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# Single Sentences With *Jiu1* (就) Are Not Identical to Conditional Sentences: Testing *jiu1* in downward-entailing environment

Yuchen Zhang

## 1. Introduction

This paper focuses on single sentences employing *jiu1* to discuss whether they are identical to conditional sentences. *Jiu* (就) that occur in sentence (1) is termed *jiu1*<sup>1</sup> in this paper. In (1), the focus (indicated in boldface) *Yuhan* ‘John’ appears in front of *jiu*, and the sentence stress (indicated by `) is on that focus.

- (1) `**Yuhan**    *jiu1*    hui    shuo    fayu.  
John    *jiu*    can    speak    French.  
‘John, who is easy to get hold of, can speak French.’

(Liu, 2017)

When *jiu1* is inserted, (1) involves a scalar meaning, paying less effort. (1) is naturally used in a context where *A* asks *Who can speak French? I’m looking for a French interpreter*. In a context, *B* can use (1) as an answer if John is familiar with both *A* and *B* and is easy to get hold of (for example, John is not busy right now, and is just available for person *A* who is looking for him.)

According to Biq (1988), Tsai (2017), and Cho (2018), single sentences with *jiu1* have a conditional meaning: The focus phrase in front of *jiu1* is semantically similar to the antecedent clause of a conditional. The details will be discussed in Section 2. The reason that makes them consider (1) to have a conditional meaning is that the same Chinese character *jiu* is also used in [*Ruguo...jiu...*] conditionals. For example, in (2), *ruguo* ‘if’ is in the antecedent clause, and *jiu* usually appears in the consequent clause.

- (2) *Ruguo*    *Mali*    *xihuan*    *shui*,    *jiu*    *yaoqing*    *shui*    *lai*    *yuanhui*.  
If        *Mary*    like        who    *jiu*    invite    who    come    party  
‘If Mary likes someone, then I will invite him to the party.’

Because of the function of *jiu* in (2), one could consider whether (1) is generated from (2). The question is whether single sentences with *jiu1* are indeed identical to conditionals.

Zhang (2022) provided previously unnoticed data to show that when *jiu1* appeared in a disjunction sentence, *or* had an inclusive construal. In the following, these new data will be used to

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<sup>1</sup> There is another *jiu* in Chinese, I call it *jiu2*. *Jiu2* has an exclusive meaning similar to English ‘only.’

show that a single sentence with *jiu1* is not identical to conditional sentences.

## 2. Previous Research and Issue

Biq (1988) and Tsai (2017) claimed that single sentences with *jiu1* carry conditional meaning. Furthermore, Cho (2018) claimed that in Chinese identificational sentences, it also carries conditional meaning. (3) is an example of a Chinese identificational sentence.

(When chatting with my family, a person named Old Wang popped up as the conversation topic.

Not knowing who Old Wang was, I asked my family.)

(3) Q: a. Who is Old Wang?

A: b. `Gebi        shaokao   dian   de   laoban (#jiu1) shi Laowang  
Next door   barbecue   shop   of   owner   jiu   is   Old Wang  
‘Old Wang is the owner of the barbecue restaurant.’

(Cho, 2018)

In a context in which identification is sought, like in (3), (3b) is an identificational sentence with the form [‘A *jiu1* shi B]. In (3b), ‘the barbecue restaurant’s owner’ is the focus phrase and has the sentence stress. Cho (2018) pointed out that in an identificational context, *jiu1* is obligatory. In other words, without *jiu1*, (3b) is no longer an identificational sentence<sup>2</sup>.

Moreover, Cho (2018) pointed out that (3b) can be paraphrased by a conditional sentence (4):

(4) ?zhiyao        shui   shi   gebi        shaokao   dian   de   laoban,  
only-need   who   is   next door   barbecue   shop   of   owner  
shui (#jiu) shi Laowang.  
who   jiu   is   Old Wang

‘Someone only need to be the barbecue restaurant’s owner, then he is Old Wang.’

(I changed the example sentence by adding *zhiyao* in the initial position of the sentence.)

(Cho, 2018, 40)

(4) is a 只要 *zhiyao* (‘only-need’) conditional sentence, with *zhiyao* in the initial position of the antecedent clause, and in the consequent clause, *jiu* is obligatory. Interestingly, (4) without *jiu* is grammatically correct, but is not appropriate as an answer to (3a). That is, what Cho (2018) claimed in a context requiring an identificational answer, *jiu1* is obligatory. Comparing (3a) and (4), Cho

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<sup>2</sup> About the noun word order of identification sentences, there are very interesting variations in Chinese, Japanese, and English. In Japanese, the word order [‘A が B だ’] (A ga B COP) is appropriate. In English, [‘A is B] is inappropriate. Finally, in Chinese, [‘A 是 B] (A COP B) is inappropriate, but if putting *jiu1* in front of the verb, [‘A 就是 B] (A *jiu1* shi B) becomes appropriate.

found the parallel pattern between single sentences with *jiu1* and conditionals. Although (4) is an answer in an indirect way more than necessary, Chinese native speakers agree it is acceptable as an answer to (3a).

From the above, one could wonder about the relationship between (3a) and (4): Why they could answer the same question in an identification context? Do (3a) and (4) have exactly the same meaning? Why did previous researchers claim that single sentences with *jiu1* have conditional meanings? In Section 3, we will provide the answers to these questions.

### 3. Research methods

To discuss whether (3b) is identical to (4), we need to first figure out whether ‘the barbecue restaurant’s owner’ in (3b) has the same features as an antecedent clause of a conditional. The second is that *jiu1* creates an environment that is the same as the antecedent clause of a conditional. Zhang (2022) provided new data showing that when *jiu1* is inserted into a disjunction sentence, the construal of *or* changes. Hereafter, we will use data from Zhang (2022) as tools to discuss this issue.

#### 3.1. *jiu1* with disjunctions

Zhang (2022) provided new data to show that in disjunction sentences, the meaning of *or* changes:

- (5) ta `xingqisan    **huo** xingqisi    lai    xuexiao.  
he Wednesday    or    Thursday come school.  
‘He comes to school either on Wednesday or on Thursday.’

- (6) ta `xingqisan    **huo** xingqisi    jiu1    lai    xuexiao.  
he Wednesday    or    Thursday jiu    come school.  
‘On Wednesday or Thursday or both, he comes to school.’

(5) and (6) are minimal pairs, and both have disjunction *Wednesday or Thursday*. The only difference between them is whether *jiu1* is inserted. *Or* in (5) has an exclusive construal (Exclusive *or*: p or q is true if one and only one of the two disjuncts is true). In (6), *or* has an inclusive construal (Inclusive *or*: p or q is true if at least one of the disjuncts is true).

I want to add a test here to verify that *or* in (5) carries an exclusive construal, and in (6) an inclusive construal. Sentence (7) is an inappropriate reply to (5), but appropriate to (6).

- (7) bu, ta zhe liangtian bu dou lai xuexiao.  
 no he this two-day no all come school  
 ‘No, he does not come to school on both days.’

Speaker uttering (7) is objecting, not to the literal meaning of (5) or (6), but to the implication that (5) or (6) trigger, namely, he comes to school on both days. Because (5) does not imply, ‘He comes to school on both days’, (7) would be inappropriate as an answer. On the contrary, because the insertion of *jiu1* (6) has the implicature ‘on both days’, (7) could be an appropriate reply for the speaker to object to the implicature. From the test, we can see that *or* in (6) has an inclusive construal.

From (5), (6), and (7), we confirmed that data from Zhang (2022) were correct.

### 3.2. Disjunction and downward entailment

According to Chierchia, Spector, and Fox (2013), when a disjunction form *A or B* appears in an upward-entailing environment, *or* has an exclusive meaning, whereas in a downward-entailing environment, it has an inclusive context. For example, affirmative sentence (8) is an upward-entailing environment. In (8) *or* has an exclusive meaning, namely either Mary or John and not both will show up. In contrast, in (9), the antecedent clause of a conditional is a downward-entailing environment, *or* here has an inclusive meaning. (9) implies that I will go in case that Mary or John or both show up.

- (8) Mary or John will show up.  
 (9) If Mary or John show up, I will go.

### 3.3. What does *jiu1* bring to a sentence

Knowing that exclusive *or* appears in an upward-entailing environment, inclusive *or* appears in a downward-entailing environment. Let us consider the minimal pairs (5) and (6). There are two possibilities in (6) that could make *or* have an inclusive construal. The first possibility is what Zhang (2022) claims: although in (6) *or* is seemingly behaving like an inclusive *or*, it is an exclusive *or*. The meaning ‘He comes to school on both days’ comes from the interaction between an exhaustification operator *O* and a necessity operator  $\Box$  (See Zhang 2022 for details). The second possibility is that when *jiu1* is added to a sentence, it can change the sentence from an upward-entailing environment to a downward-entailing one. Naturally, *A or B* in a downward-entailing environment has an inclusive meaning. As Zhang (2022) did not discuss the second possibility, this paper will discuss the second possibility.

#### 4. Data and Analysis

In this section, two issues are going to be examined: First, we will try to determine whether *jiu1* can appear in a downward-entailing environment. If so, we could say that because  $[A \text{ or } B \text{ } jiu1]$  is in a downward-entailing environment, *or* has an inclusive meaning. If not, then because *jiu1* cannot appear in the downward-entailing environment, the form  $[A \text{ or } B \text{ } jiu1]$  in (6) remains in an upward-entailing environment, so *or* should have an exclusive meaning. The meaning ‘on both days’ comes from other reasons. Second, we attempt to determine whether *jiu1* can create a downward-entailing environment by simply entailing the disjunction  $A \text{ or } B$ . If so, in (6), *or* has an inclusive meaning; if not, it has an exclusive meaning.

Section 4.1 will discuss the first issue, and Section 4.2 the second issue.

##### 4.1. Downward-Entailing Items in Chinese

This section includes tests to show that *jiu1* cannot appear in a downward-entailing environment, such as  $A \text{ or } B + jiu1$ . First, I will testify that in Chinese negation, 没 *mei* ‘not’; 之前 *zhiqian* ‘before,’ and 至多 *zhiduo* ‘at most’ can produce downward-entailing environment. 之后 *zhihou* ‘after’ makes upward-entailing environment.

A downward-entailing environment reversed the relationship between semantic strengths. For example, ‘good books’ is semantically stronger than ‘books’, as ‘John bought good books’ entails ‘John bought a book.’ However, in a downward-entailing environment, semantic strength is reversed. For example, the proposition ‘John did not buy books’ entails that ‘John did not buy good books,’ but not conversely.

Sentences (10a), (11b), and (12b), entail (10b), (11b), and (12b), respectively. However, semantically, *books* is weaker than *good books*, and *ran* is weaker than *ran fast*. We can understand that *mei* ‘not’, *zhiqian* ‘before’, and *zhiduo* ‘at most’ can create a downward-entailing environment.

(10) a. Yuhan mei mai shu.

John not buy book  
‘John didn’t buy books.’

b. Yuhan mei mai hao shu.

John not buy good book  
‘John didn’t buy good books.’

(11) a. zhiduo sange xuesheng pao

at most three student ran  
‘At most three students ran.’

- b. zhiduo    sange    xuesheng    pao-de-kuai  
 at most    three    student    ran-DE-fast  
 ‘At most three students ran fast.’

- (12) a. zai    xie-le        yi-pian    lunwen    zhiqian,    ta    bi-le-ye.  
          at    write-ASP    one-CL    paper    before        he    gradu-ASP-ate  
          ‘Before he wrote a paper, he graduated.’  
       b. zai    xie-le        yi-pian    hao    lunwen    zhiqian,    ta    bi-le-ye.  
          at    write-ASP    one-CL    good    paper    before        he    gradu-ASP-ate  
          ‘Before he wrote a good paper, he graduated.’

In contrast to *zhiqian* ‘before,’ *zhihou* ‘after’ create an upward-entailing environment. See the following sentences.

- (13) a. zai    xie-le        yi-pian    lunwen    zhihou,    ta    bi-le-ye.  
          at    write-ASP    one-CL    paper    after        he    gradu-ASP-ate  
          ‘After he wrote a paper, he graduated.’  
       b. zai    xie-le        yi-pian    hao    lunwen    zhihou,    ta    bi-le-ye.  
          at    write-ASP    one-CL    good    paper    after        he    gradu-ASP-ate  
          ‘After he wrote a good paper, he graduated.’

In (13), ‘a good paper’ is semantically stronger than ‘a paper,’ and (13b) entails (13a) that the semantic strength is preserved.

#### 4.2. *jiu1* cannot appear in downward-entailing environment

Considering the texts above, we can now tell apart downward-entailing and upward-entailing elements in Chinese. The following sentences (14), (15), and (16) are ungrammatical, showing that *Jiu1* cannot appear in a downward-entailing environment, while (17) and (16) show that *jiu1* can appear in an upward-entailing environment.

- (14) \*zhiduo    `sange    xuesheng    jiu1    pao  
          at most    `three    student    jiu    ran  
          ‘At most three students ran.’

- (15) \*ta mei zai **`gongyuan** jiu1 yu XiaoHong jianmian  
 he not at park jiu with XiaoHong meet  
 ‘Intended: He didn’t met XiaoHong at the park.’

- (16) \*`mifan jiu1 chi-le zhiqian, ta chi-le yao.  
 rice jiu eat-ASP before, he eat-ASP medicine  
 ‘Intended: Before he ate rice, he took medicine.’

- (17) ? `mifan jiu chi-le zhihou, ta chi-le yao.  
 rice jiu eat-ASP after, he eat-ASP medicine  
 ‘After he ate rice, he took medicine.’

In the downward-entailing environments (14), (15), and (16), sentences with jiu1 became ungrammatical. However, in the downward-entailing environment (17), the sentence is still grammatical. The same can be seen in a single sentence with disjunction + jiu1 as follows:

- (18) a. ta mei zai **`gongyuan huozhe chezhan** yu XiaoHong jianmian  
 he not at park or train station with XiaoHong meet  
 ‘He didn’t met XiaoHong in the park or at the train station.’  
 b. \*ta mei zai **`gongyuan huozhe chezhan** jiu1 yu XiaoHong jianmian  
 he not at park or train station jiu with XiaoHong meet  
 ‘He didn’t met XiaoHong in the park or at the train station.’

- (19) a. zhiduo **`sange xuesheng** zai gongyuan huozhe caochang paobu.  
 at most three student at park or sports field ran  
 ‘At most, three students ran at the park or in the sports field.’  
 b. zhiduo **`sange xuesheng** zai gongyuan huozhe caochang jiu1 paobu.  
 at most three student at park or sports field jiu ran  
 ‘At most, three students ran at the park or in the sports field.’

- (20) a. zai **`mifan huozhe mantou** chi-le zhiqian, ta chi-le yao.  
 ate rice or steamed bread eat-ASP before he eat-ASP medicine  
 ‘Before he ate rice or steamed bread, he took medicine.’



- b. \* zai `mifan huozhe mantou jiu chi-le zhiqian, ta chi-le yao.  
 ate rice or steamed bread jiu1 eat-ASP before he eat-ASP  
 medicine

‘Before he ate rice or steamed bread, he took medicine.’

- (21) a. zai `mifan huozhe mantou chi-le zhihou, ta chi-le yao.  
 ate rice or steamed bread eat-ASP after he eat-ASP medicine

‘After he ate rice or steamed bread, he took medicine.’

- b. ??zai `mifan huozhe mantou jiu1 chi-le zhihou, ta chi-le yao.  
 ate rice or steamed bread jiu eat-ASP after he eat-ASP medicine

‘After he ate rice or steamed bread, he took medicine.’

Sentences (18a), (19a), and (20a) are the original downward-entailing sentences, and all of them are grammatical. However, when *jiu1* was inserted in (18b), (19b) and (20b) became ungrammatical. Nonetheless, because (21a) is an upward-entailing environment, the sentence inserting *jiu1* (21b) is still grammatical.

#### 4.3. Examining whether *jiu1* can create a downward-entailing environment

In the previous sections, we saw that *jiu1* cannot appear in a downward-entailing environment. One could wonder whether *jiu1* can create a downward-entailing environment that simply entails the focus phrase. If so, when the focus is a disjunction [*A or B*], *or* could have an inclusive meaning.

Sentence (22) is conditional, and Cheng and Huang (1996) claim that in Chinese conditionals, the variable *shui* in the consequent clause is an E-type pronoun. The second *shui* ‘who’ in the consequent clause can be replaced by a pronoun *ta* ‘he.’ In such conditionals, the pronoun *ta* appears in the consequent clause, and *jiu* is obligatory. Cheng and Huang (1996) considered *shui/he* is an E-type pronoun that has the meaning [*the one who Mary likes*].

- (22) Ruguo shui xihuan Mali, jiu yaoqing shui/ta lai yuanhui.  
 If who like Mary jiu invite who/he come party

‘If someone likes Mary, then invite him come to the party.’

(Cheng and Huang, 1996, 22)

Sentence (23) is a conditional sentence with a disjunction [Chinese spirits or red wine] in the antecedent clause, and *shui/ta* in the consequent clause. If Cheng and Huang (1996) were right, in (23), *shui/ta* can still be considered an E-type pronoun and has the meaning of *the one Who drank Chinese spirits or Red wine*, as indicated in (24).

(23) Ruguo shui he le baijiu huozhe hongjiu ,  
 if who drink-ASP Chinese spirits or red wine  
 na<sup>3</sup> shui/ta jiu tongguo le.  
 then who/he jiu pass le  
 ‘If someone drank Chinese spirits or red wine, then he passed (the test).’

(24) he le baijiu huozhe hong jiu de ren  
 drink-ASP Chinese spirits or red wine DE person  
 ‘the one who drank Chinese spirits or red wine.’

Let us consider the meanings in (23) and (24). In sentence (23), *shui/ta* has three meanings: the one who drank Chinese spirits, the one who drank red wine, and the one who drank Chinese spirits and red wine. However, in (24) *huozhe* ‘or’ has an exclusive meaning: The one who drank Chinese spirits or the one who drank red wine. If *shui/ta* in (23) has the meaning of (24), the sentence meaning of (23) should match the relative pronoun (24). However, that was not the way. This mismatch can be considered in two ways.

The first possibility is that since *huozhe* ‘or’ in (24) has an exclusive meaning, considering (24) as an upward-entailing environment is appropriate. The insertion of *jiu* in the consequent clause in (23) can cancel an upward-entailing environment, making ‘the one who drank Chinese spirits or red wine’ in a downward-entailing environment. Under this assumption, in the consequent clause of (23), because of *jiu*, the E-type pronoun ‘the one who drank Chinese spirits or red wine’ has been chanced into a downward-entailing environment, so that *or* can have an inclusive meaning.

The second possibility is following the presumption of Zhang (2022), made inside the relative clause in (24); there is an exhaustification operator  $O^4$  that makes *or* to be an exclusive or: [ $O$  *he le baijiu huozhe hong jiu de*]. Zhang (2022) assumed that the function of *jiu* is introducing an exhaustification operator  $O$  and a necessity operator  $\Box$ . According to Zhang’s analysis, *shui/ta* in (23) should have the following meaning:

- (24) a.  $O \Box$  [ $O$  *he le baijiu huozhe hong jiu de*].  
 b. somebody drank *x*; *x* needs to be CS or RW; *x* does not need to be only one of the two kind of alcohols; and *x* does not need to be both.  
 c. somebody drank *x*, *x* needs to be CS or RW; *x* is allowed to be the two alcohols; *x* is allowed to be only one of the two alcohols.

<sup>3</sup> *Na* is needed: If *na* is absent, the sentence is less grammatical.

<sup>4</sup> The definition of in Chierchia, Fox and Spector (2012) of  $O$  operator in is as the follows:

$\|O_{ALT}(S)\|^w = 1$  iff  $\|S\|^w = 1$  and  $\forall \varphi \in ALT (\varphi(w) = 1 \rightarrow \|S\| \subseteq \varphi)$

In Zhang's (2022) analysis, although the relative pronoun 'the one who drank Chinese spirits or red wine' has an exclusive meaning, but because of the insertion of *jiu*, the relative pronoun inside (23) the sentence has the meaning that, if someone drank only CS or only RD or both of the two, then he passed (the test). Otherwise, cancellation of an O operator is an unusual grammatical operation, and Zhang's (2022) operation is more considerable.

## 5. Conclusion

This paper discussed whether single sentences with *jiu1* are identical to conditionals. *jiu1* cannot appear in a downward-entailing environment because the antecedent clause of conditionals is a downward-entailing environment; it cannot be said that single sentences with *jiu1* are identical to conditionals. Section 4.3 discussed the meaning mismatch between E-type pronouns and *Ruguo* conditionals. The assumption is that *jiu1* introduces O and  $\square$  operators to make *or* inside a relative pronoun have a seemingly inclusive meaning. The results show that single sentences with *jiu1* are similar to the consequent clauses of a conditional.

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