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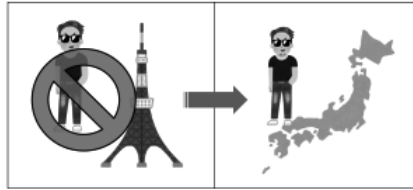
Conditionals with/without Obligatory Particles*

Shun Ihara

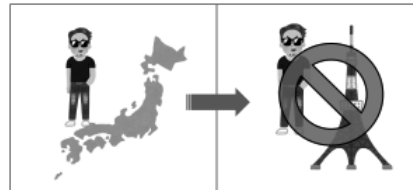
1. Introduction

Mandelkern & Romoli (2018) have an intuition that (1) is bad and (2) is good.

- (1) **BAD**: #If John is not in Tokyo, he is in Japan.



- (2) **GOOD**: If John is in Japan, he is not in Tokyo.



This is puzzling, because both **BAD** and **GOOD** have the same underlying structure at a certain logical abstraction: in both cases, the negation of the antecedent entails the consequent. In other words, at a certain level of abstraction, both have the structure in (3), where p^+ is a sentence which asymmetrically entails p .

- (3) If $\neg p^+$, then p .
where p^+ is a sentence which asymmetrically entails p .

To see that **BAD** has this structure, let $p^+ = \text{John is in Tokyo}$ and $p = \text{John is in Japan}$. To see that **GOOD** has this structure, let $p^+ = \text{John is not in Japan}$ and $p = \text{John is not in Tokyo}$.

Mandelkern & Romoli call this form of conditionals *Hurford conditionals*.¹ They argue that existing

*I am grateful to Kenta Mizutani, Hiroshi Mito, and Osaka University LCCC members for discussions and comments. Of course, all errors are my own. E-mail: iharashun0@gmail.com

¹They call the conditionals ‘Hurford’ because the conditionals are closely related to *Hurford Disjunctions* (Hurford 1974) in which one disjunct entails the other; that is, disjunctions with the form $\lceil p \vee p^+ \rceil$ or $\lceil p^+ \vee p \rceil$. **BAD** and **GOOD** correspond to (i) and (ii) respectively in that each is constructed from (i) and (ii) by way of an ‘or-to-if’ inference (Stalnaker 1974). These observations that Hurford disjunctions are generally infelicitous is known as *Hurford’s constraint* (Chierchia et al. 2012).

- (i) #Either John is in Paris or he is in France.
(ii) #Either John is not in France or he is not in Paris.

theories of informational oddness, namely *redundancy-based theories* and *triviality-based theories*, do not distinguish between **BAD** and **GOOD**.² Although they have not been able to find a satisfying explanation of the contrast, they note that one possible direction would be to focus on *obligatory particles* like *still*. As in (4), the insertion of *still* makes **BAD** quite felicitous.

(4) If John is not in Tokyo, he is **still** in Japan.

cf. #If John is not in Tokyo, he is in Japan. (= **BAD**)

A hypothesis could therefore be that these sort of particles are obligatory in contexts like the consequent of **BAD**, and it is their omission which leads to oddness (Mandelkern & Romoli 2018: 365).

Focusing on obligatory discourse particles, in this paper I attempt to find a satisfying explanation of the contrast found in Hurford conditionals. The upshot of this paper is as follows. I argue that a logical triviality makes the **BAD** strange (§2), but an insertion of certain obligatory discourse particles can disrupt it by turning **BAD** into a non-trivial conditional. As for **GOOD**, I claim that it is entirely natural, because it is already a non-trivial conditional (§3). However, the obligatory particles cannot be added to the **GOOD** case with impunity: the insertion of obligatory particles requires certain *Question under Discussion* (QuD, Roberts 1996) to be defined (§4).

2. Explaining BAD

As observed in Hurford disjunctions (Hurford 1974), categorial relations seem to be the core of the problem in Hurford conditionals. Hurford points to the following well-known generalization: a sentence that contains a disjunctive phrase of the form ‘S or T’ is infelicitous if S entails T or T entails S. This constraint is illustrated by the infelicity of the following sentences:³

(5) a.#Mary saw a dog or an animal.

b.#Mary saw an animal or a dog.

c.#Every girl who saw an animal or a dog talked to Jack.

The subtype/type relation functions in (5): ‘dog’ is a subset of ‘animal,’ and ‘animal’ is a superset of ‘dog.’ The examples in (5) are all bad since ‘being a dog’ entails ‘being an animal’ but ‘being an animal’ does not entail ‘being a dog.’ (Note that subset (SUB) \models_{entail} a superset (SUPER) whereas SUPER $\not\models$ SUB.)

²As redundancy-based theories, a *material implication* ($\vdash p \rightarrow q$) analysis and a *strict implication* ($\vdash \Box p \rightarrow q$, von Stechow (2001)) analysis predict both **BAD** and **GOOD** to be infelicitous, and a *variably strict semantics* (: a material implication is analyzed relative to a contextual parameter, Kratzer (1986) does not predict that **BAD** and **GOOD** are infelicitous (See Mandelkern & Romoli (2018: 360–362). As triviality-based theories, both a *dynamic theory* (Heim 1983, a.o.) and an *incremental parsing-based theories* (Schlenker 2009) predict **BAD** and **GOOD** to be felicitous, and a *symmetric algorithm* predicts the both to be infelicitous (See Mandelkern & Romoli (2018: 362–363).

³As is well-known, Chierchia et al. (2012) have a counterexample to Hurford’s Constraint. See Chierchia et al. (2012: 2–3) for the relevant discussion.

Bearing this basic fact in mind, let us see what happens in Hurford conditionals. See Table 1 below, which I label “Hurford Square.”

	Negation in consequent	Negation in antecedent
$\lceil \text{SUPER} \rightarrow \text{SUB} \rceil$	① $\lceil \text{SUPER} \rightarrow \neg \text{SUB} \rceil$ (GOOD)	② $\lceil \neg \text{SUPER} \rightarrow \text{SUB} \rceil$ (\perp)
$\lceil \text{SUPER} \rightarrow \text{SUB} \rceil$	③ $\lceil \text{SUB} \rightarrow \neg \text{SUPER} \rceil$ (\perp)	④ $\lceil \neg \text{SUB} \rightarrow \text{SUPER} \rceil$ (BAD)

Table 1: Hurford Square

For example, let SUB be ‘Shun drinks Premium Malt’s’ and SUPER be ‘Shun drinks a beer,’ where ‘Shun drinks Premium Malt’s’ \models ‘Shun drinks a beer.’ Then, ① is translated to ‘If Shun drinks a **beer**, he does **not** drink a **Premium Malt’s**,’ which corresponds to the **GOOD** case. ② and ③ are translated to ‘If Shun does **not** drink a **beer**, he drinks a **Premium Malt’s**’ and ‘If Shun drinks a **Premium Malt’s**, he does **not** drink a **beer**,’ respectively, which both lead to contradiction. ④ corresponds to the **BAD** case which is translated to ‘If Shun does **not** drink a **Premium Malt’s**, he drinks a **beer**.’

Recall that the question here is why ④, namely **BAD**, is infelicitous. I argue that the infelicity of **BAD** comes from *tautology* (or *triviality*) generated by following steps:

- (6) If Shun does not drink a Premium Malt’s, he drinks a beer. (= ④, **BAD**)
 - i. ‘Shun drinks a Premium Malt’s’ entails ‘Shun drinks a beer.’
 - ii. The antecedent part of the conditional in ④ ‘If Shun does not drink a Premium Malt’s’ does not entail ‘Shun drinks a beer.’
 - iii. However, ‘If Shun does not drink a Premium Malt’s’ **presupposes** ‘Shun drinks (something)’; in this case, ‘If Shun does not drink a Premium Malt’s’ presupposes ‘Shun drinks a beer, just not a Premium Malt’s.’
 - iv. The subsequent part of the conditional in ④ ‘he drinks a beer’ simply **asserts** ‘Shun drinks a beer.’
 - v. Thus, in ④, the **presupposition** of the antecedent and the **assertion** of the subsequent make the same statement ‘Shun drinks a beer,’ which leads to tautology.

It is worth noting that a continuity of ‘a presuppositional content p_A to an assertive content p_B ’ generally leads to this sort of redundancy if $p_A = p_B$. For instance, van der Sandt (1992) claims that if the speaker first conveys p as a presupposition using a factive verb *know* which presupposes the truth of its sentential complement, and he then conveys the same p by asserting p , the assertion feels odd because of a triviality, cf. (7), (8).

- (7) John *knows* that it’s raining.
 - a. *know*(J, p): John knows that it’s raining.

- b. $p \gg_{pres}$: it's raining. (presupposition)
- (8) a. $\lceil p_{assert} \dashv\vdash p \gg_{pres} \rceil$
 It's raining. John knows that it's raining.
- b. $\lceil p \gg_{pres} \dashv\vdash p_{assert} \rceil$
 John knows that it's raining. #It's raining. (van der Sandt 1992)

One may wonder if the antecedent part of (6) ‘(If) Shun does not drink a Premium Malt’s’ really conveys the presupposition ‘Shun drinks (something).’ This can be examined by introducing the notion of a presupposition *hole*: a semantic operator that allows presuppositions to slip through it, even as that operator targets the at-issue content, e.g., negations, conditional antecedents, and interrogative operators (Karttunen 1973). Assume that (6) has the at-issue content that ‘Shun does not drink a Premium Malt’s’ (φ) and the presupposition that ‘Shun drinks something’ (p). Then, the translations on the right (the right of the arrow ‘ \rightsquigarrow ’) in (9a–c) have φ (subscript p) in the scope of negation, a conditional operator, and an interrogative operator, respectively. And yet, whereas φ is modified by these semantic operators, the presupposition p remains, in some sense, an entailment of all of these sentences.

- (9) Shun does not drink a Premium Malt’s. $\rightsquigarrow \varphi_p$
- a. If Shun does not drink a Premium Malt’s, (then...) $\rightsquigarrow \text{If}(\varphi_p)$
 (Implies: Does Shun drink something? \rightarrow YES.)
- b. Does Shun not drink a Premium Malt’s? $\rightsquigarrow ?\varphi_p$
 (Implies: Does Shun drink something? \rightarrow YES.)
- c. It is not the case that Shun does not drink a Premium Malt’s. $\rightsquigarrow \neg\varphi_p$
 (Implies: Does Shun drink something? \rightarrow YES.)

This section argues that it is a logical triviality (namely, tautology) that makes the **BAD** conditional strange. However, as we have already seen in Section 1, an insertion of certain discourse particles can disrupt it by turning **BAD** into a natural conditional. I will attempt to give an account for this fact in the next section.

3. *Still* and concessives

3.1. *Still* in **BAD**

Mandelkern & Romoli (2018) observe that an insertion of the obligatory discourse particle *still* makes **BAD** a felicitous sentence, as exemplified in (4) (repeated in (10)).

- (10) If John is not in Tokyo, he is **still** in Japan.
- cf. #If John is not in Tokyo, he is in Japan. (= **BAD**)

I suggest that this is because when *still* is inserted in **BAD**, the sentence is no longer **BAD**; *still* can turn **BAD** into a non-tautological conditional.

To see why *still* can play such a role, let me now introduce the semantics of *still* proposed by Ippolito (2004). She argues that *still* has three uses:

- (11) a. Aspectual use: *John is still cooking.*
 b. Marginal use: *Compared to Premium Malt's, Super Dry is still good.*
 c. **Concessive use:**
John studied all night and still failed the test.
 \approx *Despite the fact that John studied all night, he failed the test.*
 \approx John studied all night, *even so*, he failed the test.

Here, we focus on the concessive use of *still* in (11c). In (11c), *still* conveys that John's failing the test after having studied all night is somewhat 'unexpected,' as the translations 'despite the fact'/'even so' suggest. Ippolito proposes that the concessive *still* is a scalar particle, where the relevant ordering is the order of worlds according to their *likelihood* with respect to a certain proposition:

- (12) a. $\llbracket still_{con} \rrbracket^{g,c} = \lambda p_{st}. max_{\leq, w} \{w : w \in p \wedge w \in q\} \prec_{likely} max_{\leq, w} \{w : w \in p \wedge w \in \neg q\}$
 where q is a contextually salient proposition, i.e. the proposition that the particle associates with, and ' \prec_{likely} ' intuitively means "less likely." (Ippolito 2004: 138)
 b. For any proposition p , any similarity relation \leq , and any world w :
 $max_{\leq, w}(p) = \{w' : p(w') = 1 \ \& \ \forall w'' : p(w'') = 1 \rightarrow w' \leq_w w''\}$ (von Stechow 2001)
 c. Example:
 $\llbracket \text{John still failed the test} \rrbracket^{g,c} = 1$ iff $w \in \{w : \text{John failed the test in } w\}$;
 defined only if $max_{\leq, w} \{w : \text{John studied all night in } w \text{ and failed the test in } w\} \prec_{likely}$
 $max_{\leq, w} \{w' : \text{John did not study all night in } w' \text{ and failed the test in } w'\}$

Technically, in (12c), worlds where John failed the exam are ordered according to how likely they are given our actual assumptions. Then, the sentence asserts that John studied all night and failed the test in the actual world with the presupposition that the worlds maximally similar to the actual world in which John studies all night and fails the test are less likely than the maximally similar worlds where he does not study all night and fails the test. Ippolito argues that from this semantics of *still*, we can obtain an 'unexpectedness'; there's a 'despite the fact' or 'even so' reading (cf. (11c)).

Following Ippolito's analysis of *still*, I propose that the insertion of *still* turns a tautological conditional into a concessive conditional.

- (13) a. #If Shun does not drink a Premium Malt's, he drinks a beer. (**BAD**)
 b. If Shun does not drink a Premium Malt's, he **still** drinks a beer. (**BAD + still**)
 \rightsquigarrow **Despite the fact that** Shun does not drink a Premium Malt's, he drinks a beer.
 \rightsquigarrow Shun does not drink a Premium Malt's, **even so**, he drinks a beer.

In (13), although **BAD** (without *still*) causes a tautology as I have analyzed in Section 2, the insertion of *still* to the subsequent part makes the conditional completely natural since the conditional is no longer a **BAD** conditional but the concessive conditional.

3.2. Explaining GOOD

How should we explain the **GOOD** case in ① (repeated in (14))? We already know that the discourse particles like *still* is not demanded in **GOOD**. In (14), an insertion of *still* seems to be optional.

(14) If Shun drinks a beer, he (still) does not drink a Premium Malt's. (**GOOD**)

As for the **GOOD** case, I argue that it is a concessive conditional already as in (15); without inserting *still*, it might be the case that all conditionals of the form $\lceil \text{SUPER} \rightarrow \neg \text{SUB} \rceil$ convey concessive readings.

(15) If Shun drinks a beer, he does not drink a Premium Malt's.

~~ **Despite the fact that** Shun drinks a beer, he does not drink a Premium Malt's.

~~ Shun drinks a beer, **even so**, he does not drink a Premium Malt's.

3.3. Interim summary

Let me briefly summarize my findings so far. I have argued that the two different judgements about Hurford conditionals depend on whether they are tautology or concessive conditionals: **BAD** is tautology, but the insertion of *still* can disrupt it by turning it into a concessive conditional; on the other hand, **GOOD** is a concessive conditional already.

3.4. Alternative account: Maximize Presupposition

Before moving on to the next section, I would like to provide an alternative explanation that would explain the contrast between **BAD** and **GOOD**. Although in Section 2, I have proposed that it is a tautology that makes **BAD** so odd, I should note that there may also be another mechanism working, which is based on the general pragmatic principle called *Maximize Presupposition* initiated by Heim (1991).

(16) *Maximize Presupposition!* (Heim 1991):

Make your contribution presuppose as much as possible.

Recently, Maximize Presupposition has been reformulated and extended to explain all kinds of presupposition triggers (Percus 2006, Sauerland 2008, Chemla 2008, a.o.). The basic assumption behind newer proposals is that lexical items (or sentences) are in pragmatic competition; sentences with *presuppositionally stronger* items are assumed to be preferred (Percus 2006, Chemla 2008). For example, in (17), assuming that *too* and \emptyset are in pragmatic competition $\{ \text{too}, \emptyset \}$, using \emptyset becomes odd, since in this context the presupposition of *too*, which is presuppositionally stronger than \emptyset , is fulfilled.

(17) Hanako went to school.

- a.#Taro did \emptyset .
- b. Taro did, **too**.

Recall now the case of Hurford conditionals, where **BAD** itself is infelicitous but the insertion of the obligatory discourse particle *still* disrupts it. Following Ippolito's (2004) account that the particle *still* is also a presupposition trigger like *too*, we could extend the scope of Maximize Presupposition to *still* by assuming that *still* and \emptyset are in competition $\{ \text{still}, \emptyset \}$. Moreover, given the fact that **GOOD** is a concessive conditional already (cf. (15)), it is reasonable to assume that Hurford conditionals (of the logical form $\lceil \neg p^+, \text{ then } p \rceil$, where p^+ is a sentence which asymmetrically entails p) always require the concessive presupposition; whenever uttering Hurford conditionals, the concessive presupposition should already be satisfied. Then, in the **GOOD** case, an insertion of *still* is not obligatorily required since the form of **GOOD** itself is already a concessive conditional. On the other hand, in the **BAD** case, since the form of **BAD** cannot convey a concessiveness by itself, an insertion of *still* is required by Maximize Presupposition in order to match the concessive context.

(18) (In a concessive context)

- a. If John is not in Tokyo, he is **still** in Japan. (\leftarrow *still* is required by MP)
- b.#If John is not in Tokyo, he is \emptyset in Japan.

The task to conclude which account (namely, the triviality account or the Maximize Presupposition account) is better to explain the contrast between **BAD** and **GOOD** is beyond the scope of the current work and will be left to future work; it is worth noting, however, that at least the Maximize Presupposition account should present more clarification with regard to the semantic/pragmatic status of *still*. Ippolito (2004) treats the concessive meaning of *still* as a presupposition, but I do not see any reason why it is a presupposition; there is a possibility that it is a *conventional implicature* in line with Potts (2007). It is worth demonstrating projection and cancelation tests to prove the concessive meaning of *still* to be a presupposition (cf. Karttunen 1973), because if it is a conventional implicature rather than a presupposition, the Maximize Presupposition account cannot be applied to the current case. Thus, I (tentatively) leave the Maximize Presupposition account as an 'alternative' in this paper.

4. Hurford Conditionals and QuD

An issue that we have not examined yet is about the optionality of the discourse particle *still* observed in the **GOOD** case.

- (19) a. If Shun drinks a beer, he does not drink a Premium Malt's. (**GOOD**)
- b. If Shun drinks a beer, he **still** does not drink a Premium Malt's. (**GOOD** + *still*)

The questions that one might pose are as follows. Why does the particle *still* seem to be optional but not to be required in the **GOOD** case? Is the insertion of *still* really 'optional' rather than 'obligatory' in **GOOD**?

To answer these questions, I make use of the discourse model that focuses on Question under Discussion (QuD, Roberts 1998). QuD is an analytic tool that has recently become more and more popular among linguists as a way to characterize how a sentence fits in its context. The discourse model based on QuD assumes that discourse is driven and structured by (implicit/explicit) QuD that the participants are trying to answer; each sentence in discourse addresses a QuD either by answering it, or by bringing up another question that can help answering that QuD. Basically, questioning happens against the background of a (Stalnakerian) *Common Ground*, a set of propositions that describes ‘what is mutually known’ by discourse participants (Stalnaker 1978). At any point in discourse, a QuD constrains the set of possible answers. Of course, a concessive conditional can also be an answer to a QuD. Focusing on QuD allows us to work from bottom up (what Roberts call *Question Reconstruction*): what is the question that lead to our answer—the concessive conditional? Does the question differ with and without particle *still* in **GOOD**?

Consider the case in (20), where **GOOD** with *still* causes a mismatch and **GOOD** without *still* matches the context.

(20) (A and B are talking on the phone)

A: Is Shun drinking a beer now?

B: Can’t be. I heard he doesn’t want to drink today.

A: But I’m sure he is drinking a beer right now. So he is drinking a beer, isn’t he?

↪ **QuD: Is he drinking a beer?**

B: Well, **if Shun is drinking a beer, he is (# still) not drinking a Premium Malt’s.** (Concessive)

In (20), it is infelicitous if the speaker B utters *still*, which means that the insertion of *still* is not always optional. The key here is that the QuD only concerns ‘whether shun is drinking a beer’ rather than ‘what kind of beer he is drinking.’ Note that two native speakers of English reported that the insertion of *still* in this context is somewhat redundant and infelicitous. They also reported that it feels more like adversative (opposition) than concessive. Thus, the QuD needs to change to match *still*.

In the discourse in (21), where **GOOD** without *still* causes a mismatch and **GOOD** with *still* matches the context. In (21), with *still* added to **GOOD**, the question reconstruction leads to the updated QuD.

(21) (A and B are talking on the phone)

A: Is Shun drinking a beer now?

B: Can’t be. I heard he doesn’t want to drink today.

A: But I’m sure he is drinking a beer right now, and I think it’s a Premium Malt’s. So he is drinking a beer, isn’t he?

↪ **QuD’: Is he drinking a beer?**

★¹ B: **No.** I know the fact that he isn’t drinking a Premium Malt’s.

★² A: OK, then one thing is for sure: he’s drinking a beer. (QuD’: Is he drinking a beer?)

↪ **QuD''** (updated): **Is he drinking a Premium Malt's?**

B: Well, **if Shun is drinking a beer, he is still not drinking a Premium Malt's.** (Concessive)

The QuD is updated (or strengthened) in this discourse; at first, the QuD seems to be “Is he drinking a beer?” (: QuD'), but then it is updated to “Is he drinking a Premium Malt's?” (: QuD'') since the fact that Shun is not drinking a Premium Malt's is explicitly added to the Common Ground by B's utterance marked by ★¹ and A's acceptance marked by ★². This updated QuD matches the concessive *still* because *still* in (21) does not cause any redundancy unlike the one in (20); the meaning conveyed by *still* in this context, namely the unexpectedness that Shun does not drink a Premium Malt's, just matches the context.

In this section, I have argued that the particle *still* is not added to the **GOOD** case with impunity since the QuD differs from one case to the other: while without *still*, a general QuD is required in the discourse (cf. (20)), with *still* a more defined QuD is required (cf. (21)).

6. Conclusion

As far as I know, this would be the first paper that tackles the problem on Hurford conditionals presented by Mandelkern & Romoli (2018). I argued that the contrast found in Hurford Conditionals, **BAD/GOOD**, is explained as follows. **BAD** is a tautology, but the particle *still* can disrupt it by turning it into a concessive conditional. Although **GOOD** is a concessive conditional already, *still* is not optional: a certain QuD should be defined.

As a future work, it would be interesting to see what discourse particles can disrupt a tautology in the **BAD** case. Interestingly, in Japanese, the contrastive marking particle *wa* can increase the acceptability of **BAD** when inserted. One plausible possibility is that *wa* can also take a concessive reading like *still*. Nakanishi & Rullman (2009) argues that the particle *at least* in English takes the concessive reading, and Biezma (2013) argues that the concessive reading of *at least* is generated by scalar implicature. Since *wa* can induce a sort of *at least*-meaning (Hirayama & Brasoveanu 2018), it seems reasonable to assume that *wa* can also take the concessive reading.⁴ However, looking at the data of **BAD** with *wa*, the fact is more complicated: it seems to me that **BAD** with *wa* in (22b) is not completely natural (thus I put '?' on (22b)) although its acceptability is certainly higher than the one without **BAD** in (22a).

- (22) a. #Shun-ga Puremoru-o noma-nai toki, (sono-baai) kare-wa biiru-o nom-u.
S.-NOM PM.-ACC drink-NEG in.the.case.that (in.that.case) he-TOP beer-ACC drink-PRES
'If Shun does not drink a Premium Malt's, he drinks a beer.'
- b. ?Shun-ga Puremoru-o noma-nai toki, (sono-baai) kare-wa biiru-wa_{CT} nom-u.
S.-NOM PM.-ACC drink-NEG in.the.case.that (in.that.case) he-TOP beer-wa drink-PRES
'If Shun does not drink a Premium Malt's, he drinks a beer at least.'

In sum, I have what I think is a fascinating issue. How are the two concessive meanings (conveyed by *still* and *wa*) different from each other? I hope that in the future I will figure out what is going on here.

⁴Precisely, contrastive *wa* has a different meaning from *sukunakutomo* 'at least' in Japanese. See Hirayama & Brasoveanu (2018) for the experimental evidence.

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