceptable because an in-depth explanation of the meaning of these terms are not require for a semantic theory of modal sentences.

1) We indeed understand what “necessity” and “possibility” means. Here I do not say a Kantian theory is require; it is uncontroversial to say, “It is possible that I could have not majored in philosophy”, and I believe people can understand what I said clearly. However, some might say that he does not understand what the sentence means, because there is not a concrete object for “possibility” to refer to. This position, as I suspect we have been familiar to, is Eliminativist; it presupposes that meaning must require extensional objects. For example, “x” must refer to some real object x, if “x” is to be meaningful. However, this position is not entirely true, because, as I have argued, many meaningful terms do not meet this criterion, such as “ethics”, “morality”, “wisdom”, etc. Of course, it is correct to assume that there is no non-existent object; for example, we should not assume Sherlock Homes existed in the Victorian Britain. However, a word without reference can be understood through a set of descriptions,

which is a project done by Russell through existential quantification. And as I have said in the third essay, Putnam has argued that what a word means is not purely determined by its extension. Also, we must acknowledge that the Frege's argument for sense and reference distinction (Frege, 1948, 209-230). Sherlock Homes does not refer to a real man, but it has a sense which constitutes the meaning of the name. I think this argument can be extended to modal words, i.e. "necessity" and "possibility" etc. even though there is no reference for these words, nonetheless, their sense constitutes their meaning. Of course, Eliminativists will be happy reject the notion of sense, as I have argued, Eliminativism is ill-grounded, so that their entire system is based on a false presupposition. Their argument looks valid in their own system, but as we have seen the fallacy of their premises involved, their objection against meaning or sense does not pose a threat to our statement.

2) Circularities happen everywhere, if any of them is a problem, then we might delete the definition and concept of every word. For instance, "chemistry" is defined as "the study of matter, its properties, how and why substances combine or separate to form other substances, and how substances interact with energy", now if you want to press on what the horribly long sentence means, I can find no better answer than "chemistry"; the concept of "chemistry" appears to be circular, but we are not bothered by it since it does not hinder us from understanding what "chemistry" is. We should not expect there must be an ultimate entity, such as Platonic form, that a word must refer to. Wittgenstein argues that there is no clear definition for a word, only the family-resemblance. I think his position is too radical however, since the definitions of some words are much clearer than others; yet his idea is inspirational. We do not need a clear criterion in understanding language; some circularities occur when we try to define something which does not have a clear and clean definition. The problem for those who believe

the circularity in a theory, to be more specific, the circularity in defining a word poses a threat to a theory, is that they think a very clean and systematic concept is required to allow us to comprehend what the word means. But this position is false; not only because it is impossible to give clear definition to every word, but also because our understanding goes beyond what the definitions of words have told. Our language is developmental. The historical and cultural influences are important to how our languages have changed, so are our innovations of how we use the languages. How English has developed since 15th century is a strong evidence for the fact that we do not play by the rule. Thus, we should not assume that to use a language “properly”, we must have a clear definition.

3. Compositionality of Language

What does it mean to explain what modal sentences mean in terms of meaning? This is a horrifying question, not only because it is long, but also because it is quite ambiguous. The question can be understood as: whether a semantic theory should rely on the meaning of the sentences. Of course, we do not want to have theory that looks like: “necessary ‘p’” means what the sentence means; but we can rely on the meaning of each part of a sentence. Meaning of parts can be allowed in a semantic theory, because a sentence can be understood through understanding the components. What I am suggesting, is that we should construct a theory of modal sentences, based on what “necessity” and “possibility” mean, not on what the modal sentences mean. By understanding the meaning of “necessity” and “possibility”, we therefore can understand the sentences.

I admit that some people might disagree on the idea that a sentence can be understood by the meaning of its components. For instance, a pragmatic theory of meaning could suggest that

what a sentence means is highly connected to the speaker's intention, and therefore, cannot be fully realized by its components. I agree that speaker's intentions are a very influential element for semantic understanding; however, this pragmatic position focuses more on the application of a semantic theory, more than the construction at the first place. For example, the Davidsonian theory does not determine its empirical application. In the empirical application of a theory, there are many pragmatic uses, where the speaker's intention differs much from what the sentence express literally. The most typical instance, I think, is metaphor. "The handsome gentleman is the summer wind" does not mean what the sentence looks like literally; if we analyze the sentence solely based on the Davidsonian theory, we would meet some obstacles because a gentleman cannot be the summer wind. But nevertheless, from our education of literature, we can understand the sentence by inferring the speaker's intention. I suspect it is quite the same for many modal sentences, where speaker's intention is more influential than the literal meaning of each component on what the sentence means. "I could have been a math major", might not actually mean in such and such situation, it is uncontroversial to say I became a math major; rather, it might be an assertion of my dislike on my current major. However, the importance of speaker's intention does not wear out the compositional nature of language. A language is syntactical. No matter how much the rules underdetermine the applications, they still exist and play a huge role in semantics.

I shall give a brief argument regarding the reason for a language being syntactical and compositional. Our perception of the world is structural; Our language expresses our perception of the world; therefore, the language that expresses the structural perception must also be structural. The structure of our language is called the syntax. Although it is apparent that different languages have different syntax, which seems to be contradictory to that human

perceive the world in almost the same way. I presume that historical and cultural background have a huge impact on the development of the syntax of specific language; however, I assume it is safe to claim that all the languages follow a very similar structure, where a sentence is unfolded through a chronological linearity, and is highly focused on action and state. The chronological elements of a language are always past, present, and future; and always describe different states the subject is in, or the different action it undergoes.

Thus, different components are laid down in the way which expresses how we perceive the world. Assuming we do not have trouble understanding how we perceive such and such fascinating phenomena in our life, we can understand a sentence through understanding each component. “Grass is green” can be easily understood by the meaning of each word. A very empirical objection may come, saying that, usually, a foreign language learner may not have trouble understanding the meaning of words, but still fail to understand what the sentences mean, especially long ones. As I have said, the syntaxes of different languages are very different, because the syntax is also influenced by historical and cultural development of a language. Language is developmental, how we speak English is quite alien to how people in 15th century used to do. A language learner, although share the same perceptual structure with the native, still need to comprehend the cultural aspects of the syntax of a given language. For instance, we are not allowed to say “although...but...” in English, but such structure is commonly seen in Chinese. The foreign speaker, in spite of understanding each word, may not understand the details in the syntax, which has been developed through its long history, therefore, fail to properly understand the sentence as a whole.

If what I assume is correct, then modality, as a structure in every language, must embody some perceptual structures. When we explain modality in terms of meaning, we do not assign some entities to which modality refer; rather, we say we understand what modality means because it is a way we perceive the world. Then what explaining modal sentences in terms of meaning, means how modal sentences, at least partially, express the way in which we perceive the world. At the current stage, I think an explicit theory of perception is not required. Nonetheless, there are many candidates, so long as they allow for intensionality of sentences. What is important for our current discussion is that modal sentences can be explained through the meaning of modal words, and this process does not map modal words onto non-existent entities such as possible worlds.

But suppose we all understand well enough what the modal notions mean, how would the theory look like? I have stated before that this essay will not construct any specific theory, yet a blueprint or a general guideline is needed for some people to believe such a theory is doable. I think there are roughly two versions for modal semantic in terms of the meaning of modal notions. Both however, are not theories for the meaning of specific modal notions, but theories for modal sentences. First, we can construct a truth-semantic theory. For example, “necessarily A” means “‘necessarily A’ is true if and only if A is necessary”. But some may question whether we can tell the truth value of necessity. In my first essay, I addressed that Aristotle used to question about modal sentences, saying that we cannot tell the truth value of them. “Possibly, it is going to rain tomorrow” for Aristotle does not have a truth value, because we do not know currently. But at the begging of the whole project, I made it clear enough that there are two types of modality: one is logical or semantic modality, and the other is physical or causal, and my primary concern is the former. The example I used, is a physical modal sentence, whose truth

value can be determined by a theory of evidence and chance. For instance, should I gathered enough evidence to justify the possibility greater than zero, I am sure allowed to claim that “possibly, it is going to rain tomorrow”. But let us not be indulged in this matter too long.

4. A Philosophical Movement

It would hardly escape from people’s eyes that we set our journey from the inquiries of how we understand what modal sentences mean. Now we end our investigation on the meaning of modal notions. It seems as if we were running in circle, chasing our tail. But this is not correct. Indeed, we eventually go back to the most mundane and ordinary position; and I admit, compared with possible world theory and Eliminativism, it does not seem like a theory at all. But there is a philosophical movement underlying our process. I started this project by question what modal sentences mean, apart from our ordinary understanding. But having investigated Lewis and Quine, I came to realize that meaning of modal notions is almost everything I need. Or, we can say, modal sentences mean “ways things could have been”. It appears to be circle, because in the end I arrive at the same spot where I started, but this circle isn’t “vicious”; unlike the begging, we now know why we should not understand modal sentences with neither Lewisian tradition or Eliminativism, and we should understand them based on modal notion’s meaning. A philosophical movement is not always linear; from one stage to another stage, the route is like climbing a tower; even for horizontal position, from time to time we find ourselves come to the same spot, but every time we meet the same horizontal spot, we arrive at a different height. This analogy is how I think of my project. Limited by my insufficient talent and knowledge, I couldn’t craft a brand-new theory that leads our understanding of modal language to a new era; however, my little investigation of the problem with Quine and Lewis still contribute a little for

the evolution in this school in philosophy of language. If we look back at the history of philosophy, from one period to another, philosophers usually are “stuck” at one or two popular theories, dichotomy, debates for quite long until a genius lead them to a new stage. The modern period is a good example, where we see a clear dichotomy between Empiricism and Rationalism, until Kant came out and his Transcendental Idealism became the third position and solve the dichotomy. I am not nearly a good philosophy student who can be compared with Kant, yet I only hope my little project would be a solid starting point for my future study in this area, or, hopefully, be of a little help for others who share my queer interests in modal language.

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