ON THE TWO DISCOURSE CONNECTIVES FǑUZÉ AND BŮRÁN IN MANDARIN CHINESE: AN SDRT ACCOUNT*

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ABSTRACT
This paper argues that fǒuzé and būrán have a modal-like semantics and furthermore that their semantics need to be modelled by means of Segmented Discourse Representation Theory, because they involve discourse structure and rhetorical relations. Given a discourse $\pi_1$, fǒuzé/būrán $\pi_2$, where $\pi_1$ and $\pi_2$ are clauses, $\pi_2$ is interpreted given $\neg\pi_1$. These two discourse connectives realize the following discourse effects. First, they introduce $\neg\pi_1$ into the discourse, represented as a Segmented Discourse Representation Structure. Second, $\neg\pi_1$ and $\pi_1$, where the latter is present in the discourse but the former is not, show a contrastive relationship. Third, either that $\pi_2$ is a result of $\neg\pi_1$ or that $\pi_1$ and $\pi_2$ are alternatives, depending on whether it is fǒuzé or būrán and whether $\neg\pi_1$ and $\pi_2$ has a (loose) causal relationship. In addition, a few more details are under discussion, e.g. which clause is negated when $\pi_1$ consists of two clauses, what role the set of propositions where $\neg\pi_1$ is true play when $\pi_1$ is a question or an imperative, how huózhé ‘or’ on the one hand and dānshì/kěshì ‘but’ on the other differ from fǒuzé/būrán. Finally, the differences between these two connectives are presented.

Keywords: fǒuze, buran, discourse connective, SDRT, Chinese

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1. INTRODUCTION

Discourse connectives\(^1\) are lexical items, whose primary function is to connect discourse segments, which are defined in (1), based on Segmented Discourse Representation Theory (for short, SDRT), a theory proposed in Asher and Lascarides (2003):

\[ R(\alpha, \beta) \] is a discourse segment if and only if:
(a) \( \alpha \) and \( \beta \) are two clauses, which are connected by an appropriate rhetorical relation \( R \).
(b) \( \alpha \) is a clause, but \( \beta \) is a discourse segment, or the other way around. \( \alpha \) and \( \beta \) are connected by an appropriate rhetorical relation \( R \).
(c) Both \( \alpha \) and \( \beta \) are discourse segments. \( \alpha \) and \( \beta \) are connected by an appropriate rhetorical relation \( R \).
(d) Nothing else is a discourse segment.

(1) is a recursive definition of discourse segment. The smallest discourse segment is composed of two clauses. Then, a clause and a discourse segment or two discourse segments can be combined to form a new discourse segment.

The primary function of a discourse connective is to connect discourse segments and therefore it has a unique syntactic feature: it does not go with a single clause. 因此 and 但是 are two discourse connectives in Mandarin Chinese (hereafter, Chinese). They have to connect clauses and cannot stand alone with a single clause. See below.

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\(^1\) Please note that a discourse connective does not have to be a conjunction, although a conjunction can function as a discourse connective. In Chinese, the syntactic category of a discourse connective might be an adverb. But, we do not discuss this issue because it does not affect our analysis in any way.
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(2) a. Nǐ ɡānkuǎi huíjiā, fǒuzé/bùrán māmā
   2nd.SG hurry go.home FǑUZÉ/BÜRÁN Mom
   huì dānxīn de.
   EPI worry Prc
   ‘Hurry and go home! Otherwise, Mom will be worried.’

b. #Fǒuzé/bùrán māmā huì dānxīn de.³
   FǑUZÉ/BÜRÁN Mom EPI worry Prc

As shown in (2a), fǒuzé and bùrán connect two clauses: nǐ ɡānkuǎi huíjiā ‘you hurry and go home’, and māmā huì dānxīn de ‘Mom will be worried’. However, in (2b), only one clause is there, i.e. māmā huì dānxīn de ‘Mom will be worried’. As a result, (2b) is at least infelicitous, if grammatical at all.

Fǒuzé and bùrán are interchangeable in some cases, but not in others. In Xiàndài hànyǔ bābǎi cí zēngdìngbān ‘Eight Hundred Words in Modern Chinese: Extended Version’, Lű et al. (1999) define these two lexical items in the following way: fǒuzé = rúguǒ bù zhèyàng ‘if it is not so’; bùrán = (i) rúguǒ bù zhèyàng ‘if it is not so’ or (ii) yǐnjìn yǔ shàng wén jiāoti de qíngkuàng ‘introducing an alternative to the preceding discourse’. Given these two semantic definitions for fǒuzé and bùrán, two generalizations might be reached. First, fǒuzé, bùrán and rúguǒ bù zhèyàng ‘if it is not so’ seem interchangeable. Second, since huòzhē ‘or’ also introduces an alternative, bùrán and huòzhē ‘or’ should be interchangeable. However, the complete picture is not so simple. See the examples below.

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² The abbreviations used in this paper include: 1st.SG for the first-person singular pronoun, 2nd.SG for the second-person singular pronoun, 3rd.SG for the third-person singular pronoun, ASSO for an associative marker, DYN for a dynamic modal, CL for a classifier, EPI for a future epistemic modal, DUR for a durative aspect marker, PRC for a sentence-final particle, Q for a question particle.
³ In this paper, # is used to indicate infelicity.
We should write home. Otherwise, our family will be worried.

I can only quit. Otherwise, what should I do?

You can call him. Otherwise, you can go see him yourself.

(3a) is an example where fǒuzé/bùrán/rúguǒ ‘if not so’ are interchangeable. The sentences in (3) are abstracted as π₁ fǒuzé/bùrán π₂, where π₁ and π₂ are clauses. (3a) presents π₂, which results from that the action π₁ is not carried out. Rúguǒ bù zhèyàng ‘if not so’ is acceptable in this example because this phrase negates π₁ and the negation of π₁ is required for π₂ to be interpreted. In (3b), bùrán is good, but fǒuzé is not. Yet, rúguǒ bù zhèyàng ‘if not so’ is fine in this example. (3b) suggests that fǒuzé and rúguǒ bù zhèyàng ‘if not so’ are not paraphrases. Instead, fǒuzé expresses something that rúguǒ bù zhèyàng ‘if not so’ does not. On the other hand, the examples in (4) show that, while fǒuzé is not good, bùrán is not always interchangeable with huòzhě ‘or’, even though huòzhě ‘or’ also introduces an alternative, which is one of the semantic/pragmatic functions of bùrán defined in Lǚ et al. (1999). The two sets of examples in (3) and (4) suggest that the semantics of fǒuzé and bùrán are not as
In this paper, I argue that the semantics of fǒuzé and bùrán need to be modelled by means of SDRT. Suppose that we have a discourse: \( \pi_1, fǒuzé/bùrán \pi_2 \), where \( \pi_1 \) and \( \pi_2 \) are clauses. These two discourse connectives express that \( \pi_2 \) is interpreted, based on \( \neg \pi_1 \). They perform the following steps to model our understanding of a discourse involving them. First, fǒuzé and bùrán introduce \( \neg \pi_1 \) into the discourse, represented as a Segmented Discourse Representation Structure (SDRS). Second, \( \pi_1 \) is understood to contrast \( \neg \pi_1 \). Third, the discourse connectives indicate either that \( \pi_2 \) is a result of \( \neg \pi_1 \) or that \( \pi_1 \) and \( \pi_2 \) are alternatives, dependent on whether it is fǒuzé or bùrán and whether \( \neg \pi_1 \) and \( \pi_2 \) have a (loose) causal relationship.

In addition, some details are discussed in this paper. First, when \( \pi_1 \) is composed of two clauses, it is always the negation of the first one, on which \( \pi_2 \) depends for semantic interpretation. Second, if \( \pi_2 \) is a declarative clause, its truth is evaluated in the possible worlds where \( \neg \pi_1 \) is true. If \( \pi_2 \) is a question, a set of propositions, which serves as answers to the question, minus the proposition expressed by \( \pi_1 \), is added into the shared knowledge of the participants in a discourse known as a Common Ground (CG). When \( \pi_2 \) is an imperative, the imperative is supplemented into a CG. Third, only when bùrán connects two true alternatives can it be interchangeable with huòzhě ‘or’. Fourth, fǒuzélùrán cannot be replaced by dânshi’kēshí ‘but’ because the former two have two properties that the latter do not have: first, the former indicates that \( \pi_1 \) contrasts \( \neg \pi_1 \), and, second, \( \pi_1 \) and \( \pi_2 \) do not have equal semantic status because \( \pi_1 \) functions as background, whereas \( \pi_2 \) functions as foreground.

This paper also presents two differences for fǒuzé and bùrán. First, fǒuzé indicates only that \( \pi_2 \) is a result of \( \neg \pi_1 \), while bùrán specifies either that \( \pi_2 \) is a result of \( \neg \pi_1 \) or that \( \pi_1 \) and \( \pi_2 \) are alternatives. Second, fǒuzé has an ‘anti-good consequence’, while bùrán does not.

This paper is organized as follows. Section 2 is a critical review of literature on fǒuzé and/or bùrán. In Section 3, these two discourse connectives are scrutinized carefully so that generalizations and SDRT semantics can be provided. Section 4 concludes this paper.
2. LITERATURE REVIEW


In terms of the analysis of the semantics of fǒuzé, these studies can be categorized into four types. The first type suggests that fǒuzé has a contrastive function, e.g. Z. Wang (1995), Zheng (2001), and others. Z. Wang (1995) claims that fǒuzé introduces zhèngfǎn duìzhào de bìngliè guānxì ‘a contrastive coordinating relationship’ between two clauses. Zheng (2001) observes that the clause following fǒuzé is a result of the previous one and that the truth of the previous clause contrasts that of the latter. This “contrast” analysis is on the right track, but overgeneralizes. Kěshì ‘but’, dànshì ‘but’, and so forth, also introduce a relationship of the type as suggested by Z. Wang (1995). Nevertheless, they cannot substitute for fǒuzé in examples such as (3a). In addition, fǒuzé can be used as a threat, but kěshì ‘but’ and dànshì ‘but’ cannot. See the example below.

(5) Ni zuihǎo tīnghuà, fǒuzé/*kěshì/
2nd.SG had.better listen.words FǑUZÉ /*but/
*đạnšį…
*but
‘You’d better do what I say. Otherwise, …’

Interestingly, Y. Wang (2013) observes the same fact as (5) and states that fǒuzé does not describe contrast (zhuānzhé jū) since clauses connected by contrastive conjuctions such as kěshí/dănshí ‘but’ are true, but the ones connected by fǒuzé do not have to be so. While Y. Wang does not discuss how fǒuzé contributes to the interpretation of discourse, he provides an informative observation and a good first step to distinguish fǒuzé on the one hand and kěshí/dănshí on the other.

The second type observes that the clause after fǒuzé is interpreted given the negation of the clause before, e.g. C. Wang (2008), Y. Yang (2009), Cao and Zhang (2009), M. Lû (2010), Zhu (2011), and others. C.
Wang’s (2008) main idea can be summarized as: in a discourse $S_1$, fǒuzé $S_2$, fǒuzé = $\neg S_1$. Basically, this abstract form can be roughly interpreted as $S_2$ gets an interpretation under the circumstances of the negation of $S_1$. Y. Wang (2009) discusses three lexical items: fǎnzhī, xiāngfǎn and fǒuzé. He suggests that fǒuzé leads a clause which expresses a proposition inferred from a negated preceding clause in the same discourse. Cao and Zhang (2009) suggest that, for two clauses to be connected by fǒuzé, the previous one serves as a condition or a reason, whereas the other stands for a reversal inference (nìxiàng tuīdǎo). M. Lû (2010) identifies two roles for bùrán. First, bùrán leads a clause which is inferred from the negation of the preceding one. Second, bùrán leads a clause, functioning as an alternative to the preceding one.

Zhu (2011) examines the construction rúguǒ $A$, nàme $B$, fǒuzé $C$. He reaches conclusions as follows. First, $A$ serves as a premise and $B$ a conclusion. Next, if $B$ is inferred, then $A$ undergoes negation and $C$ results from $\neg A$. Moreover, if $B$ is an imperative, a promissive or a necessity, $B$ undertakes negation and $C$ results from $\neg B$. Then, if $B$ expresses ability or volition, then again $B$ undergoes negation and $C$ is a result of $\neg B$. Last, if $A$ describes a hypothetical purpose and $B$ the means to fulfil the purpose, then $B$ experiences negation and $C$ is a result of $\neg B$.

All of the negation analyses suffer from the same problem. In (3b), gāi zěnme bàn ‘what should I do?’ is interpreted based on if I do not quit, that is, the negation of wǒ zhǐ néng fàngqì ‘I can only quit’. However, fǒuzé is not good here. This example suggests that there is more to fǒuzé than simply the negation of the clause before fǒuzé.

The third type is a dynamic semantic analysis of fǒuzé, e.g. Ju (2010). Ju (2010) proposes a dynamic semantics for fǒuzé. Based on Veltman’s (1996) update semantics, Ju (2010) suggests the following. An information state consists of two stacks, each of which is a set of pairs of possible worlds. Fǒuzé updates one of the two stacks. While Ju (2010) is very enlightening, he fails to take discourse structure into consideration, cf. Asher and Lascarides (2003), Mann and Thompson (1998), Taboada and Mann (2006a, 2006b), and so on. In addition, Ju (2010) does not discuss the modal-like property of fǒuzé (and bùrán), which is elaborated on in the next section.
The last type is a functional perspective on fǒuzé, e.g. Y.-F. Wang, et al. (2014). This paper discusses the pragmatic and interpersonal function of fǒuzé. Because this study approaches fǒuzé in a functional linguistic perspective, it serves as a complement to dynamic semantic studies of fǒuzé and bùrán such as this paper.

While it does not talk about the semantics of fǒuzé, Zhu and Wu (2012a) explore the focused constituent in a discourse with fǒuzé. They claim that the proposition preceding fǒuzé is focused on. Their discussion of focus, jiāodiǎn in Chinese, seems to be very different from Lee and Pan (2001), Rooth (1985,1992), von Stechow (1981,1989,1991), Kadmon (1991: 315-354), and others. See two Chinese examples below.

    3rd.SG only [f read] book  
    ‘He only [f reads] book.’

b. Tā zhǐ kàn [f shū].  
    3rd.SG only read [f book]  
    ‘He only reads [f book].’

Zhǐ ‘only’ is a focus device in Chinese. As we can see from (6), the focused elements, i.e. kàn ‘read’ in (6a) and shū ‘book’ in (6b), are actually to the right of the focus device. But, Zhu and Wu (2012a) claim that the focused element is to the left of fǒuzé. Therefore, it deserves more careful examination on whether fǒuzé has a focus function as discussed in Zhu and Wu (2012a).

There are some studies on fǒuzé which do not talk about its semantics, such as Meng (1996), Jin (2009), Zhu and Wu (2012b), Deng (2012), and Xu (2014). These studies are not reviewed in this section.

To sum up, Lǜ et al. (1999) offer semantic definitions for fǒuzé and bùrán. Fǒuzé expresses ‘if it is not so’, whereas bùrán denotes either ‘if it is not so’ or ‘introducing an alternative to the preceding discourse.’ Expressing ‘if it is not so’, fǒuzé and bùrán do not always substitute for each other. Moreover, fǒuzé and bùrán cannot be substituted for by contrastive conjunctions such as dànsīliǎnghǎi ‘but’, even though the conjunctions express contrast as well. Presenting an alternative, huòzhě ‘or’ and bùrán are interchangeable only under certain circumstances.
These linguistic facts regarding ㄈㄗㄜˇ ㄅㄢˊ are not discussed in the literature reviewed above.

In terms of the semantics of ㄈㄗㄜˇ, it is commonly agreed that, provided a discourse ㄗ₁, ㄈㄗㄜˇ ㄗ₂, where ㄗ₁ and ㄗ₂ are clauses, either ～ㄗ₁ ∧ ㄗ₂ or ㄗ₁ ∧ ～ㄗ₂. In plain English, ㄈㄗㄜˇ presents contrastive information. Nevertheless, as argued above, specifying contrastive information as well, conjunctions such as ㄉㄢˇ ‘but’ are not interchangeable with ㄈㄗㄜˇ. As a result, ㄈㄗㄜˇ must express something more than just contrastive information, whereas contrastive conjunctions denote only contrast.

Given the above shortcomings of the literature reviewed in this section, a careful and detailed examination of ㄈㄗㄜˇ and ㄅㄢˊ is called for.

3. Modal-like Semantics, Discourse Structure and ㄈㄗㄜˇ ㄅㄢˊ

Given the criticisms presented in Section 2, one reasonable question to ask is: exactly what is the semantics of ㄈㄗㄜˇ and ㄅㄢˊ? C. Wang (2008) and Y. Wang (2009) shed some light on this question. C. Wang (2008) suggests that, given a pattern ㄗ₁, ㄈㄗㄜˇ ㄗ₂, ㄈㄗㄜˇ means ～ㄗ₁. If we use the same pattern to extend Y. Wang’s (2009) idea, Y. Wang (2009) basically says that ㄗ₁ is inferred from ～ㄗ₁. To put it in a formal way, given a discourse ㄗ₁, ㄈㄗㄜˇ ㄅㄢˊ ㄗ₂, where ㄗ₁ and ㄗ₂ are clauses, ㄗ₂ is evaluated, provided ～ㄗ₁. But, this formalization does not equal to propositional logic formulae ～ㄗ₁ ∧ ㄗ₂ or ㄗ₁ ∧ ～ㄗ₂, because a disjunction indicates equal (syntactic and/or semantic) status between the two propositions on both sides of the disjunction, while, for ㄈㄗㄜˇ and ㄅㄢˊ, it is more like that ㄗ₁ provides necessary information so that ㄗ₂ can be evaluated. To put it another way, ㄗ₁ is more like background information while ㄗ₂ is foreground. ㄗ₁ and ㄗ₂ do not have equal syntactic and/or semantic status.

John must be working hard for tomorrow’s big test.

One of the readings of (7) is that the speaker makes an inference, based on his/her belief that John will work for a test. This sentence is evaluated in the possible worlds of an epistemic modal base ordered by a doxastic (= reasoning about belief) ordering source. An epistemic modal base is a set of propositions representing the facts in the real world. This set of possible worlds are ordered based on the speaker’s belief. Because must expresses modal necessity, the proposition John must be working hard for tomorrow’s test is evaluated to be true in all the best worlds in the ordered set of possible worlds.

Fǒuzé and bùrán function in a way very similar to the epistemic necessary modal must explained above. Regardless of whether fǒuzé and bùrán are interchangeable or not, a clause led by these two discourse connectives is always evaluated, based on information provided by negating the clause preceding it. (3a) and (4a) are repeated below as (8a, b) for the purpose of illustration.

(8) a. Gāi xiě xìng le, bùrán/fǒuzé should write letter Prc BÚ RÁ N/FǑUZÉ jiālǐ huì bù fàngxīn de. family will not at.peace Prc ‘We should write home. Otherwise, our family will be worried.’
b. Kěyǐ dǎ diànhuà qù zhǎo tā, can make phone.call go find 3rd.SG bùrán/*fǒuzé jiù zìjǐ pǎo yì tàng. BÚ RÁ N/*FǑUZÉ JĪU self run one trip ‘You can call him. Otherwise, you can go see him yourself.’

In (8a), both fǒuzé and bùrán are fine. The proposition jiālǐ huì bù fàngxīn de ‘our family will be worried’ is interpreted, given the negation of the preceding clause, i.e. not write home. In (8b), bùrán is fine but fǒuzé is not. Yet, the proposition zìjǐ pǎo yì tàng ‘go see him yourself’ is still evaluated, given the negation of the previous clause, that is, not call him.
Just like an epistemic modal base is required to evaluate a proposition presented by an epistemic modal, the information provided by negating a preceding clause in examples involving fǒuzé and bùrán is required to interpret a latter clause. This is one reason why fǒuzé and bùrán are argued to have a modal-like semantics.

Another reason that supports a modal-like semantics for fǒuzé and bùrán is that a proposition they present cannot be determined to be true or false in the real world, cf. Y. Wang (2013). For a simple declarative clause, such as tā dǎ diànhuà huí jiā ‘3rd.SG make phone.call back home’, it is interpreted in the real world. But, as argued above, a proposition presented by a modal is evaluated in a modal base ordered by an ordering source, and one presented by fǒuzébùrán is interpreted in the worlds where the negation of the previous proposition is true. This is why the real world cannot determine the truth of a proposition presented by fǒuzébùrán and by modals.

Nevertheless, although fǒuzébùrán and modals share two semantic behaviours as discussed above, I would like to point out that fǒuzébùrán are not modals, based on two critical differences. First, fǒuzébùrán have an effect on the discourse-level interpretation, whereas modals have an effect on the sentence-level one. As shown in (2b), standing alone without a previous clause, fǒuzébùrán plus a clause is at least infelicitous, if syntactically well-formed at all, while (7) is fine, standing alone. In addition, this is also one of the reasons why a Kratzer-style semantics of modality does not work for fǒuzé and bùrán: a modal base and an ordering source for a modal do not have to be explicitly realized in the discourse. Moreover, an ordering source is required because of graded modality, e.g. Kratzer (1991, 2012[1981]). However, fǒuzé and bùrán do not involve any degree at all.

The second difference between fǒuzébùrán and modals lies in that modality has various semantic types, e.g. epistemic, deontic, dynamic, among others, whereas fǒuzébùrán do not. As we can see from the previous examples, fǒuzébùrán can present an inference, such as (3a), a suggestion (or order), such as (4a), etc.

Based on these two differences, fǒuzébùrán are argued to have a modal-like semantics in the sense that fǒuzébùrán rely on extra information, along a similar line to that a modal relies on a modal base for
interpretation. But, the extra information required must be explicitly present in the discourse so that a proposition led by fǒuzébùrán can be interpreted. Yet, fǒuzébùrán do not express modality because of the two significant properties presented above.

Given the above discussion, I propose a modal-like semantics for fǒuzé and bùrán as follows. Suppose a discourse π₁, fǒuzébùrán π₂, where π₁ and π₂ are labels for clauses, according to SDRT conventions. Then, the truth of [fǒuzébùrán π₁] can be defined as (9):

\[(9) \quad [fǒuzébùrán(π₁, π₂)] = 1 \text{ if and only if } \forall w \in W, w \in \neg \pi₁ \rightarrow w \in \pi₂.\]

Please note that, while (9) seems to be a simplified version of Kratzer-style semantics for modality or like traditional modal logic, cf. Porter (2009, Chapter Two), yet there are two major differences. First, in the semantics above, π₁, whose information fǒuzébùrán depend on is explicitly present in the discourse because it is one of the clauses connected by these two discourse connectives. Second, a proposition presented by fǒuzé and bùrán is interpreted in the worlds where a former proposition is not true, whereas modals do not behave in this manner.

A reviewer suggests a possibility that fǒuzébùrán involves grammaticalization and that they are related to a truncated conditional if it is not the case that. As far as I am concerned, this suggestion is on the right track, at least, for bùrán. This discourse connective is composed of bù, a negator, and rán, which means to remain in a previous state and can be translated as so or as such in English. Hence, bùrán can be understood as a conditional if it is not the case that. As for fǒuzé, fòu is also a negator, as in fóuding ‘negative’. Zé is more difficult to decipher. But, regardless, this anonymous reviewer’s suggestion is compatible with the analysis proposed in this paper.

However, (9) is not sufficient because the discourse relations encoded by fǒuzébùrán are not represented. Y. Wang (2009), Z. Wang (1995), and others suggest that fǒuzé involves contrast. Nevertheless, it is clear that, given π₁, fǒuzébùrán π₂, π₁ does not contrast π₂. Rather, π₁ contrasts what π₂ relies on, i.e. \(\neg \pi₁\).
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In addition, \( \pi_1 \) and \( \pi_2 \) show other relations. Let’s look at (8) again. In (8a), both fǒuzé and bùrán are fine, whereas in (8b) only bùrán is acceptable. If we examine the clauses connected by fǒuzé and bùrán in (8a, b), we can find that in (8a) the latter clause describes a situation resulting from the situation expressed by negating the former clause, while in (8b) the two clauses are alternatives, one of which the speaker recommends the addressee adopt. In (8a), the family will be worried is a result of not writing home. On the other hand, in (8b), dǎ diànhuà qù zhǎo tā ‘call him’ and zìjǐ pǎo yì tàng ‘go find him yourself’ are two options available for an addressee to choose, according to the speaker.

SDRT is required to model the discourse relations revealed by fǒuzé/bùrán. I propose the following. First, fǒuzé/bùrán introduce \( \neg \pi_1 \) into an SDRS. \( \neg \pi_1 \) is not one of the clauses in the discourse, but is introduced because it provides information required by the clause presented by fǒuzé/bùrán. Second, \( \neg \pi_1 \) and \( \pi_1 \) are connected by rhetorical relation Contrast. Third, either that \( \neg \pi_1 \) is attached to \( \pi_2 \) by rhetorical relation Result or that \( \pi_1 \) and \( \pi_2 \) are connected by Alternative, depending on whether \( \neg \pi_1 \) and \( \pi_2 \) have a CAUSE\(_D\) relationship (Asher and Lascarides 2003: 204-207) and whether it is fǒuzé or bùrán in the discourse.

Asher and Lascarides (ibid) state that “[…] CAUSE\(_D\) (\( \sigma, \alpha, \beta \)) (“Discourse Permissible Cause”), which means that the content of the discourse \( \sigma \) (where \( \sigma \) outscopes both \( \alpha \) and \( \beta \)) provides evidence that \( \alpha \) caused \( \beta \).” This CAUSE\(_D\) relation is a “loose’ causal relation because \( \alpha \) does not have to actually bring about \( \beta \). Rather, as long as there is evidence for this causal relation, it is sufficient to induce Result(\( \alpha, \beta \)) or Explanation(\( \beta, \alpha \)), both of which depend on a CAUSE\(_D\) relationship to be specified.

Here, some illustrations for these two rhetorical relations Result and Explanation are called for. \( \alpha \) and \( \beta \) are clauses and are described in this order in the discourse. Result(\( \alpha, \beta \)) means that \( \beta \) is a result of \( \alpha \), while Explanation(\( \beta, \alpha \)) means that \( \beta \) explains \( \alpha \). For both rhetorical relations, \( \alpha \) and \( \beta \) have a loose clausal relationship as described above. The difference is the order of the cause and the result presented in the discourse. Let’s look at a pair of examples below.
(10)  a. John fell.
    b. Mary pushed him.

= Ex. 6, Asher and Lascarides (2003: 6)

    b. He fell.

In both (10) and (11), *Mary pushed John* is the cause and *John fell* is the result. When the result is presented before the cause, as in (10), (10b) explains why (10a) takes place, i.e. *Explanation*(10b, 10a). On the other hand, when the cause is presented before the result, as in (11), a natural causal relationship is described, i.e. *Result*(10a, 10b).

Based on the discussion above, I demonstrate the steps of SDRS construction for $\pi_1, fōuzē/būrán$ $\pi_2$ below:

(12)  a. $\pi_1$ comes into the discourse, and an SDRS is created. At this stage, only one clause, i.e. $\pi_1$, exists in the SDRS.

b. $\pi_1$:

```
  \pi_1:
```

c. $Fōuzē/būrán$ $\pi_2$ comes into the discourse. $\neg\pi_1$ is introduced into the discourse by these two connectives. There are three unresolved rhetorical relations, represented by question marks: between $\neg\pi_1$ and $\pi_1$, between $\neg\pi_1$ and $\pi_2$ and between $\pi_1$ and $\pi_2$. Only one of the latter two can be formed in the SDRS.

d. $\pi_1$:
    $\pi_2$:
    $\neg\pi_1$:

```
(?(\pi_1, \neg\pi_1)

(?(-\pi_1, \pi_2) \lor ?(\pi_1, \pi_2)
```
e. Fǒuzé/bùrán resolve the rhetorical relation connecting \( \pi_1 \) to \( \neg \pi_1 \) to \textit{Contrast}, and indicate either that \textit{Result} attaches \( \pi_2 \) to \( \neg \pi_1 \) or that \textit{Alternative} connects \( \pi_1 \) and \( \pi_2 \), depending on whether \( \neg \pi_1 \) and \( \pi_2 \) have a \textsc{Cause} relationship and on the constraint stated in (12g).

f. Constraint on \textit{fǒuzé}:

\[
\begin{align*}
\pi_1 : \\
\pi_2 : \\
\neg \pi_1 : \\
\text{Contrast}(\pi_1, \neg \pi_1) \\
\text{Result}(\neg \pi_1, \pi_2) \lor \text{Alternative}(\pi_1, \pi_2)
\end{align*}
\]

In (12f), \textit{Contrast}(\( \pi_1 \), \( \neg \pi_1 \)) indicates that \( \pi_1 \) and \( \neg \pi_1 \) contrast with each other. \textit{Alternative}(\( \pi_1 \), \( \pi_2 \)) says that \( \pi_1 \) and \( \pi_2 \) are two alternatives, just like what a disjunction does in a discourse. The constraint in (12g) says that, if \textit{fǒuzé} connects two clauses \( \pi_1 \) and \( \pi_2 \), which are presented in this order in the discourse, then the rhetorical relation must be \textit{Result}. To put it another way, it must be the case that \( \pi_2 \) is the result of \( \pi_1 \).

Here in an interim summary, I argue for a modal-like and SDRT semantics for \textit{fǒuzé} and \textit{bùrán}. First, for the (mini-)discourse \( \pi_1 \), \textit{fǒuzébùrán} \( \pi_2 \), \textit{fǒuzébùrán} specifies that \( \pi_2 \) is evaluated in the worlds where \( \pi_1 \) is not true, i.e. the negation of \( \pi_1 \) is true. Second, these two discourse connectives introduce \( \neg \pi_1 \) into the SDRS for the (mini-) discourse. Third, they specify that \textit{Contrast} connects \( \neg \pi_1 \) to \( \pi_1 \). Fourth, they specify either that \textit{Result} attaches \( \pi_2 \) to \( \neg \pi_1 \) or that \textit{Alternative} connects \( \pi_1 \) and \( \pi_2 \), depending on whether it is \textit{fǒuzé} or \textit{bùrán} and whether \( \neg \pi_1 \) and \( \pi_2 \) have a \textsc{Cause} relationship.

Now is a good time to respond to a reviewer’s overall question. This reviewer states that “[t]he result relation is more similar to the modal meaning of \textit{fǒuzébùrán},” and asks, “[h]ow does the clause preceding \textit{fǒuzébùrán}, whose negation leads to the modified clause, present an alternative to the modified clause?”
My response is as follows. Result(¬π₁, π₂) indicates that if ¬π₁, then π₂, i.e. ¬π₁ → π₂. This conditional is equal to the disjunction π₁ ∨ π₂, along the same line where p → q equals ¬p ∨ q. Both the conditional and the disjunction say that these two formulae are true unless both π₁ and π₂ are false. Alternative(π₁, π₂) is actually an exclusive or, i.e. π₁ ∨ π₂, in the sense that either π₁ or π₂ can be true, but π₁ and π₂ cannot be true at the same time. In terms of propositional logic, Alternative(π₁, π₂) can be considered as a stricter version of Result(¬π₁, π₂) and therefore these two proposed rhetorical relations for fǒuzé/bùrán are, as a matter of fact, related.

While the modal-like semantics in (9) and the SDRT-based one in (12), together can account for the similarities and differences in the behaviour of fǒuzé and bùrán, there are two complications. First, π₁ and π₂ themselves can be a (mini-)discourse, composed of two or more clauses. Under this circumstance, which clause is negated when we say ¬π₁? Second, π₂ does not have to be a declarative clause. Rather, π₂ can be a question or an imperative. So, exactly how is an imperative or question evaluated, provided ¬π₁, since they do not have a truth condition?

Three types of examples of multi-clause π₁ are found in the online version of Sinica Corpus 4.0. The three types of examples are presented and analysed below.

(13) a. Dòngzuò dòngcí bìxū dáiyǒu “de”,
    action verb must carry ASSO
cái kěyǐ xiūshì lìng yī-ge dòngcí,
    so that DYM modify another one-CL verb
fǒuzé/bùrán shìwéi liándòngjù.
    RÔUZÉ/BURAN treat.as serial.verb.construction
‘An action verb can modify another verb only when it carries de. Otherwise, the (verb plus verb) construction is treated as
    a serial verb construction.’
b. jiāquán zhǐshù-de zǒngghé wéi fù weighted sum be minus
èr huò fù sān shí, jiànyì shìyòng two or three time suggest use
fānwéi nèi jiào dī-de shùzhí, range in relative value
fǒuzé/bùrán xuǎnyòng zhōngjiānzhi.
FǑUZÉ/BŮRÁN choose medium
‘If the sum of weighted indexes is minus two or minus three,
it is suggested to use the lower value in the range. Otherwise,
choose the medium.’

c. Fǎguī shìfǒu kǎolǜ zhōuquán? Rúguǒ
law whether consider thorough if
zhōuquán jiù bixū chēdǐ zhǐxíng,
thorough JIŮ must complete execute
fǒuzé/bûrân gāi fā bixū jiàyí
FǑUZÉ/BŮRÁN that law must take
jiǎnshì.
examine
‘Is the law thorough? If it is, then it must be executed
completely. Otherwise, the law must be examined (again).’

As we can see from (13), there are at least two clauses preceding
fǒuzé/bûrân. Let’s examine these examples carefully. First, (13a) is
labelled as follows:

(14) a. [π₁ [π₁₁ dōngzuò dōngcí bixū dài yóu “de” ‘a verb must
take de’]
[π₁₂ cái kěyì xiūshí líng yí-ge dōngcí ‘so that it can
modify another verb’]]
b. fǒuzé/bûrân [π₂ shìwéi liándòngjù ‘the (verb plus verb)
construction is treated as a serial verb
construction’]

(14a) shows that π₁ consists of two clauses, labelled as π₁₁ and π₁₂. π₁₁
and π₁₂ are connected by Result because there is a CAUSE₀ relationship
between these two clauses. It is the negation of \( \pi_{11} \) on which \( \pi_2 \) depends on, because a verb plus verb construction is regarded as a serial verb construction, if the first verb does not take de with it. Moreover, it is not possible to negate \( \pi_{12} \) for \( \pi_2 \) because a verb plus verb construction with the first verb taking de cannot be treated as a serial verb construction. We formalize this observation as (15).

\[
(15) \quad \text{Result}(\pi_{11}, \pi_{12}) \Rightarrow \neg \pi_{11}
\]

(14b) and (14c) are labelled the same way and presented in (16) and (17), respectively.

\[
(16) \quad \begin{align*}
a. & \ [\pi_1 [\pi_{11} \text{ jiāquán zhīshù-de zōnghè wèi fū èr húò fū sān shí} \\
& \quad \text{when the sum of the weighted indexes is minus two or minus three }] \\
& \quad \pi_{12} \text{ jiànyì shǐyòng fānwéi nèi jiǎo dī-de shùzhí} \text{ ‘it is suggested to use the lower value in the range’} \\
b. & \ [\pi_2 \text{ fǒuzé/bùrán xuǎnyòng zhōngjiānzhí ‘choose the medium’}]
\end{align*}
\]

\[
(17) \quad \begin{align*}
a. & \ [\pi_1 [\pi_{11} \text{ Rúguó zhōuquán ‘if thorough’}] \\
& \quad \pi_{12} \text{ bìxū chèdǐ zhíxíng ‘it must be executed completely’} \\
b. & \ [\pi_2 \text{ fǒuzé/bùrán gāi fǎ bìxū jiāyǐ jiǎnshì ‘that law must be examined (again)’}]
\end{align*}
\]

\( \pi_{11} \) and \( \pi_{12} \) in (16a) are connected by Background because \( \pi_{11} \) provides a temporal frame for \( \pi_{12} \) to hold. It is the negation of \( \pi_{11} \), on which \( \pi_2 \) relies on, because the time to choose the medium is when the sum of weighted indexes is not minus two or minus three. This observation is formalized in (18). On the other hand, \( \pi_{11} \) and \( \pi_{12} \) in (17a) are connected by Consequence because of the cue phrase rúguó ‘if’. It is the negation of \( \pi_{11} \), which \( \pi_2 \) requires in order to receive an appropriate interpretation. This observation is formalized as (19).

\[
(18) \quad \text{Background}(\pi_{12}, \pi_{11}) \Rightarrow \neg \pi_{11}
\]

\[
(19) \quad \text{Consequence}(\pi_{11}, \pi_{12}) \Rightarrow \neg \pi_{11}
\]
Explanations for *Background* and *Consequence* are called for at this point. *Background* indicates that a proposition functions as a temporal background for another proposition. *Background*(\(\pi_{12}, \pi_{11}\)) says that the background of \(\pi_{12}\) is \(\pi_{11}\), even though \(\pi_{11}\) and \(\pi_{12}\) are presented in this order. *Consequence* is actually an SDRT way to describe a conditional. *Consequence*(\(\pi_{11}, \pi_{12}\)) refers to a conditional if \(\pi_{11}, \pi_{12}\).

The above discussion of the three types of \(\pi_1\) composed of two clauses shows that it is the negation of the first clause, labelled as \(\pi_{11}\), which \(\pi_2\) requires semantic interpretation. This observation, as a matter of fact, follows from the CAUSE\(_D\) relationship between \(\neg \pi_1\) and \(\pi_2\) as discussed above. When \(\pi_1\) is composed of two clauses, these clauses usually have some type of CAUSE\(_D\) relationship. Therefore, it is always the negation of the cause, rather than the result, on which \(\pi_2\) depends for semantic evaluation.

Although not involving multiple clauses, one type of example involving negation worth discussion is \(\pi_1\) with a modal. Obviously, it is the clause that the modal presents, rather than the whole clause, which is negated. Let’s see the example below.

\[
\text{(20) a. } Gāi \text{ xiě xìng le, bùrán/bōuzé should write letter Prc BùRán/Fǒuzé jiālǐ huì bù fāngxīn de. family will not at.peace Prc ‘We should write home. Otherwise, our family will be worried.’}
\]

\[
\text{b. } [\pi_1 \text{ should(\(\pi_{11} \text{ write home}\))}] [BùRán/Fǒuzé [\pi_2 \text{ our family will be worried}]]
\]

(20a) is repeated from (3a). (20a) includes a modal *gāi* ‘should’. \(\pi_2\) relies on the negation of the clause taken by the modal, instead of the whole clause. This is because a discourse containing *fǒuzé/bùrán* functions like a suggestion. If the previous clause contains a modal, this clause expresses suggestion, obligation, stipulation, or some type modality. The latter clause requires the negation of the previous clause, but it is not the modality that is negated. Rather, it is the proposition presented by the modal that is negated. To put it another way, it is not *gāi* ‘should’ that is
negated. If it were, π₂ would depend on the information expressed by someone should not do something. But, in fact, it is someone does not do something that π₂ relies on.

The second complication is that π₂ can be a question or an imperative. What does it mean to evaluate a question or an imperative, since they do not have a truth value? To ask this question in another way, while the truth of π₂ representing a declarative clause is determined in the set of possible worlds where ¬π₁ is true, what role does the set of worlds play for a question or an imperative? Two examples are presented below.

(21) a. Wǒ zhǐ néng fàngqì. Bùrán/*fǒuzé, 1SG-only can quit BÜRÂN/FOUZÉ gǎi zěnme bàn? should how do ‘I can only quit. Otherwise, what should I do?’

b. Wàimiàn zài xiàyǔ. Bùrán/*fǒuzé, kàn outside PRG rain BÜRÂN/FOUZÉ look yì-xià wàimiàn. one-CL外面 ‘It is raining outside. Otherwise, take a look outside.’

The semantics of question is usually considered as a set of propositions, which essentially functions as (possible) answers to the question, e.g. Farkas and Bruce (2009), Groenendijk and Stokhof (1981, 1984, 1997), Hamblin (1973), Karttunen (1977), Krifka (2001, 2007, 2015), among others. It is beyond the scope of this paper to give a detailed discussion on the semantics of question. If we accept the set of propositions for semantics of question, then we get the following interaction between ¬π₁ and the question in examples such as (21a): suppose S is the set of propositions for gǎi zěnme bàn ‘what should I do?’, then the effect of uttering (21a) is S − {p₁}, that is, uttering (21a) removes the proposition represented by π₁ from the set of propositions S, which serves as answers as questions.

4 Please note that Farkas and Bruce (2009) and Krifka (2001, 2007, 2015) propose dynamic semantics for question. However, essentially, they still rely on the set of propositions semantics of questions, as named in Groenendijk and Stokhof (1997), which are added to a Common Ground or Information State.
to the question what should I do. This idea can be modelled by the following SDRS, given \( \pi_1, \text{bùrán} \pi_2 \):

\[
\begin{align*}
\pi_1 \\
\neg \pi_1 \\
\pi_2: \{p_1, p_2, \ldots \} - \{p_{\pi_1}\} \\
\text{Contrast}(\pi_1, \neg \pi_1) \\
\text{Alternative}(\pi_1, \pi_2)
\end{align*}
\]

In the SDRS (22), \( \pi_2 \) is a question, whose Hamblin-style semantics is a set of propositions functioning as answers to the question. However, given that bùrán requires that \( \pi_2 \) is interpreted according to \( \neg \pi_1 \), the proposition expressed by \( \pi_1 \), represented as \( p_{\pi_1} \), cannot be one of the propositions in the semantics of the question. Therefore, a set difference is performed to remove \( p_{\pi_1} \) from the set of propositions denoted by \( \pi_2 \).

That is to say, (9) does not apply here because (9) works only when \( \pi_2 \) is a declarative clause. Instead, since \( \pi_2 \) is a question in examples such as (21a), its semantics is a Hamblin-style semantics of question and bùrán performs a set difference to exclude \( p_{\pi_1} \) from this set.

Here, I would like to respond to a reviewer’s comments concerning (21). A reviewer suggests that (21a) can be interpreted as “if it is not the case that I give up, what else can I do?” This suggestion converges with my proposal in this paper, i.e. given \( \pi_1, \text{fōuzébùrán} \pi_2 \), \( \pi_2 \) is interpreted under the circumstances of \( \neg \pi_1 \). The same reviewer raises a question: regarding (21b), could it be that bùrán behaves like a rhetorical question, like English why not? In terms of effects on the interpretation of discourse, it is certainly true that rhetorical questions such as English why not and bùrán in examples such as (21b) have similar effects. Nevertheless, in terms of forms, a rhetorical question has the form of a question, while the proposition after bùrán has the form of a declarative sentence.

Let’s turn to examples where \( \pi_2 \) is an imperative. Portner (2004, 2007) proposes that the semantics of imperatives is an addressee’s To-Do List,
which is part of an ordering source. The ordering source orders a set of possible worlds. A (modal) proposition is evaluated in the best worlds where the To-Do List is included and this is how the To-Do List affects the truth of the proposition. Moreover, Portner (2007: 373) proposes the pragmatic function of imperatives. With all of the formalisms set aside, Portner (ibid) essentially suggests that an imperative \( \phi_{mp} \) is added into a Common Ground, which functions as shared knowledge for the participants of a discourse. Since a declarative sentence is also added into a Common Ground, an SDRS for examples where \( \pi_2 \) is an imperative just like (12f).

If we look at (21b) again, one might ask why it is raining outside and take a look outside are alternatives. I argue that these two propositions are alternatives in the following sense. In this discourse, the speaker reports that it is raining outside and says that, if the addressee does not believe his report, he/she is instructed to look outside. So, either it is raining outside or take a look outside is added into a Common Ground. If the former is added into the Common Ground, then it is raining outside becomes part of the knowledge shared by the speaker and the addressee. That is, the addressee accepts the speaker’s statement about it being raining outside. If the latter is supplemented into the Common Ground, then the imperative take a look outside becomes part of the shared knowledge. In this case, the addressee is instructed to perform this directive, since an imperative is directed toward an addressee, as argued in Portner (2004, 2007).

Here, I would like to address reviewers’ concerns regarding the example with an imperative, i.e. (21b). A reviewer asks what kind of alternative contrasting relationship between \( \pi_1 \) and \( \pi_2 \), when \( \pi_2 \) is an imperative.

My response is as follows. In my proposal, the contrast relation always exists between \( \pi_1 \) and \( \neg \pi_1 \), as represented in (12f). Between \( \pi_1 \) and \( \pi_2 \) can be either Result or Alternative, shown in (12f) as well. Moreover, because the discourse connective is bùrán and there is no causal relationship between \( \pi_1 \) and \( \pi_2 \), Alternative is identified for (21b).

Concerning the same example, the other reviewer asks whether \( \pi_1 \) and \( \pi_2 \) are simply alternatives to be added into the CG at the same time. The

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\(^5\) Please refer to Portner (2016) for a thorough review of approaches to the semantics of imperatives.
reviewer suggests only one of $\pi_1$ and $\pi_2$ is added to the CG because “$\pi_2$ becomes part of the To-Do List only if the addressee does not believe $\pi_1$."

My response to this reviewer’s comment is like this. The alternative $\pi_1 \lor \pi_2$ needs to be added to the CG at the same time because an addressee needs this alternative so that he/she can choose one of them. When (21b) is uttered, the alternative $\pi_1 \lor \pi_2$ is added into the CG. An addressee has two options. First, he/she can choose to accept $\pi_1$, and then $\pi_2$ is removed from the CG because $\pi_2$ is redundant in this case, or he/she can choose not to accept $\pi_1$ and hence perform $\pi_2$. In the latter case, $\pi_1$ is removed from the CG because it is not accepted by the addressee.

Finally, fǒuzé has an “anti-good consequence” property, but bùrán does not. This property indicates that fǒuzé does not present a good consequence (good for the speaker) into the discourse. This is why fǒuzé is strongly preferred to bùrán, if bùrán is allowed at all, when used as a threat.6 For example,

\begin{quote}
(23) Zuìhǎo zhào wǒ shuō-de zuò, had.better as 1st.SG say-ASSO do fǒuzé/??bùrán…..
FǑUZÉ/??B.URAN…
‘You’d better do what I say. Otherwise…..’
\end{quote}

Examples where bùrán is good but fǒuzé is not, appear to all involve a good consequence (good for the speaker). See one below.

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6 The native speakers I consult basically agree with me on this generalization. Some suggest that bùrán expresses a much lower degree of ‘anti-good consequence’, if possible at all.
In (24), fǒuzé is not good. This is because *behave a little bit* is a good result, which the speaker expects. When the result is good, fǒuzé cannot be used, because of its ‘anti-good consequence’ property.

Another very interesting example that bears out the anti-good consequence analysis of fǒuzé is the one below. In (25), fǒuzé introduces a neutral (at best) result and as a result both fǒuzé and bùrán are fine.

(25) Tā zài xǐzǎo ba. Fǒuzé/bùrán, 3rd.SG PRG take.a.bath Prc FǑUZÉ/BŪRÁN yǔshī-de dēng bù huì liàng-zhe, chuānghū bathroom-ASSO light not EPI on-DUR window yě bù hui yǒu shuǐqì,7 also not EPI have moisture ‘He must be taking a shower. Otherwise, the light in the bathroom would not be on and the windows would not be moist, as well.’

(25) is interesting in the sense that, to continue this discourse, a continuation expressing a bad result prefers fǒuzé over bùrán. The potential continuation to (25) lends support to our ‘anti-good consequence’ distinction between fǒuzé and bùrán.

The anti-good consequence property of fǒuzé can be captured as a meaning postulate. Recall that fǒuzé has another meaning postulate that

---

7 A reviewer indicates a different intuition concerning this example. While my informants and I share the intuition reported in this paper, the reviewer’s intuition might suggest a more fine-grained analysis for fǒuzé could be necessary.
identifies Result as the rhetorical relation that connects two clauses, as (12g), which is repeated below for the sake of completeness.

(26) a. Anti-good consequence of fǒuzé
    \[ fǒuzé(\pi_1, \pi_2) \rightarrow \text{bad}(\pi_2) \]

b. Constraint on fǒuzé:
    \[ fǒuzé(\pi_1, \pi_2) \rightarrow \text{Result}(\pi_1, \pi_2) \]

Before summarizing this section, I would like to address two more issues. First, why can’t huòzhē ‘or’ always substitute for bùrán since the former is a disjunction, which presents an alternative as well? Second, why can’t dànshí/kēshì ‘but’ replace fǒuzé/bùrán, if they both denote contrast?

To answer the first question, relevant examples are repeated below for the sake of illustration. The three examples below show that sometimes huòzhē ‘or’ and bùrán are interchangeable while other times they are not.

(27) a. Kěyǐ dǎ diànhuà qù zhǎo tā, can make phone.call go find 3rd.SG
    bùrán/huòzhē jiù zījǐ pǎo yì tàng. BÜRÂN/or JIU self un one trip
    ‘You can call him. Otherwise, you can go see him yourself.’

b. Wǒ zhǐ néng fāngqǐ. Bùrán/*huòzhē,
    1st.SG only can quit BÜRÂN/*or
gāi zěnme bànr? should how do
    ‘I can only quit. Otherwise, what should I do?’

c. Wàimiàn zài xiàyǔ. Bùrán/*huòzhē, kàn outside PRG rain BÜRÂN/ *or look
    yī-xià wàimiàn. one-CL outside
    ‘It is raining outside. Otherwise, take a look outside.’

The three examples in (27) allow only bùrán, but not fǒuzé, and this fact means that bùrán indicates Alternative in these three examples. But, only in (27a), huòzhē ‘or’ is fine, but not in the others. Why is this so? If
we examine these three examples more carefully, we can find that only (27a) expresses true alternatives, but (27b) and (27c) do not. In (27a), the two clauses on both sides of bùrán are actual suggestions for an addressee. The addressee can choose to perform either one of these two suggestions. However, it is not the case in (27b) and (27c). In (27b), the clause to the left of bùrán is, as a matter of fact, the only option. (27c), as explained above, presents alternatives of the following sense for the addressee: either accept the fact that it is raining outside or take a look outside. The clause to the left of bùrán is not a suggestion. Instead, it is a proposition, which the addressee can choose to believe or not. As we can see from the three examples in (27), huòzhé ‘or’ and bùrán are interchangeable only when they present true alternatives, as in (27a). Under the other circumstances, huòzhé ‘or’ and bùrán are not interchangeable.\(^8\)

The answer to the second question is that, as shown above, for fǒuzé/bùrán, \(\pi_1\) does not contrast \(\pi_2\); instead, \(\pi_1\) contrasts \(\neg\pi_1\). In addition, as stated above, \(\pi_1\) and \(\pi_2\) do not have equal semantic status. Rather, \(\pi_2\) is more like a foreground while \(\neg\pi_1\) serves as background. These two properties are what disjunctions such as dànsìhkēshi ‘but’ do not share and, therefore, the disjunctions and the two discourse connectives under discussion here cannot substitute for each other.

In sum, in this section, I argue for an SDRT account for fǒuzé and bùrán. Given a discourse \(\pi_1, fǒuzé/bùrán \pi_2\), where \(\pi_1\) and \(\pi_2\) are clauses, these two discourse connectives perform the following actions. First, they introduce \(\neg\pi_1\) into an SDRS. Second, Contrast is specified to attach \(\neg\pi_1\) to \(\pi_1\). Third, dependent on whether it is fǒuzé or bùrán and whether \(\pi_1\) and \(\pi_2\) have a CAUSE\(_D\) relationship, either Result attaches \(\pi_2\) to \(\neg\pi_1\) or Alternative connects \(\pi_1\) and \(\pi_2\). It is also demonstrated that, if \(\pi_1\) consists of two clauses, it is always the first one that is negated, on which \(\pi_2\) relies on. I also illustrate the semantic function that \(\pi_1\) plays when \(\pi_2\) is a question or an imperative, instead of a declarative clause. I also argue that fǒuzé has an ‘anti-good consequence’ property. Moreover, only when true alternatives are presented can bùrán and huòzhé be interchangeable.

\(^8\) A reviewer raises a question concerning the above point. He/she asks, “How does the idea bùrán not only introduce an alternative but also the negation of the conditional-like clause solve the puzzle that it sometimes can be replaced with huòshì and sometimes cannot […]?” This question is answered here.
Finally, ę́únzé́bùrán cannot be substituted for by contrastive conjunctions dánshí/kěshí ‘but’ because of the two discourse connectives have semantic/pragmatic properties that the contrastive conjunctions do not possess.

In addition, the discussion also suggests that ę́únzé and bùrán are different in two aspects. First, ę́únzé only allows for rhetorical relation Result to connect $\neg \pi_1$ and $\pi_2$, whereas bùrán permits either Result or Alternative for $\neg \pi_1$ and $\pi_2$ on the one hand and $\pi_1$ and $\pi_2$ on the other. Second, ę́únzé has an ‘anti-good consequence’ property, but bùrán does not.

4. CONCLUSION

In this paper, I examine two discourse connectives ę́únzé and bùrán in Chinese, and argue for a modal-like and SDRT semantics for them. Suppose a discourse $\pi_1$, ę́únzé́bùrán $\pi_2$, where $\pi_1$ and $\pi_2$ are clauses. These two discourse connectives have a modal-like semantics because $\pi_2$ is interpreted based on $\neg \pi_1$. However, they do not express modality.

Furthermore, I propose that ę́únzé́bùrán perform the following steps, in order to model their behaviour in discourse. First, they introduce $\neg \pi_1$ into an SDRS. Second, rhetorical relation Contrast is specified to attach $\neg \pi_1$ to $\pi_1$. Third, either Result connects $\neg \pi_1$ and $\pi_2$ or Alternative attaches $\pi_1$ to $\pi_2$, dependent on whether it is ę́únzé or bùrán and whether $\neg \pi_1$ and $\pi_2$ has a CAUSE$_D$ relationship. Fourth, ę́únzé indicates that $\pi_1$ and $\pi_2$ are connected only by Result.

In addition to the general semantics for ę́únzé́bùrán, four more details are discussed. First, when $\pi_1$ consists of two clauses, it is always the first clause, which is negated, on which $\pi_2$ depends for semantic interpretation. Second, when $\pi_2$ is a question, the set of propositions, which serves as (possible) answers to the question, minus the proposition represented by $\pi_1$ is added into a Common Ground. If $\pi_2$ is an imperative, the property represented by the imperative is added into a Common Ground. Third, only when true alternatives are presented can huǒzhé ‘or’ and bùrán substitute for each other. Fourth, ę́únzé́bùrán cannot be substituted by dánshí/kěshí ‘but’ because the former two have two properties the latter
do not share: first, $\pi_1$ contrasts $\neg\pi_1$, but not $\pi_2$, and second, $\pi_1$ and $\pi_2$ do not have equal semantic status in the sense that $\pi_2$ is more like foreground while $\pi_1$, $\neg\pi_1$ to be precise, functions more like background.

Finally, this paper argues that *fǒuzé* and *bùrán* have two major differences: first, *fǒuzé* allows only *Result* to connect $\neg\pi_1$ and $\pi_2$, while *bùrán* permits either *Result* or *Alternative*; second, *fǒuzé* has an ‘anti-good consequence’ property, but *bùrán* does not.
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論漢語的兩個篇章連詞「否則、不然」

片段篇章表述理論的解釋

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本文論證，「否則、不然」的語意類似情態詞，且需以片段篇章表述理論才能模擬，因為，此二者與篇章結構與修辭關係有關。假設有一個篇章：

\( \pi_1 \), 否則/不然 \( \pi_2 \), \( \pi_1 \)、\( \pi_2 \) 是子句，\( \pi_2 \)必須在 \( \neg \pi_1 \)的情況下才能得到詮釋。

此二篇章連詞實現下面的篇章功效：一、將 \( \neg \pi_1 \) 引介進入片段篇章表述結構中；二、\( \pi_1 \)、\( \pi_2 \)以對比關係做連結；(三) \( \pi_2 \) 與 \( \neg \pi_1 \) 以結果關係做連結，或，\( \pi_1 \)、\( \pi_2 \) 以二選一這個修辭關係連結。由哪個修辭關係做連結，視句子中包含「否則」或「不然」及 \( \neg \pi_1 \) 與 \( \pi_2 \)間是否有寬鬆的因果關係而定。

另外，也討論幾個細節：(一) 當 \( \pi_1 \) 由兩個以上的子句組成時，\( \neg \pi_1 \) 是哪個子句被否定；(二) \( \neg \pi_1 \) 為真的可能世界，在 \( \pi_2 \) 為問句或祈使句使用時，扮演角色為何；(三) 「或者」、「但是、可是」與「否則、不然」的差異。最後則討論「否則、不然」的差別為何。

關鍵字：否則、不然、篇章連詞、片段篇章表述理論、漢語