

Tense and Modality in Conditionals

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条件文における時制とモダリティ

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本論文では、条件文における時制の解釈と法助動詞との関わりを考察する。英語や現代ギリシア語 (Iatridou 2000) と同様、日本語の場合も主節の過去形を現す形態素 (「-た」形) が反事実性の意味を生み出すことに貢献していると考えられる (Ogihara 2014)。Dancygier (1998), Arita (2009) に従って、日本語の「-なら」条件文と「-たら」条件文を、予測条件文、認識条件文、反事実条件文の 3 種に分類し、前件と後件の時間解釈について考察する。本論文では、次の 3 点を主張する。1) 過去形をとりうる法助動詞は、反事実性を意味することができる。2) 自身は過去形にはならないが、過去形の命題 (文) に接続しうる法助動詞は、条件文において反事実性の意味を表すことができる。3) 同時性を表す「-なら」条件文において、一致現象に似た時制の表し方がみられる。

第 1 節で条件文を 3 つに分類し、主節の法助動詞と時制について考察する。1.1. 節で法助動詞に関する形態的制限を述べ、1.2. 節で反事実性を表しうる主節の法助動詞と「-た」形の関係性を考察する。第 2 節では、三原 (1992) や町田 (1989) を基礎に、前件と後件の時間関係を考察する。2.1. 節では予測条件文、2.2. 節では認識条件文、2.3. 節では反事実条件文の時間関係を分析する。第 3 節で、結論を述べる。

キーワード：条件文、認識条件文、反事実性

0. Introduction

It has been argued that the Japanese language does not have an overt marker of counterfactuality in the antecedent clause (Arita 2006, 2009). On the other hand, it is proposed that some languages such as English and Modern Greek convey counterfactuality by past tense morphology in the consequent clause (Iatridou 2000).

In this paper, I will adopt as a working hypothesis that in Japanese, the past tense morpheme in the consequent clause is also playing a role to signal counterfactuality (Ogihara 2014)¹. Through investigating the tense interpretations between the subordinate clauses (i.e. the antecedents) and the main clauses (i.e. the consequents) of the conditional sentences, I will propose that Japanese conditionals are

Key Words: conditionals, epistemic conditionals, counterfactuality

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ambiguous between epistemic conditionals and counterfactual conditionals of the type discussed in Dancygier (1998) and Arita (2006). They can be disambiguated by the past tense *-ta* form, i.e. either by putting *-ta* on the modals themselves or putting *-ta* on the propositions that the modals select in the consequents as shown in 1.2. They can also be disambiguated by *nomi/-ni* -endings or the semantic or pragmatic interpretation of the proposition. I will make the following proposals for Japanese conditionals.

- 1) Modals which can be made into past tense, may signal counterfactuality.
- 2) Modals that cannot be made into past tense morphologically, but which may select a past-tensed proposition, can signal counterfactuality.
- 3) In *-nara* conditionals which express simultaneous events, an agreement-like phenomenon of tense marking is observed.

Section 1 discusses the morphological restrictions of modals in the consequent main clause. Section 2 analyzes the tense relations in the three types of conditionals.

Past researchers of Japanese conditionals have contributed immensely to the accumulation of empirical data and insightful observations. Temporal sequence in Japanese conditionals can be interpreted differently depending on whether the subordinator *-nara* is used or *-tara* is used, as many researchers have pointed out (e.g. Kuno 1973, Minami 1974, Iori 2001, Tsunoda 2004, Arita 2006, 2009, Takubo 2009).² However, with the exception of Tsunoda (2004), it seems that emphasis of study is placed on the features of the antecedent rather than the consequent. In this paper, I will examine the temporal relations between the antecedent and the consequent based on the studies of tense by Machida (1989) and Mihara (1992).

1. Classification of Conditionals

Following Dancygier (1998) and Arita (2006,2009), conditionals are classified into the following three types: predictive conditionals, epistemic conditionals, counterfactual conditionals. When the logical structure of conditionals are expressed as "if *p*, then *q*", where *p* and *q* are propositions, these three types of conditionals differ in the speaker's attitude towards *p*. Predictive conditionals are used when the truth value of *p* is not determined at the time of utterance. The feature of the truth value of *p* being determined at the time of the utterance is called "settledness" by Arita (2006,2009). Epistemic conditionals are used when the speaker does not know whether *p* is true or not (although the truth value is determined) and expresses *q* as his or her judgment or attitude concerning *p*. Counterfactual conditionals are used when the speaker knows that *p* is not true, and expresses in *q* his or her attitude concerning *p*. Table 1 shows the classification of these conditionals based on Arita (2006:133) with minor alterations. According to Arita (2006:126) conditionals are "explicit expressions of inferences based on indeterminate knowledge."

Table 1. Classification of conditionals

classification	truth condition of p at utterance time	speaker's attitude toward p
Predictive conditionals	not determined	does not know the truth
Epistemic conditionals	determined	does not know the truth
Counterfactual conditionals	determined	knows the truth (p is F)

In the later section, I will show that the interpretation of q should also be considered in relation to p .

Predictive conditionals are conditional sentences whose truth conditions of the antecedent are not determined at the time of utterance, as shown in (1) and (2).

(1) If it rains tomorrow, the game will be cancelled. (predictive)

(2) (mosi) Asu ame-ga hut-tara, siai-wa tuusi-ni naru -daroo.

If tomorrow rain-nom fall-TARA game-top cancel-dat become-DAROO

“If it rains tomorrow, the game will be cancelled.”

Epistemic conditionals such as (3) and (4) are sentences whose truth conditions of the antecedent are determined, and which are not known to the speaker. The consequent of epistemic conditionals expresses the speaker’s judgment or attitude, typically using modal expressions.

(3) a. If you will help me, we can finish early. (epistemic)

b. If Mary is late, she went to the dentist.

c. If Mary is late, she must have gone to the dentist.

d. If Mary is late, **it means that** she went to the dentist.

(4) (mosimo) Hanako-ga pro_i tukat-teiru-nara, yoi keshoohin,-ni tigainai.

if -nom use-asp-NARA good cosmetics-NI TIGAINAI

Tsunoda (2004:13)

“If Hanako is using (it), (it) must be a good cosmetic product.”

Speakers of counterfactual conditionals such as (5) and (6) know that p is false and can infer that q , which is also false, from that assumption.

(5) a. If you had listened to me, you wouldn’t have made so many mistakes.

b. If I were a bird, I could fly to you. (counterfactual)

- (6) a. {Mosi/mosimo} ano toki kare-ga tasuke-te i-nakat-tara,
 If/if that time he-nom help-asp-neg- TARA
 imagoro-wa kanozo-wa sinn-dei-ta-daroo.³
 now-top she-top die-asp-past-DAROO
 “If he did not help (her) at that time, she would have been dead.”
- b. {Mosi/mosimo} tubasa-ga at-tara, imasugu tonnde-iku-noni.
 If/if wing-nom have- TARA immediately fly-go-though
 “If (I) had a wing, I would go and fly right away.”

The conditionals in (2), (4), and (6) correspond to “hypothetical conditionals” and “counterfactual conditionals” in Iori’s (2001:209-213) classification of five types of conditionals.⁴ The other three types of conditionals are not discussed in this paper because they do not allow adverbials such as “mosi/mosimo” (if) or “man-iti” (once in ten thousand). “Mosi/mosimo” can be omitted in Japanese conditional sentences.

1.1. Morphological Restrictions on Modal Expressions

Before discussing the tense interpretation of three types of conditionals, I will describe the morphological properties of seven modal expressions, largely epistemic modals and deontic modals, such as the ones used in (2), (4), and (6).

These seven modal expressions can be categorized into the following three types according to the form of the proposition they can follow. These are considered to be the selectional properties of each modal expressions.

- 1) modals which follow [Verb stem + *ru*], [Verb stem + *ta*], and negation
- 2) modals which can follow [Verb stem + *ru*], but cannot follow [Verb stem + *ta*] or negation.
- 3) modals which cannot follow [Verb stem + *ru*], or [Verb stem + *ta*], or negation, and must follow directly the verb stem.

Examples of modals in 1) are “hazu-da” (it follows that) expressing logical inference, “daroo” (will), “ni tigai-nai” (must) expressing inference, “kamosirenai” (may) expressing possibility. An example of modals in 2) is “beki-da” (should). Modals in 3) are “-nakereba naranai” (must) expressing obligation, “-nakutemo yoi” (not have to).⁵

The following examples contains modals “hazuda”, “daroo”, “ni tigainai”, “kamosirenai” in type 1). Examples from (7a) to (10a) show that modals in this class cannot follow just the verb stem without *-ru* or *-ta*.

- (7) a. Taroo-wa tabun [ku-ru/*ku] hazu-da.
 -top perhaps [come-pres/*come] HAZU-cop
 “Perhaps Taroo shall come.”

- b. Taroo-wa tabun [ko-nai/ki-ta] hazu-da.
 -top perhaps [come-neg/come-pst] HAZU-cop
 “Perhaps Taroo shall [not come/have come]”
- (8) a. Taroo-wa osoraku [ku-ru/*ku] daroo.
 -top possibly [come-pres/*come] DAROO
 “Taroo will possibly come.”
- b. Taroo-wa osoraku [ko-nai/ki-ta] daroo.
 -top possibly [come-not/ come-pst] DAROO
 “Taroo will [not possibly come/possibly have come]”
- (9) a. Taroo-wa osoraku [ku-ru/*ku] ni tigainai.
 -top possibly [come-pres/*come] NI TIGAINAI
 “Taroo must surely be coming.”
- b. Taroo-wa osoraku [ko-nai / ki-ta] ni tigainai.
 -top possibly [come-not/ come-pst] NI TIGAINAI
 “It is certain that Taroo will not come/ have come.”
- (10) a. Hanako-wa hyottosuruto [ku-ru/*ku] kamosirenai.
 -top probably [come-pres/*come] KAMOSIRENAI
 “Probably Hanako may come.”
- b. Hanako-wa hyottosuruto [ko-nai/ki-ta] kamosirenai.
 -top probably [come-neg/come-pst] KAMOSIRENAI
 “Probably Hanako may [not come/ have come.]”

“Beki-da” (*should*) belong to class 2) and this modal follows [Verb stem + *ru*] but cannot follow [Verb stem + *ta*] or negation, as pointed out in Iori (2001:172).

- (11) a. Hanako-wa zehi [ku-ru/*ku] beki-da.
 -top by all means [come-pres/*come] BEKI-cop
 “Hanako should come by all means.”
- b. *Hanako-wa zehi [ko-nai/ ki-ta] beki-da.
 -top by all means [come-neg/come-pst] BEKI-cop
 “*Hanako should [not come/ have come] by all means.”

Here are the examples of class 3) modals, “nakereba naranai” (obligatory *must*) and “nakutemo yoi” (*not have to*)

- (12) a. Hanako-wa zehi [ika-] nakereba naranai.
 -top by all means go-NAKEREBA NARANAI
 “Hanako must go by all means.”

- b. *Hanako-wa zehi [ik-u/ika-nai/ i-tta] nakereba naranai.
 -top by all means [go-pres/go-neg/go-pst] NAKEREBA NARANAI
- (13) a. Hanako-wa [ika-] nakutemo yoi.
 -top go-NAKUTEMO YOI
 “Hanako does not have to go.”
- b. *Hanako-wa [ik-u/ika-nai/i-tta] nakutemo yoi.
 -top [go-pres/go-neg/go-pst] NAKUTEMO YOI

The morphological properties of seven modals discussed in this section are summarized in Table 2.

Table 2. forms of propositions selected by modal expressions

	Modals	Verb stem	-ru	-ta/negation
①	<i>hazu-da</i> (inferential <i>should</i>)	No	Yes	Yes
②	<i>daroo</i> (<i>will</i>)	No	Yes	Yes
③	<i>ni-tigainai</i> (inferential <i>must</i>)	No	Yes	Yes
④	<i>kamosirenai</i> (possibility <i>may</i>)	No	Yes	Yes
⑤	<i>beki-da</i> (<i>had better</i>)	No	Yes	No
⑥	<i>nakerebanaranai</i> (obligatory <i>must</i>)	Yes	No	No
⑦	<i>nakutemo yoi</i> (<i>not have to</i>)	Yes	No	No

In this section, we saw that there are seven modal expressions which were classified according to the forms of propositions they can select. In the next section, it will be shown that the deontic modals that cannot select past-tensed propositions (i.e. “beki-da”, “nakerebanaranai” and “nakutemo yoi”) can be made into past tense and signal the meaning of counterfactuality.

1.2. Modals interacting with Past Tense

In this section, it will be shown that modals which can be made into past tense may signal counterfactuality. It is also shown that modals which cannot be made into past tense, but which may select a past-tensed proposition signal counterfactuality.

According to Iori (2001:171-176), modals cannot be negated or made interrogative because they are subjective expressions. Can we make them into past tense forms? “Hazu-da” can be made into past tense form, while “daroo”, “ni tigainai” (inferential *must*), “kamosirenai” (possibility *may*) cannot. (The judgments of the following examples are mine.)

- (7) Taroo-wa osoraku [ku-ru] hazu-dat-ta.
 -top perhaps come-pres HAZU-cop-pst
 “Perhaps Taroo would come.”
- (8) *Taroo-wa osoraku [ku-ru] daroo-ta.
 -top possibly come DAROO-pst
- (9) ?*Taroo-wa [ku-ru] ni tiginakat-ta.
 -top come-pres MUST-pst
 “*Taroo musted be coming.”
- (10)?*Hanako-wa hyottosuruto [ku-ru] kamosirenakat-ta.
 -top probably come-pres KAMOSIRENAI-pst
- (11) a. Hanako-wa [ik-u] beki-da-tta.
 -top go-pres BEKI-cop-pst
 “Hanako should have gone.”
- (12) Hanako-wa [ika-] nakereba naranakat-ta
 -top go -NAKEREBA NARANAI-pst
 “Hanako had to go.”
- (13) a. Hanako-wa [ika-] nakutemo yokat-ta.
 -top go -NAKUTEMO YOI-pst
 “Hanako did not have to go.”

The above examples show that "daroo" "ni tiginai" and "kamosirenai", which are epistemic modals, behave like English *must* in that they cannot be made into past tense forms.⁵ On the other hand, "hazu-da", "nakerebanaranai", and "nakutemo yoi", which are deontic modals, can be made into past tense and the past tense forms of these modals are used in the consequent (apodosis) of the counterfactual conditional.⁶

- (7") Taroo-wa [mosi mania-tta-nara] [ku-ru] hazu-dat-ta
 -top if in time -pst-NARA come-pres HAZU-cop-pst
 “If (he) was in time, Taroo would have come.”
- (11") a. Hanako-wa [mosi kikai-ga at-tara] [ik-u] beki-dat-ta.
 -top if chance-nom have-TARA go-pres BEKI-cop-pst
 “Hanako should have gone if she had chance.”
- (12") Hanako-wa [Taroo-ga ika-nakat-tara] [ika-]
 -top -nom go-neg-TARA go-
nakereba naranaka-tta (daroo).
 NAKEREBA NARANAI-pst (DAROO)
 “Hanako would have had to go if Taroo did not go”
- (13") a. Hanako-wa [isogasii-nara] [ika-] nakutemo yokat-ta
 -top busy-NARA go-NAKUTEMO YOI-pst
 “Hanako would not have to go if she was busy.”

Table 3 shows which modals can be used with *-ta* form attached.

Table 3: Possibility of modals co-occurring with *-ta* forms

	Modals	co-occurrence with <i>-ta</i> form
①	<i>hazu-da</i> (inferential <i>should</i>)	Yes
②	<i>daroo</i> (<i>will</i>)	*
③	<i>ni-tigainai</i> (inferential <i>must</i>)	?*
④	<i>kamosirenai</i> (possibility <i>may</i>)	?*
⑤	<i>beki-da</i> (had better)	Yes
⑥	<i>nakerebanaranai</i> (obligatory <i>must</i>)	Yes
⑦	<i>nakutemo yoi</i> (<i>not have to</i>)	Yes

The modal expressions “daroo”, “ni tigainai”, “kamosirenai”, cannot be changed into past tense, but can select a past tensed clause in the proposition as discussed in 1.1. It is when these modals select the past tense form in the consequent that counterfactual interpretation arises.⁷

(8*) Mosimo Einstein-ga ik-itei-tara [a-e-ta/*a-e-ru] daroo.

if -nom live-asp-TARA [see-po-pst/*see-po-pres] DAROO
 “If Einstein were alive, (I) could have seen (him).”

(9*) Mosimo Einstein-ga ik-itei-tara [a-e-ta/*a-e-ru] ni tigainai.

if -nom live-asp-TARA [see-po-pst/*see-po-pres] NITIGAINAI
 “If Einstein were alive, (I) could have surely seen (him).”

(10*) Mosimo Einstein-ga ik-itei-tara [a-e-ta/*a-e-ru] kamosirenai.

if -nom live-asp-TARA [see-po-pst/*see-po-pres] KAMOSIRENAI
 “If Einstein were alive, (I) might have seen (him).”

In this section, I have shown that modals which can be made into past tense are used as a consequent of the counterfactual conditional. Furthermore, it was shown that modals not compatible with the past tense can be used as a consequent of the counterfactual conditional when the *-ta* form is used in the proposition.

2. Temporal Interpretation of Conditionals

In this section, the time sequence relations of three types of conditionals are carefully examined. Following Mihara (1992), I will use the following notation to represent the three possibilities when the time sequence of “if *p*, *q*” is considered.

1) the event p and the event q occurs simultaneously

$$p = q$$

2) the event p temporarily precedes the event q

$$p < q$$

3) the event q temporarily precedes the event p

$$q < p$$

The relative temporal relations between p , q and the utterance time (ut) determines the time when the events described in the conditional sentences happen as shown as follows:

4) future $ut < p, q$

past $p, q < ut$

present $p, q = ut$

In the following three sections, the tense interpretation of three types of Japanese conditionals are examined one by one. The tense interpretation of predictive conditionals in 2.1, epistemic conditionals in 2.2 and counterfactual conditional in 2.3.

2.1. Temporal Interpretation of Predictive Conditionals

In predictive conditionals, the truth value of the proposition expressed by the antecedent is not determined at utterance time. In the following sentences (1) and (2), the antecedent p denotes a future event, although the verb form of p differs from the verb form of q .

(1) If it rains tomorrow, the game will be cancelled.

(2) (mosi) asu ame-ga hut-tara, siai-wa tuusi-ni na-ru -daroo.

(If) tomorrow rain-nom fall-TARA game-top cancel-dat become-pres-DAROO

In the main clause of both English and Japanese verbs, the present tense forms of verbs are used to express events that are bound to happen, but has not happened at the utterance time.

(1') a. ?It rains tomorrow.

b. It will rain tomorrow.

(2') a. *Asu ame-ga hut-ta.

tomorrow rain-nom fall-pst

"It rained tomorrow."

b. ?Asu ame-ga hu-ru.

tomorrow rain-nom fall-pres

“It rains tomorrow.”
 c. Asu ame-ga hu-ru-daroo.
 tomorrow rain-nom fall-pres
 “It will rain tomorrow.”

In the antecedent p in (1) and (2), the verbs do not express an actual time of the occurrence of the event p . In English, the future event of raining is denoted by the present tense form of the verb. Some researchers call this grammatical phenomenon a “backshift” of the tense. Also in Japanese, the connective *-tara* in (2) follows the verb stem *hur-* (fall). Thus the verb forms of the consequents q in (1) and (2) indicate the time of the event, which is in the future. The time sequence of events expressed in predictive conditionals (1) and (2) are represented as follows:

(14) $ut < p < q$

The event of raining p and the event of cancelling the game occur in the future. It can be interpreted that after the event of raining, the game is cancelled.

The characteristic of predictive conditional is that the event p and the event q occur after the utterance time.

2.2. Temporal Interpretation of Epistemic Conditionals

When epistemic conditionals are used, the speaker does not know whether p is true, and expresses his or her judgment concerning p in q .

(15) a. (=3a) If you will help me, we can finish early.
 b. Anata-ga tetudatte-kureru-nara, hayaku sigoto-o owa-ru
 you-nom help-give-NARA early work-acc end-pres
 kota-ga deki-masu.
 KOTO-GA DEKI (can)-pol
 “If you will help me, we can finish early.” ($ut < p < q$)

The connective *-nara* is used most appropriately when the speaker's judgment or attitude is expressed.

According to Kuno (1973:176), by uttering “S1-nara S2” “(t)he speaker presents S1 as the assertion by the hearer (or people in general) without completely agreeing with it.” In other words, “ p -nara q ” can be paraphrased as “If you assert that p , then (I infer that) q ”. Thus (15) is paraphrased as “If you assert that [you help me], then (I infer that) [we can finish early].”

The temporal relation of just the proposition p and q in (15) is expressed as “ $ut < p < q$ ”. The event p of you helping me occurs before the event q of us finishing the

work early.

The following example is a conditional in which the event p and the event q occur simultaneously.

- (4) (mosimo) Hanako-ga pro_i tuka-tteiru-nara, yoi keshoohin_i-ni tigainai.
 if -nom use-asp-NARA good cosmetics-NI TIGAINAI
 Tsunoda (2004:13)
 “If Hanako is using (it), (it) must be a good cosmetic product.”
 $ut = p = q$

In (4), the event p "Hanako uses the cosmetic product" is the reason why the speaker thinks that q "it must be a good product". The conditional in (4) does not express the future or the past, but expresses the speakers' judgement at the time of utterance.

Kuno (1973:170-171) observes that in epistemic conditionals with *-nara*, the consequent cannot be made into the past tense.

- (16) a. *John-ga ku-ru-nara, Mary-ga kaeri-masi-ta.
 -nom come-pres-NARA -nom go back-pol-pst
 b. *John-ga ki-ta-nara, Mary-ga kaeri-masi-ta.
 -nom come-pst-NARA -nom go back-pol-pst

It is speculated that the reason why (16) is not acceptable is that *-nara* conditional's consequent q expresses the speaker's subjective opinion and judgment, which is not compatible with the past tense. Since a sentence with the past tense describes an event whose truth value is already determined, there is no room for the speaker to judge or infer about the truth condition of the sentence with the past tense.

Japanese *-nara* sentences in (16) correspond to the English epistemic conditional (3b). If the sentences in (16) are changed into epistemic conditionals with *daroo* that explicitly shows speaker's judgment, they will become acceptable as shown in the following:

- (16') a. Mosi [John-ga ku-ru]-nara, [Mary-wa kaer-u]-daroo
 If -nom come-pres-NARA -nom go back-pres-DAROO
 “If John comes, Mary will go back.”

The following examples in (17) shows an agreement-like phenomenon of tense marking in *-nara* conditionals that express simultaneous events. In these examples, the tense of the antecedent and the tense of the consequent are explicitly specified by time adverbials such as “*asu*” (tomorrow) and “*san-nen-mae*” (three years ago). These examples show that the interpretation of tense of p depends on the tense of q .⁸

- (17) a. Mosi [John-ga ku-ru]-nara, [asu Mary-wa kaer-u]-daroo.
 If J -nom come-pres-NARA tomorrow M-nom go back-pres-DAROO
 “If John comes, Mary will go back tomorrow.”
- b. Mosi [~~*asu~~] John-ga ku-ru]-nara, [Mary-wa kaet-ta]-daroo.
 If (~~*tomorrow~~) -nom come-pres-NARA -top go back-pst -DAROO
 “If John comes, Mary will go back.” ($ut < p = q$)
- c. Mosi [John-ga san-nen-mae ki-ta]-nara, [Mary-wa kare-o
 If nom 3-years-ago come-pst-NARA -top go he-acc
 [~~*yurus-u~~/~~yurusi-ta~~] daroo.
 [~~*foregive-pres/foregive-pst~~] DAROO
 “If John came 3 years ago, Mary would (~~*have~~) forgiven him.”
 $p = q < ut$

(17a) shows that the adverbial “asu” (tomorrow) is compatible with the present tense form of the verb “kaeru” in q . (17b) shows that the adverbial “asu” in p is incompatible with the past tense “kaetta” in q , assuming $p = q$ interpretation. In (17c), the adverbial “san-nen-mae” (three years ago) in p requires the verb forms in p and q to be in the past tense form.

Although the conditional *-nara* connective has no morphological restriction on choosing *-ta* form or *-ru* form, when simultaneous events are expressed, the tense form of p depends on the tense form of q .

Machida’s (1989) examples in (18) also show the dependency of tense interpretation between p and q .

- (18) a. *[Hanako-ga san-nen-mae utukusij]-nara Taroo-wa kanojo-to
 -nom 3-years-ago beautiful-pres-NARA -top she-with
 kekkonsi-ta daroo.
 marry-pst DAROO
 “*If Hanako is beautiful three years ago, Taroo will have married with her.”
- b. [Hanako-ga utukusij]-nara san-nen-mae Taroo-wa kanojo-to
 -nom beautiful-pres-NARA 3-years-ago T-top she-with
 kekkonsi-ta daroo.
 marry-pst DAROO
 “*If Hanako is beautiful, Taroo would have married with her three years ago.”
- c. [Mukasi Hanako-ga utukusika-tta]-nara Taroo-wa kanjo-to
 in-the-past -nom beautiful-pst-NARA T-top she-with
 [~~*kekkonsu-ru/kekkonsi-ta~~] daroo.
 [~~*marry-pres/marry-pst~~] DAROO
 “*If Hanako had been beautiful in the past, Taroo would have married with her three years ago.”

The event p "Hanako is beautiful" and the event q "Taroo marrying Hanako" occurred simultaneously in the past. The temporal relation is expressed as follows: $p = q < ut$

According to Kuno (1973) and Mihara (1992:178-181) conditionals with *-tara*, *-to*, *-ba* can all express events in temporal order $p < q$ but not $q < p$.^{9,10}

(19) a. (mosi) Ontake-ga hunkasi-tara dai-konran-ga oko-ru zo.

(If) Mt. Ontake-nom erupt-TARA big confusion occur-pres-excl.

"If Mt. Ontake erupts, there will be a great confusion."

$ut < p < q$

b. *(mosi) Ontake-ga hunkasi-tara sono mae-ni zenntyo-ga aru-hazu-da.

(If) Mt. Ontake-nom erupt-TARA that before symptom-nom exist-HAZU-cop

"If Mt. Ontake erupts, there must be a precursor before that."

* $ut < q < p$

(Mihara 1992)

(19b) is unacceptable because a *-tara* conditional is used to express the temporal order of $q < p$. A *-nara* conditional does not have this kind of temporal restriction.

(20) a. (mosi) Ontake-ga hunkasu-ru-(no)-nara sono ato-ni Fujisan-mo

(If) Mt. Ontake-nom erupt-pres-(cp)-NARA that after Mt. Fuji-also

hunkasu-ru-daroo.

erupt-pres-DAROO

"If Mt. Ontake erupts, Mt Fuji will erupt after that."

$ut < p < q$

b. (mosi) Ontake-ga hunkasu-ru-(no)-nara sono mae-ni zentyo-ga aru-hazu-da.

(If) Mt. Ontake-nom erupt-(cp)-NARA that before symptom-nom exist-HAZU-cop

"If Mt. Ontake erupts, there must be a precursor before that"

$ut < q < p$

(Mihara 1992)

Temporal order restriction on Japanese conditionals is shown in Table 4 as follows:

Table 4: Temporal restriction on Japanese conditionals

	<i>-tara</i> conditional	<i>-nara</i> conditional
$p < q$	Yes	Yes
$q < p$	No	Yes (with restrictions)
$p = q$??	Yes

It seems that temporal order restriction such as the one found in *-tara* conditional is not seen in English. Certain kinds of English epistemic conditionals cannot be directly translated into a *-nara* conditional.

- (3) b. If Mary is late, she went to the dentist.
 c. If Mary is late, she must have gone to the dentist.
 d. If Mary is late, it means that she went to the dentist.
 (Dancygier 1998)

The temporal order in conditionals in (3) is shown as follows:

- (21) $q < p = ut$
 $p =$ that Mary is late $= ut$
 $q =$ that Mary goes to the dentist

The speaker of (3b) thinks that the reason for the event p that Mary is late is q the event that Mary went to the dentist. Arita (2006:141) points out that (3b) can be paraphrased as (3c) or (3d), and that when (3b) is rendered into Japanese, one has to explicitly mention the part that indicate the speaker's judgment (i.e. it means that, must) by adding "no-da" / "n-da".

- (22) a. *Mosi Mary-ga okure-teiru-nara, kanojo-wa haisya-ni i-tta.
 if -nom late-asp-pres-NARA she-nom dentist-to go-pst
 b. Mosi Mary-ga okure-teiru-nara, kanojo-wa haisya-ni
 if -nom late-asp-pres-NARA she-nom dentist-to
 [i-tta-n-da/i-tta-n-daroo/*i-tta-daroo/*i-tta-hazu-da].
go-pst-N-cop/itta-N-DAROO/*go-pst-DAROO/*go-pst-HAZU-cop

Unlike the English counterparts, *-nara* conditionals with $q < p$ order seem to have a syntactic restriction on the consequent. The consequent proposition has to be marked with the complementizer *no/n*, otherwise these conditionals are unacceptable as shown in (22b). More studies should be conducted to find out what these syntactic restrictions are.

The same thing can be said about the following sentence which also has a similar temporal order $q < p$ (q occurs before p).

- (23) a. If she is in the lobby, (it means that) the plane arrive early.
 (Dancygier 1998)
 b. *Mosi Mary-ga robii-ni i-ru-nara , hikoki-ga hayaku tui-ta.
 If M-nom lobby-at be-pres-NARA plane-nom early arrive-pst
 c. Mosi Mary-ga robii-ni i-ru-nara, hikoki-ga hayaku [tui-ta-n-da/*tui-ta-hazu-da].
 If M-nom loby-at be-pres-NARA plane-nom early arrive-pst-N-cop/*arrive-pst-HAZU-DA
 $q < p = ut$

In this section, the temporal relations between the propositions p and q are examined. In (17c), (18c), (21), and (23), the consequent q is expressed in the past tense,

but the truth value of q is not determined at utterance time.

It was shown that *-tara* conditionals are restricted to $p < q$ temporal sequence, while *-nara* conditionals do not have this restriction. In English, there are no such restrictions and conditionals may be expressed with no explicit modal auxiliaries as in (21b) and (23a). I proposed that in *-nara* conditionals which express simultaneity, the tense of p is dependent on the tense of q .

2.3. Temporal Interpretation of Counterfactual Conditionals

In some cases, Japanese epistemic conditionals and counterfactual conditionals are ambiguous in form as Arita (2006, 2009) has pointed out. Let us compare them with conditionals in English.

- (24) a. If Hanako was beautiful, Taro [married/would marry] her. (epistemic)
 b. If Hanako was beautiful, Taro would have married her. (counterfactual)
 c. [Hanako-ga utukusikat-tara Taroo-wa kanojo-to
 in-the-past -nom beautiful-TARA T-top she-with
 kekkonsi-ta daroo.
 marry-pst DAROO
 d. ...Sosite zissai kare-wa ninen-mae Hanako-to kekkonsi-tei-ta..
 and actually he-top 2years-ago H-with marry-asp-pst
 “and actually he was married to Hanako two years ago.”
 e. ...sikasi kare-wa ima-demo dokusin-no-mama-da.
 but he-top now-even single-as=it=is-cop
 “but he is still single.”

Both an epistemic conditional (24a) and a counterfactual conditional (24b) can be expressed in Japanese as (24c). The counterfactual meaning in (24c) can be cancelled when it is followed by (24d) and can be strengthened when it is followed by (24e). As Arita (2006, 2009) describes, (24c) can be explicitly made counterfactual by adding *-ni* after the modal *daroo*.

Speakers of counterfactual conditionals know that the antecedent p is false and infer from p that q . Speakers know that q is also false. The following sentences indicate that the event q did not happen.

- (5) a. If you had listened to me, you wouldn't have made so many mistakes.
 p = you listen to me
 q = you do not make so many mistakes
 Not $p \leq$ Not $q < ut$

(5a) shows that before utterance time the event of not p (i.e. the hearer not listening to

the speaker) occurred, which led to not q (i.e. the hearer making so many mistakes).

The temporal interpretations of Japanese counterfactual conditionals can be represented in a similar way.

- (6) a. {Mosi/Mosimo} ano toki kare-ga tasuke-te i-naka-ttara,
 If/if that time he-nom help-asp-neg-TARA
 imagoro-wa kanozyo-wa sinn-dei-ta-daroo-(ni).
 now-top she-top die-asp-pst-DAROO-(NI)
 “If he did not help (her) at that time, she would have been dead.”
 p =he did not save her at that time
 q =she was dead now
 Not $p \leq$ Not $q \leq ut$

The speaker utters (6a), knowing that the event p (him not saving her) is false. The speaker assumes that the event q (she is dead) is also false. The speaker knows that not q (i.e. that she is alive) is true.

In this section, it was shown that Japanese conditionals can be ambiguous between epistemic and counterfactual conditionals. When the events p and q occur before the utterance time (i.e. in the past), the conditional can be interpreted as counterfactual. Since the speaker can know only the truth conditions of the events that occurred in the past.

3. Concluding Remarks

In this paper, I proposed that past tense morphemes on modals may signal counterfactuality. The modals that are not compatible with past tense morpheme can select a past-tensed proposition and may signal counterfactuality. Furthermore, an agreement-like phenomenon of tense-marking was observed in *nara*-conditionals that express simultaneous events. Although there appears to be no regularity in the interpretation of conditionals, it turned out that we have some regularity in the marking of tense.

*I am deeply grateful to the anonymous reviewer of this article for discussing the Japanese sentences and giving precise and invaluable comments. I am also extremely thankful to Dr. Robert Waring for discussing the English sentences and improving the style of my English. All remaining errors and inadequacies are mine.

Notes

- ¹ Ogiwara (2014), which also pursues Iatridou's (2000) idea, has recently been brought to my attention by the reviewer. At this point, I am not able to respond to the details of his analysis, but I will do so in the future research since his paper seems to contain similar ideas as mine.

- ² This paper treats only *nara*-conditionals and *tara*-conditionals. Other conditional expressions with the subordinators “-to” and “-ba” are not discussed here. The subordinator *tara* morphologically selects verb stems and *nara* selects propositions with *-ru* forms, *-ta* forms and negation. Historically *-tara* is said to be derived from *-ta + ra*.
- ³ I abstract away from the differences between *wa* and *ga* in this paper. I will use more natural expressions. Nothing in the argument of this paper hinges upon their differences.
- ⁴ Iori's (2001:209-213) other three types of conditionals are as follows:
- (i) definite condition
 - (*mosi) zyuuuzi-ni nat-tara, syuppatusi-mashoo.
 - *if 10 o'clock-become TARA leave-let's
 - “When / *if (it's) 10 o'clock, let's leave.”
 - (ii) constant condition
 - mizu-wa (*mosi) rei-do-ni nat- tara koo-ru.
 - water-top (*if) 0-degree-become-TARA freeze-pres
 - “Water freezes when / *if it is 0 degree.”
 - (iii) factual condition (= speech act conditionals)
 - (*mosimo) koko-made ki-tara, moo daizyoobu-da.
 - (*if) here-till come-TARA now all=right-cop
 - “When / *if (it) comes to this, (it's) all right.”
- ⁵ Modal expressions such as “-nakereba naranai” , “ -ni tigai-nai” are morphologically decomposable into smaller units. However, they are syntactically and semantically treated as one unit here.
- ⁶ As the reviewer pointed out, these deontic modals in the past tense form seem to have a counterfactual interpretation even without the conditional antecedents.
- ⁷ The reviewer pointed out that epistemic modals with a past-tensed proposition cannot have a counterfactual reading by itself. They need the antecedent clause. For instance, the following example cited by the reviewer does not have a counterfactual reading, but it indicates the speaker's inference about his completed action.
- (i) Kare-wa moo gakoo-e it-ta daroo.
 - he-top already school-to go-pst DAROO
- It is interesting to note that (i) still shows that the speaker does not know that *q* is true at the utterance time. In other words, (i) indicates the unsettledness of *q*.
- ⁸ Japanese *-ta* forms express not only past tense, but also are used in various contexts. For instance, they are used where perfective aspect is expressed or as an imperative. By the same token, *-ru* forms not only express present and definite future tense, but also volition and they are implicitly modal as *ik-u* (go) in (6b). Some scholars call *-ru* forms “non-past”.

Here *-ta* forms and *-ru* forms are glossed as pst and pres, respectively for brevity.

- ⁹ The temporal sequence $ut < p < q$ is also possible in *-nara* conditionals, but $q < ut < p$ does not seem acceptable since (ii) is semantically and pragmatically impossible inference.

(i) Mosi [John-ga asu ku-ru]-nara, [asatte Mary-wa

If J -nom tomorrow come-pres-NARA day-after-tomorrowM-top

kaer-u]-daroo.

go = back-pres-DAROO ($ut < p < q$)

“If John comes tomorrow, Mary will go back the day after tomorrow.”

(ii) ?*Mosi [John-ga asu ku-ru]-nara, [kinoo Mary-wa

If J -nom tomorrow come-pres-NARA yesterdayM-top

kae-tta]-daroo.

go-back-pst-DAROO ($?*q < ut < p$)

?*“If John comes tomorrow, Mary would have gone back yesterday.”

- ¹⁰ See Solvang (2006) for the survey of second language acquisition of the temporal order of *-tara* conditionals.

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