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On a dichotomy of question types

The case of Paiwan

[論疑問句之二分法：排灣語的研究]

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This paper reexamines the conventional classification of questions in the Formosan language Paiwan: polar, disjunctive, and *wh*-questions and seeks to rectify some previous observations and offer a more insightful taxonomy. Specifically, we support the position in Egli (1990) and Huang et al. (1999) and demonstrate that polar questions are formed by a rising intonation alone and that the putative polar question particles (*ui dri*, (*ui pai*, *na*, and *ui lja*) are in fact polar question tags, while *a* and *ayau* are non-interrogative interjection particles. There are thus no morphosyntactically formed polar questions in Paiwan. Crucially, questions formed with the sentence-initial *tuki* and its variants *aki*, *ki*, and *tui* are disjunctive questions, not polar questions. We argue that *manu*, previously seen as a disjunctive interrogative conjunction, is actually an emphatic adverbial instead, meaning ‘in the end,’ which can thus appear in all types of questions and declaratives. Disjunctive questions, in either *A-or-B* or *A-not-A* form, can also be formed with a silent disjunctive interrogative conjunction. Finally, we demonstrate that disjunctive and *wh*-questions share fundamental properties and should be recognized as two subcategories of constituent questions, as opposed to polar questions. A two-way distinction is thus obtained for questions in Paiwan.

Keywords: Paiwan, polar question, disjunctive question, constituent question

關鍵詞：排灣語、是非問句、選擇問句、疑問詞問句

1. Introduction

Questions as a sentence category are routinely described in individual descriptive grammars, with various subtypes proposed, the most common categorization being a three-way distinction of polar questions (or *yes-no* questions), disjunctive questions (or alternative questions), and *wh*-questions (or constituent questions) (Hölzl 2018: 56). In English, for instance, such a three-way distinction is proposed by Huddleston (1994).

- (1) a. Are you ready? [Polar Q]
 b. Is it a boy or a girl? [Alternative Q]
 c. Whose hat is this? [Variable Q]

Indeed, in the literature, the most prevalent taxonomy of questions is this three-way categorization, and similar distinctions are made in various reference grammars of Paiwan (Chang 2000, 2006, 2018, Chen 2010, Chang 2017). Such a three-way distinction is illustrated in Figure 1.

- (2) a. I=ka pu-vurasi pai?¹
 NEG1=NEG2 have.AV-sweet.potato QP
 ‘Does it not grow plenty of sweet potatoes?’ (Chang 2006: 270)
- b. Su=’ama timadju manu su=sinsi timadju?
 2SG.GEN=father 3SG.NOM or 2SG.GEN=teacher 3SG.NOM
 ‘Is he your father or is he your teacher?’ (Chang 2018: 102)
- c. Ti-ima²=sun?
 NOM.PS.SG-who=2SG.NOM
 ‘Who are you?’ (Chang 2018: 107)

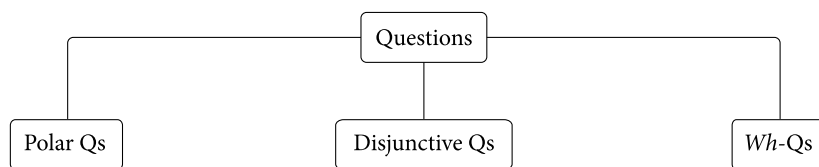


Figure 1. A three-way distinction of questions

1. The orthographies of Paiwan used in the literature are not unified. In this paper, we follow the orthography proposed by the Ministry of Education, R.O.C., and any orthographical discrepancy is modified accordingly. In addition, following the Leipzig Glossing Rules, equals signs are used to mark clitic boundaries in this and other examples in this article.
2. In the original text, *ti* and *ima* are separated. Here we follow the Leipzig Glossing Rules for segmentable morphemes and have inserted a hyphen in between.

However, several studies have also suggested the possibility of simpler two-way distinctions, where disjunctive questions in the three-way taxonomy are grouped together either with polar or *wh*-questions. Comrie (1984), for example, categorizes Russian questions into general questions (including polar questions and disjunctive questions, which Comrie 1984 calls alternative general questions) and special questions (i.e., *wh*-questions), focusing on the (in)finiteness of the possible answers. Comrie asserts that while most general questions are answered with *yes* or *no*, “this construction can also be used to ask the interlocutor which of the two alternatives holds” (Comrie 1984: 23), hence the grouping of disjunctive questions with polar questions. Sadock (1984) likewise places polar questions in West Greenlandic as a subtype of disjunctive questions. The same categorization is also found in Mandarin and Cantonese (Dixon 2012: 390–400). These views agree with Huddleston (1994: 419), where he points out that both polar and disjunctive questions have closed sets of answers, while the answers to *wh*-questions are open. Such a taxonomy is illustrated in Figure 2 (cf. Comrie 1984, Sadock 1984, Huddleston 1994, Dixon 2012).

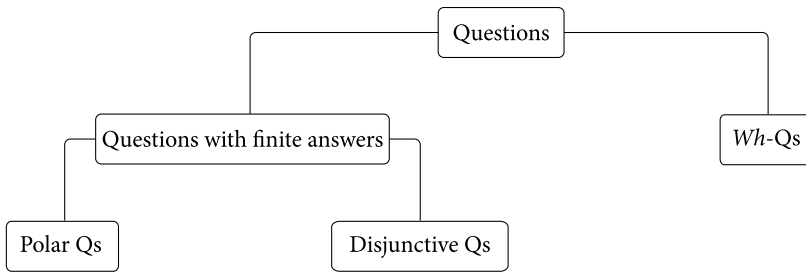


Figure 2. A two-way distinction of questions

However, Tang (1984) contends that it is *wh*-questions that disjunctive questions should be grouped with, as interlocutors are asked to choose from a set of possible answers. Polar questions, on the other hand, require an interlocutor to (dis)agree with the proposition provided. Such a dichotomy is further explored in Hsiao & Her (2021) and Her, Che & Bodomo (2022), where it is pointed out that pragmatically, polar questions seek confirmation, while both disjunctive questions and *wh*-questions require an interlocutor to provide information. Information-seeking questions, therefore, have an information gap that needs to be filled, while confirmation-seeking questions expect (dis)confirmation of the proposition. Such a view is summed up in Figure 3 (Tang 1984, Hsiao & Her 2021, Her, Che & Bodomo 2022).

Her, Che & Bodomo (2022) note that such a pragmatic dichotomy is also shown in the semantics of these three types of questions. Semantically, polar ques-

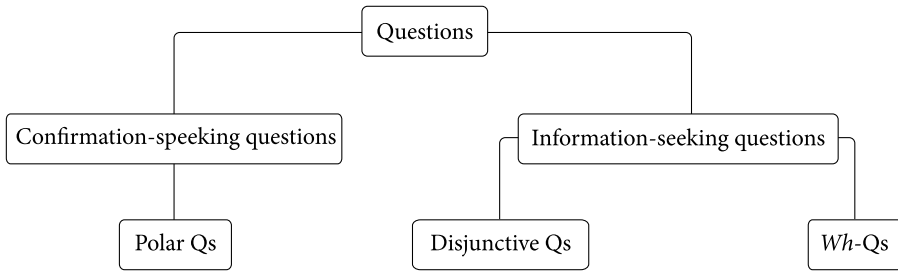


Figure 3. A two-way distinction of questions

tions denote singleton sets of propositions, while the other two types denote sets of two or more propositions. While disjunctive questions often come with only two alternatives, leading to the grouping of polar and disjunctive questions under the single category mentioned earlier, they can denote more than just two propositions.

- (3) a. Is your favorite season of the year spring, summer, autumn, or winter?
 b. What is your favorite season of the year?

(Her, Che & Bodomo 2022: 8)

In this sense, disjunctive questions can be regarded as a special kind of constituent question, in which the propositions are overtly pronounced. Considering the pragmatic and semantic (in)congruity, the two-way distinction proposed by Tang (1984) and Her, Che & Bodomo (2022) is thus more tenable.

Her, Che & Bodomo (2022) also point out that a language does not have to have polar questions and as disjunctive questions can have as few as two propositions with opposite polarity, they are often confused with polar questions. Consider the sentences in (4a), where the two propositions are the affirmative and negative of a statement, forming an *A-or-not-A* disjunctive question. This *A-or-not-A* disjunctive question can in turn be shortened into (4b) as an *A-or-not* disjunctive question.

- (4) a. Do you want to go or do you not want to go?
 b. Q: Do you want to go or not?
 A: Yes (I want to go)./No (I do not want to go).

The *A-or-not* disjunctive question in (4b) is in this sense very similar to a polar question in both its form and the responses it takes. However, it is still evidently a disjunctive question. Such ambiguity has caused many *A-or-not-A* disjunctive questions to be mistaken for polar questions in different languages. In Lau's (2010) investigation of questions in Taiwan Southern Min, for example, numerous putative polar question particles are proposed: *buē/bē*, *bô*, *m̄*, *nih*,

honnh, *ma*, *mm*, *sī-bô*, *sī-m̄* (*sīm*), *sioh*, *hìdo*, and *m̄-me* (*me*). However, upon examination, Hsiao & Her (2021) filter this list to only *nih* and *honnh*, contending that all the others are in fact A-not-A question tags,³ where the disjunctive interrogative *or* and the repeated statement A are not pronounced. An investigation of questions in Changsha Xiang by Her, Che & Bodomo (2022) also finds that none of the putative polar question particles in Changsha Xiang is polar particles and that there are no polar questions in Changsha Xiang at all.

In this paper we argue that a dichotomy of questions like that of Tang (1984) and Her, Che & Bodomo (2022) is more fitting in Paiwan, not only in the spirit of Occam's Razor but more crucially due to the similar behavior of disjunctive questions and *wh*-questions and their distinction from polar questions. In Section 2, we will review previous classifications of Paiwan questions. In Section 3, we demonstrate that patterns identical to those found in Tang (1984), Hsiao & Her (2021), and Her, Che & Bodomo (2022) are also found in Paiwan. Crucially, polar questions in Paiwan are formed with intonation. There are no morphosyntactic polar questions, and Paiwan disjunctive questions and *wh*-questions are alike in terms of distribution. The findings thus support a two-way distinction of questions in Paiwan.

Before we proceed, we shall briefly introduce the Paiwan dialects, the six informants in the study and explain why the findings of this study can apply to Paiwan in general.

Paiwan is located in Pingtung and Taitung, the two southmost counties of Taiwan, which have a population of around a hundred thousand. Though various other more sophisticated and fine-tuned classifications have been proposed, Taiwan's Council of Indigenous People officially recognizes four dialect groups (Ministry of Education, R.O.C. 2015): North Paiwan (including the Stimul and Makazayazaya regions), East Paiwan (including the Tadren, Panglui, Kinzang and Tjavualji regions), Central Paiwan (including the Tjaljaqavus, Tjaranauma, Kulajuc and Kasuga regions), and South Paiwan (including the Shishito, Sinvaudjan, Vangeceul and Kasuga regions). For the purpose of this study, it is important to note that linguistically such classifications, the official one included, are primarily concerned with phonological variations (e.g., Ogawa & Asai 1935, Ho 1978, Ferrell 1982, Cheng 2016, cf. Cheng 2021) and no significant morph-syntactic variation has been reported.

In terms of the formation of questions in particular, while previous studies on Paiwan questions all use data collected from one or two dialects, most do not limit their findings and conclusions to the respective dialects. For example, while

3. Tag questions, as defined in Cuenca (1997), are reduced interrogative clause, juxtaposed beside a statement.

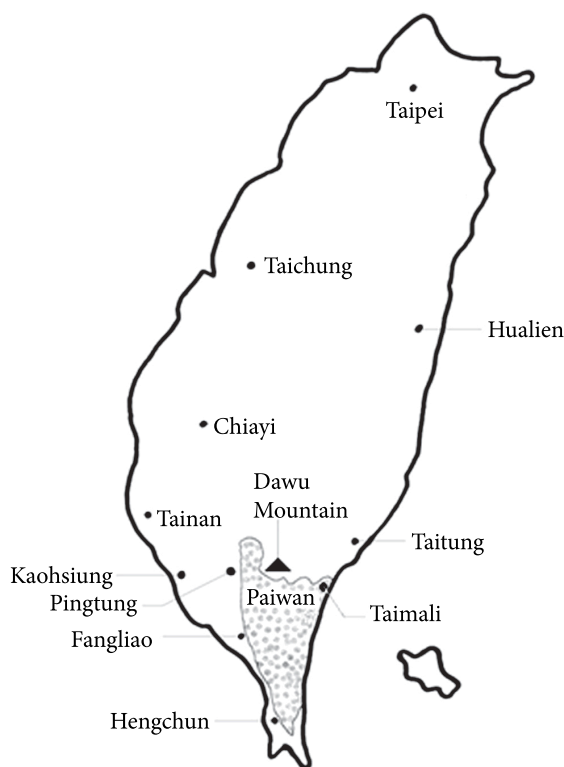


Figure 4. Geographical distribution of Paiwan (Wu et al. 2011: 40)

the data in Chang (2006) is from two North Paiwan townships, Santimen and Saichia, the title of this work is *A Reference Grammar of Paiwan*. Likewise, Huang et al.'s (1999: 641) claim that Paiwan has only prosodically formed polar questions is not restricted to specific dialects, though the data is from North Paiwan. Indeed, to the best of our knowledge, none of the studies on Paiwan questions ever addresses any potential or actual dialectal variation and there is no mention of any dialectal variation when they cite data or findings from earlier works.

In this study, we were assisted by six naïve native informants: one male from Tjavuali (East Paiwan), one male from Tadren (East Paiwan), one male from Makazayazaya (North Paiwan), one female from Sinvaudjan (South Paiwan), and one male and one female from Timur (North Paiwan). The male from Makazayazaya is in his 20s, the female from Sinvaudjan is in her 40s, and all others are in their 50s or 60s. All are proficient native speakers, and the youngest informant has been certified by the Council of Indigenous People to be at the advanced level of North Paiwan. Based on the above-mentioned facts, we are confident that the analyses proposed are applicable to Paiwan in general.

2. Three-way distinction of Paiwan questions

In this section, we review the conventional three-way distinction of Paiwan questions in the literature. As mentioned earlier, Paiwan questions, like those in other languages, have been commonly categorized into three subtypes in previous studies of Paiwan grammar, e.g., Chang (2000, 2006) for the Stimul region of North Paiwan; Chen (2010) for the Stimul region of North Paiwan, the Sinvaudjan region of South Paiwan, and the Tjavual region of East Paiwan; Chang (2017) for the Makazayazaya region of North Paiwan; and Chang (2018) for the Tjaljaqavus region of Central Paiwan; examples are given in (2).

Despite the consensus of a three-way distinction, previous accounts vary greatly in their detailed descriptions of polar questions. Chang (2006: 270) and Chen (2010) both note that a polar question is formed with a sentence-final, or S-final in short, question particle *pai*, *dri*,⁴ or *ayau*. Chang (2017: 54) does not mention *dri* and *ayau* but offers several other particles and further classifies polar questions into three sub-types: intonation questions, tag-questions, and particle questions, as shown in Figure 5.

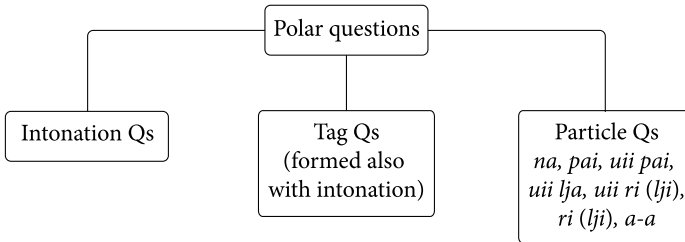


Figure 5. Three types of putative polar questions in Paiwan (summarized from Chang 2017)⁵

Chang (2018: 99),⁶ however, only accepts *a* as an S-initial polar particle. We also note that, aside from the aforementioned items, our informants suggested

4. In the original text, it was *di*. This is simply an orthographical difference, much like the difference between “gray” and “grey” in American and British spellings or like the difference between 羅馬字 ‘Romanization’ and 白話字 ‘Taiwanese Romanization’ in Taiwan Southern Min. We employ *dri* in this paper in accordance with the orthography proposed by the Ministry of Education.

5. Both Chang (2006, 2018) and our informants suggest that *ui* ‘yes,’ instead of *uii*, is the right form, which we will adopt.

6. Note that Chang (2000, 2018) are parts of the Formosan Reference Grammar Series meant for Formosan Language teachers and learners.

another putative polar question particle *tuki*. In Section 3.1, we will dispute all these putative polar particles and support the earlier view expressed in Egli (1990) and Huang et al. (1999: 641). We agree with them that Paiwan uses only prosodic means to form polar questions and contend that there are thus no morpho-syntactically-formed polar questions. Specifically, we demonstrate that these putative polar questions are either formed by intonation⁷ or are declaratives. In addition, we further verify that putative polar questions formed with *tuki* are indeed disjunctive questions, where *tuki* is a disjunctive interrogative element taking on the meaning of ‘whether or not.’

Previous studies do seem to agree that disjunctive questions in Paiwan are formed by *manu* ‘or,’ the putative disjunctive interrogative conjunction that conjoins two alternatives in the form of A-or-B, and Chang (2000) and Chang (2017) note that *manu* can also appear in front of the first disjunct in an *or-A-or-B* form. However, Chang (2017) also indicates that *manu* can serve to mean ‘in the end’ in intonation polar questions. In Section 3.2, we will argue against *manu* as a disjunctive interrogative element and argue for its sole status as an emphatic adverbial,⁸ meaning ‘in the end,’ which can appear in both declaratives and interrogatives.

In addition to *manu*, Chang (2017) also considers *tuki* as both a disjunctive interrogative conjunction and an adverbial meaning ‘whether or not.’ In Section 3.2, we will demonstrate that two forms of *tuki* exist. It is a disjunctive interrogative element that forms a *whether-or-not* question when followed by an otherwise declarative clause. Yet, when it appears in a *wh*-question or an *A-or-B* or *A-not-A* question, it is an adverbial similar to the English *after all* and Mandarin *dàodǐ*. Crucially, we contend that Paiwan *A-or-B* and *A-not-A* questions contain a silent disjunctive interrogative conjunction OR.

Finally, *wh*-questions contain a straightforward *wh*-element and are without controversy in terms of their classification. There are, however, variations regarding the status of the *wh*-words. Lists of Paiwan *wh*-elements have been put forth (cf. Chang 2006, 2018, Hsieh 2019), as can be seen in Table 1. In Chang (2006: 275), four categories are proposed: nouns, verbs, adverbials, and numerals, while in Chang (2018) and Hsieh (2019), only the first three are listed. The aux-

7. Intonation polar questions, as defined in Dryer (2013), are those with the same morphosyntactic patterns as declarative ones, with only the distinction of intonation to indicate their interrogative status.

8. Adverbs as an independent syntactic category in Formosan languages is disputed in the literature and such elements are often referred to as ‘adverbial verbs’ as they may behave as verbs (e.g., H. Y.-I. Chang 2010: 211). In this paper, we follow the studies of Chang (2018) and Hsieh (2019) and use the term ‘adverbial’ instead.

iliary *'aku*⁹ in Chang (2006) is treated as an adverbial in Hsieh (2019), and the adverbial *inu* 'which' in Chang (2018) is a noun in Hsieh (2019). *Pida* and *mapida* are classified as verb and adverbial respectively in Chang (2018) and Hsieh (2019). Nominal *wh*-words in Paiwan can be marked by case markers like nouns. Verbal *wh*-words likewise can take on tense markers and pronominal clitics, and focal inflections, while adverbial ones cannot. Hsieh (2019), however, based on this, contends that *pida* and *mapida* are adverbials rather than verbs since they do not take focal inflections and can only take the completive aspect marker *anga*. In terms of the positions of *wh*-words, there is not much disputation. *Wh*-nouns can appear both sentence-initially and sentence-medially (as oblique); *wh*-verbs derived from *kuda*, and *'aku* can only occur sentence-initially. *Wh*-adverbials can be in sentence-initial, -medial, and -final positions (Hsieh 2019). The disputed *pida* and *mapida* usually occur sentence-initially.

Table 1. *Wh*-words in Paiwan

Forms	Meaning	Chang (2006)	Chang (2018)	Hsieh (2019)
<i>ima</i>	Who?	Personal noun	Noun	Noun
<i>nema</i>	What?	Common noun	Noun	Noun
<i>kuda</i>	Do what?			
<i>kuda-in</i> (<i>k<in>uda</i>)	Do what?			
<i>si-kuda</i>	What for?/What happens?	Verb	Verb	Verb
<i>ma-kuda</i> ^a	What is the matter?			
<i>inu</i>	Where?	Locative noun	Noun	Noun
	Which?	–	Adverbial ^b	Noun
(<i>'a</i>) <i>ku</i>	Why?	Auxiliary ^c	–	Adverbial
<i>nungida</i>	When (irrealis)?	Temporal noun	Adverbial	Adverbial
<i>kangida</i>	When (realis)?	Temporal noun	Adverbial	Adverbial
<i>pida</i>	How many/much?	Numeral	Verb	Adverbial
<i>mapida</i>	How many people?	Sortal classifier & numeral collation	Verb	Adverbial

a. The *wh*-words here are from the Tjailjaking dialect, recorded in Chang (2006), which is phonetically different from other Northern Paiwan dialects, but does not show syntactic and semantic discrepancy in terms of the *wh*-words discussed here (Hsieh 2019).

b. The existence of adverbs in Formosan Languages is disputed in the literature. Both Chang (2018) and Hsieh (2019) thus use the term 'adverbial' instead.

c. The existence of auxiliaries in Paiwan is also unclear. Li (2008) expresses doubt, and Chang (2006) is also uncertain about the status of (*'a*)*ku*.

9. In our informants' data, there does not seem to be a glottal stop in *aku*.

While the proper status of the *wh*-elements, crucially, *'aku*, *pida*, and *mapida*, requires further investigation, it is not immediately relevant to the core discussion of the present study and will be set aside for now. In Section 3.3, however, we will point out that disjunctive and *wh*-questions share significant common properties. This suggests that they are two subcategories of a major category of constituent questions as opposed to polar questions.

3. A dichotomy of Paiwan questions

In general, while discrepancies exist, previous studies generally agree on a three-way distinction of Paiwan questions. However, we examine these proposed categories and argue that, observing the morphosyntactic behaviors and semantics of the Paiwan questions, the dichotomy proposed by Tang (1984), Hsiao & Her (2021), and Her, Che & Bodomo (2022) affords a more insightful account. Crucially, we will demonstrate that putative Paiwan polar questions are actually either disjunctive questions or declaratives. We also show that Paiwan disjunctive questions share a great amount of similarity with *wh*-questions.

3.1 Polar questions in Paiwan

Polar questions in Paiwan have been commonly recognized in the literature. In this section, we contend that in Paiwan, polar questions are only formed with a rising intonation¹⁰ and that there are thus no morphosyntactically-formed polar questions.

3.1.1 Putative polar question particles in Paiwan

Both Chang (2006) and Chen (2010) recognize that a declarative sentence in Paiwan can be turned into a polar interrogative by a rising intonation, with the optional addition of one of the two S-final polar particles, namely, *pai* and *dri*, as shown in (5) and (6). Chang (2006) also notes that Paiwan declaratives can like-

10. According to Chen (2010), in Paiwan, boundary tones are the most distinctive prosodic feature between a falling declarative and a rising question. A Paiwan declarative typically has a low boundary tone at the right edge, while questions other than *wh*-questions have high boundary tones at the right edge. Therefore, the rising intonation we refer to in this study denotes the high boundary tone at the right edge of a question.

wise be turned into polar questions without rising intonation, with obligatory S-final polar particle *ayau*, as in (7), taken from Chang (2006).¹¹

- (5) I=ka pu-vurasi pai? (Rising)
 NEG1=NEG2 have.AV-sweet.potato QP
 ‘Does it not grow plenty of sweet potatoes?’ (Chang 2006: 270)
- (6) I=tja i=zuua~zuua dri?¹² (Rising)
 LOC=OBL.CM LOC=RED~there QP
 ‘At that place over there, right?’ (Chang 2006: 272)
- (7) Mana i=ka pu-vurasi~rasi, ayau?
 COP NEG1=NEG2 have.AV-sweet.potato~RED QP
 ‘They are the sweet potatoes which do not produce many sweet potatoes,
 aren’t they?’ (Chang 2006: 467)

In the data we collected, all three S-final polar particles are attested. However, Chang (2018) does not mention these S-final polar particles but instead offers an S-initial polar particle *a*, as in (8).

- (8) A su='ama timadju?
 QP 2SG.GEN=father 3SG.NOM
 ‘Is he your father?’ (Chang 2018: 99)

A more comprehensive survey is provided in Chang (2017), with putative polar questions classified into three types: intonation questions, tag questions, and particle questions (cf. Figure 5). Intonation polar questions contain no interrogative lexical elements and come in three types depending on the specific intonation patterns: rhetorical questions expecting no response, questions expecting a positive response, and questions expecting either a positive or negative response. Tag questions are simply *ui* ‘yes’ or *ini* ‘no’ that appear at the end of a declarative sentence and are likewise only formed with intonation, thus also without any lexical interrogative element. Putative particle polar questions are therefore quite different, formed with one of seven interrogative elements: *na*, *pai*, *ui pai*, *ui lja*, *ui ri (lji)*, *ri (lji)*, *a-a*. Unlike Chang’s (2006) three S-final question particles, these particles can appear both S-initially and S-finally; Chang’s (2017) *pai* can even appear S-medially. Examples are provided in (9).

11. Specifically, rising intonation is required for the polar interrogative, with or without *pai* or *dri*; however, when the sentence is formed with *ayau*, a positive response is expected and the intonation thus remains similar to that of a declarative (Chang 2006: 272). In Section 3.1.2, we argue that they are declaratives and not interrogatives.

12. In the original text, it was *di*. We follow the orthography proposed by the Ministry of Education and use *dri*.

- (9) a. Uri¹³ qavai a mun nutiau ui.lja?¹⁵
 FUT¹⁴ make.rice.cake<AV> NOM 2PL.NOM tomorrow QP
 ‘You will make rice cake, is it so?’ (Chang 2017: 57)
- b. Kisumulja aravac pai ti Mukai?
 hard-working very QP NOM.PS.SG PN
 ‘Mukai is hardworking, right?’ (Chang 2017: 58)
- c. Ui.lji kiljivak-an¹⁶ a su=kinacemkeljan?¹⁷
 QP cherish-LV NOM 2SG.GEN=family.member
 ‘(I should) cherish your family members, is it so?’ (Chang 2017: 58)

Note that Chang’s (2017) *pai* and *ui pai* are essentially the same, since the latter can be deduced to *pai* only (Chang 2017: 57), and the same applies to *ui ri* and *ri*, which is the same element as *dri* in Chang (2006) and Chen (2010). We will use *dri* hereafter.¹⁸ Also, *a-a* and *a* should be identified as the same item. Our informants have identified an *a* that has the same meaning as Chang’s (2018) *a* and Chang’s (2017) *a-a*. This *a* also appears both S-initially and S-finally, as *a-a* does. This allows us to conclude that these three items are the same, and we will use *a* hereafter. This leaves only six particles to be examined: *ayau*, *dri*, *pai*, *na*, *ui lja*, and *a*. See Table 2 for a summary.

Our informants offer four additional candidates: *tuki*¹⁹ and *ki*, *aki*, and *tui*, which appear S-initially, as in (10). These four items share the same syntactic behavior and semantic distribution.²⁰ Given that the Masiljid and Timur infor-

13. In Chang (2017), the first letter of a sentence is not capitalized. We capitalize the first letter of a sentence. This applies to other examples taken from Chang (2017).

14. In the original text, the future marker *uri* is glossed in Mandarin as *jiang*. We gloss it as FUT with ‘will’ as the translation.

15. In the original text, *ui* and *lja* are separated. However, since Chang (2017) analyzes *ui lja* as a particle, the two elements should be regarded as two morphemes of a word. We therefore gloss them as a word in the example. The same applies to *ui pai* and *ui ri* (*lji*).

16. Note that *an* here should not be considered as a locative as in the original text. In Chang (2006), it is treated as instrumental, with a benefactor. Huang (2012) considers it a circumstantial undergoer voice marker. We thank an anonymous reviewer for pointing this out.

17. In the original text, *su* and *kinacemkeljan* are separated.

18. This conclusion was made for two reasons. The first reason is that *dri*’s (/d̥i/) /d/ has the same place of articulation with /r/, and both are rhotic sounds, which share certain articulatory and acoustic features. The other reason is that our Makazayazaya (where Chang’s 2017 data were collected) informant reports that he has never heard of the term *lji/ri* or *ui lji/ri* (Chang 2017 does not specify the difference between *lji* and *ri*). He is, however, comfortable with *dri*, and has heard of *ui dri* (though he thinks it is outdated).

19. *Tu*’i for the Masiljid informant.

20. *Ki* and *tui* are, however, informal.

Table 2. Putative polar question particles of Paiwan in literature

Chang (2006)	Chang (2017)	Chang (2018)
<i>dri</i>	<i>ri</i>	–
	<i>ui ri</i>	–
<i>pai</i>	<i>pai</i>	–
	<i>ui pai</i>	–
<i>ayau</i>	–	–
–	<i>na</i>	–
–	<i>ui lja</i>	–
–	–	<i>a</i>

mants use only *tuki*, *ki* and *aki* and the Tjavualji and Tadren informants use only *tuki*, *ki*, and *tui*, we will use *tuki* in relevant examples hereafter and regard the variant forms as allomorphs of free variation.

- (10) Tuki/aki/ki/tui ma-leva=sun?
 QP/QP/QP/QP AV-happy=2SG.NOM²¹
 ‘Are you happy?’

It should be noted, however, that the putative polar question particle *tuki* is reminiscent of the second function of *tuki* in Chang (2017), mentioned in Section 2 and shown in (11), where the *tuki* takes on the meaning ‘whether or not.’

- (11) Na tuki vaika-anga²² ti Vavauni?²³
 NA whether.or.not go-COM NOM PN
 ‘Is Vavauni gone or not?’ (Chang 2017: 88)

We agree with this disjunctive analysis. We will demonstrate in Sections 3.1.3 and 3.2 that the *tuki* in (10) and (11) forms a *whether-or-not* disjunctive question. In addition, we will show that *tuki* in an otherwise declarative sentence is in fact a disjunctive interrogative element that forms a disjunctive question. In the rest of this subsection, we also dispute all other alleged polar interrogative particles

21. Note that the AV prefix *ma* is to be differentiated from the AV infix *em*. In Chang (2006), *ma* is considered as anticausative, while in the literature it is usually treated as stative (e.g., Wang 2005).

22. In Chang (2006), the completive aspect marker *anga* is regarded as a clitic, whereas in Chang (2017) it is glossed as a bound morpheme. We respect the respective glosses of the authors.

23. In the original text, it is *vavauni*. We capitalize the first letter of a person’s name.

and demonstrate that none of them triggers the interpretation of a polar question. Also, Paiwan does not employ any syntactic construction for polar questions. We shall support the view of Egli (1990) and Huang et al. (1999: 641) that a rising intonation is the only means to encode polar interrogative semantics and thus argue against Chang's (2006: 268) position that besides intonation Paiwan also employs polar interrogative particles.

3.1.2 Identifying true polar questions

We will now discuss putative polar questions and first consider the three kinds of intonation polar questions that Chang (2017) identified. Note these are interrogatives formed purely with intonation, which are otherwise declaratives. First, rhetorical questions are questions in form only and expect no response, as a positive response is presumed by the speaker. Nonetheless, in reality, the hearer can of course still redundantly agree or object to the presumption by disagreeing. These are thus intrinsically polar questions. The same is true for questions expecting a positive response, the only difference being the intensity of the speaker's presumption on the proposition being true. Though confirmation is strongly presumed, an overt positive response is expected. Still, in reality, there is nothing preventing the hearer from disconfirming the presumed true proposition. The third kind involves intonation questions that expect either confirmation or disconfirmation and carry no obvious presumptions; these are thus quite straightforwardly polar questions. In short, setting aside the differences in intonation that attribute to the different degrees of presumption, all intonation questions in Paiwan are polar questions via intonation, not by lexical or syntactic means.

Next, we consider Chang's (2017) tag questions. These come at the end of a declarative sentence in the form of *ui* 'yes' or *ini* 'no' with a rising intonation, as in (12). However, such interrogative *ui* 'yes' or *ini* 'no' can stand alone, as shown in (13b), as a response to a statement. The difference between the interrogative use of *ui/ini* and the declarative use is intonation. Tag questions are thus also intonation questions and require (dis)confirmation of a proposition.

(12) Ti Legeai timadju, ui/ini?
 NOM PN 3SG.NOM yes/no
 'He is Legeai, yeah/no?'

(13) a. Ti Legeai timadju.
 NOM PN 3SG.NOM
 'He is Legeai.'

b. Ui?
 yes
 'Yeah?'

Having justified intonation questions and tag questions as phonological polar questions, we now examine putative polar questions by lexical means, that is, particles *ayau*, *dri*, *pai*, *na*, *ui lja*, and *a*. It is important to point out that except for *ayau* a rising intonation is necessary for the putative particles to form such questions, thus making them intonation questions. More importantly, except *ayau* and *a*, these particles can all stand alone as declaratives or appear in declaratives as part of the confirmation, as shown in (14).

- (14) a. Uri qavai a men nutiau, ui.lja.
 FUT make.rice.cake<AV> NOM 1PL.NOM tomorrow UI.LJA
 ‘We will make rice cake; it is so.’ (Chang 2017: 57)
- b. Ui, kismulja aravac ti Muakai pai.
 yes hard-working very NOM.PS.SG PN PAI
 ‘Yes, Mukai is hardworking; it is so.’ (Chang 2017: 55)
- c. Pai!
 PAI
 ‘It’s so!’
- d. T<in>alem-an²⁴ tua lapanay, ’a-’aca’aca-an=anga²⁵ a za
 plant<PEF>-LV OBL.CM corn DIST1-tall-DIST2=COM NOM.CM that
 lapanay, dri.
 corn DRI
 ‘(As for) the corn that we planted, (they) have all grown tall.’
 (Chang 2006: 469)
- e. Q: Na? (Rising) izua su=sala~saladj a
 NA have 2SG.GEN=friend~RED²⁶ NOM
 ki-sutja~sutjau? (Rising)
 PRO-harvest.peanuts~RED
 ‘Your friends are harvesting peanuts?’ (Chang 2017: 53)
- A: Na! (Rising) ui izua ku=sala~saladj a
 NA yes have 1SG.GEN=friend~RED NOM
 ki-sutja~sutjau.
 PRO-harvest.peanuts~RED
 ‘Yes, my friends are harvesting peanuts.’ (Chang 2017: 53)

24. T<in>aLem-an in the original text.

25. In the original text, it is *ʔa-ʔacaʔaca-an-anga*. We follow the orthography proposed by the Ministry of Education.

26. In the original text, a hyphen ‘-’ is used. Following the Leipzig Glossing Rules, tildes ‘~’ are used for the reduplication forms in this article instead. We thank the reviewer for this suggestion.

The four elements *dri*, *pai*, *na*, *ui lja* are therefore not polar interrogative particles, which cannot exist on their own and must occur in a sentence. Instead, these elements shall be classified as question tags with a rising intonation. Semantically, questions formed with these elements seek a response and are thus similar to English tags such as *right?*, *correct?*, and *yes?*. Both *dri* and *pai* urge the interlocutor to make a response. Similar functions are also identified for *na* and (*ui*) *lija* in Chang (2017).²⁷ In addition, our tag analysis is also supported by Chen (2010). In Chen, questions formed with both *dri* and *pai* are classified as tag questions, with the high boundary tones aligned with the tags.²⁸ The semantics and the syntactic-prosodic distributions of these elements therefore suggest that they are in fact question tags.²⁹ As such, questions formed with these tags are also polar questions by phonological rather than morphosyntactic means.

As for the S-initial element *a*, crucially, polar questions with the optional *a* must have a rising intonation. Thus, *a* does not turn a declarative into a polar interrogative. The example in (15a) without *a* is a polar question only if the intonation is rising; likewise, (15b) with *a* must also have a rising intonation to be a polar question. The difference *a* contributes is the speaker's surprise or disbelief of the proposition put forth. The final and most decisive piece of evidence that *a* is not a polar interrogative particle is that it can also appear in *wh*-questions and

27. The semantic function a tag contributes can be illustrated by comparing (i), a declarative statement without a putative particle repeated from (13a), and (ii), the same declarative statement with a putative particle (i.e., a tag question) repeated from (12).

- (i) Ti Legeai timadju.
 NOM PN 3SG.NOM
 'He is Legeai.'
- (ii) Ti Legeai timadju, ui/ini?
 NOM PN 3SG.NOM yes/no
 'He is Legeai, yeah/no?'

Thus, (i) and (ii) are identical in every way, except that (ii) has an additional tag question attached to the declarative statement.

28. In Chen (2010), 68% of the investigated tag questions had junctures between the main clauses and the tags; however, such junctures are not classified as intonation phrase boundaries. Intonation phrase boundaries are therefore not obligatory before tags in Paiwan.

29. While the number of tags in Paiwan may seem relatively large, this is not uncommon cross-linguistically. In Mandarin for example, there may be even more: *shì-ma*, *bú-shì-ma*, *shì-bú-shì*, *duì-ma*, *bú-duì-ma*, *duì-bú-duì*, *hǎo-ma*, *bù-hǎo-ma*, *hǎo-bù-hǎo*, *síng-ma*, *bù-síng-ma*, *síng-bù-síng*, *kě-yǐ-ma*, *bù-kě-yǐ-ma*, *kě-bù-kě-yǐ*, *kě-yǐ-bù-kě-yǐ*, etc. Likewise, the varieties in English also likely outnumber those in Paiwan: [auxiliary do/be/have + subject/pronoun] and their negative counterparts, plus *OK?*, *right?*, *correct?*, *yes?*, *no?*, etc.

question tags, as in (16a) and (16b), respectively. We thus treat *a* as an interjection of surprise, which can appear before or after a question.

- (15) a. Ma-leva=sun?
 AV-happy=2SG.NOM
 ‘Are you happy?’
- b. A ma-leva=sun?
 A AV-happy=2SG.NOM
 ‘You are happy? (with emphasized tone)’
- (16) a. A aku kedri tu ita?
 A why little OBL.CM one
 ‘Why does there lack one?’
- b. A ma-leva=sun pai?
 A AV-happy=2SG.NOM tag
 ‘Are you happy?’

The last putative polar particle to examine is *ayau*. Note first that, unlike the other five candidates, *ayau* does not require a rising intonation to form a question. This is shown in Figure 6 for the example *ika puvurasirasi ayau?* ‘They don’t grow many sweet potatoes, do they?’ (Chang 2006: 273).

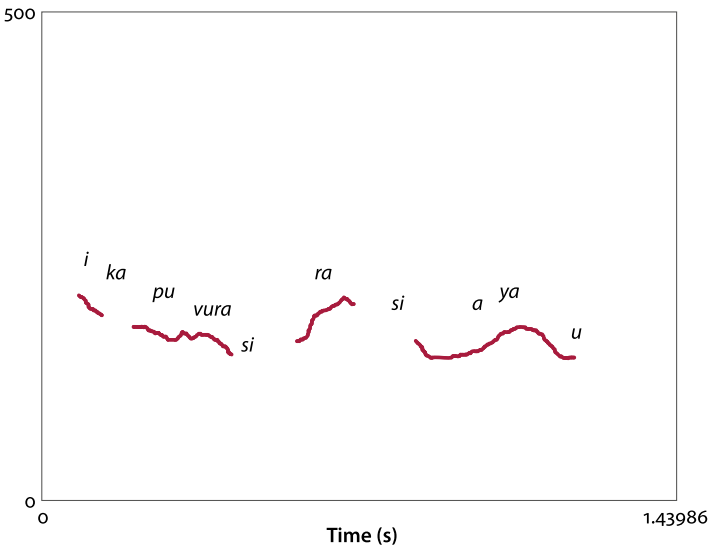


Figure 6. Intonation pattern of *Ika puvurasirasi ayau?* (Chang 2006: 273)

In addition, *ayau* cannot stand alone; it thus behaves like a particle. The crucial issue is whether it is polar interrogative at all. Consider the meaning *ayau*

contributes to the preceding proposition. Chang (2006) notes that (putative) polar questions with *ayau* carry a high expectation of confirmation. Our informants also indicate that *ayau* implies a strong presupposition of the proposition put forth. In addition, etymologically, *ayau* is the imperative form of the verb *aya* ‘to say’ (Ferrell 1982: 61). It thus conveys a strong sense of the speaker presupposing the truth value of the proposition put forth. These facts indicate that *ayau* is a declarative particle. One of our informants also expressively affirms sentences with *ayau* to be declarative, not interrogative. Also, in Chang (2006), *ayau* is interpreted as ‘I am wondering.’ This interpretation, along with the following statement, also forms a declarative.

Nevertheless, the most robust evidence is the fact that *ayau* is not compatible with *palemek* ‘perhaps.’ The sentential adverb *perhaps* is often considered to be an epistemic marker cross-linguistically, e.g., in Hungarian (Kugler 2010), English (Suzuki 2018), and Mandarin (Tung 2016). Such epistemic adverbs weaken the veridicality of a sentence (Tung 2016) and thus are incompatible with interrogatives, which are non-veridical by nature (Giannakidou 2014). As can be seen in (17), *palemek* is fine in a declarative but not in conventional disjunctives and *tuki* sentences, which, as we will show in the next section, are disjunctive interrogatives.

- (17) a. Ljemita ta qadaw palemek a pacun=sun ta tiribi.
 every OBL.CM day perhaps LIN see=2SG.NOM ONL.CM television
 ‘Perhaps you watch television every day.’
- b. *Palemek ljemita ta qadaw a pacun=sun ta tiribi manu
 perhaps every OBL.CM day LIN see=2SG.NOM OBL.CM television or
 ini?
 NEG
 ‘Do you perhaps watch television every day or not?’
- c. *Tuki ljemita ta qadaw palemek a pacun=sun ta tiribi?
 TUKI every OBL.CM day perhaps LIN see=2SG.NOM OBL.CM television
 ‘Do you perhaps watch television every day or not?’

Palemek ‘perhaps’ is, however, fine in *ayau*-sentences, just as in declaratives like (17a). See (18). We thus conclude that *ayau* is a declarative particle rather than a polar QP.

- (18) Ljemita ta qadaw palemek a pacun=sun ta tiribi, ayau.
 every OBL.CM day perhaps LIN see=2SG.NOM OBL.CM television QP
 ‘Perhaps you watch television every day, I presume.’

3.1.3 Confirming the status of *tuki* disjunctive questions

Having refuted the putative morphosyntactic polar questions proposed in the literature, we now turn to the S-initial interrogative element, *tuki*, and its free variants *aki*, *ki*, and *tui*. These elements turn an otherwise declarative sentence into a question without any presumption of (dis)confirmation of a proposition, e.g., *aki malevasun?* ‘Are you happy or not?’ Here we provide concrete evidence for the view that *tuki* in this construction forms a *whether-or-not* disjunctive question; we thus rule out the polar account.

First, crucially, a *tuki* question has a falling intonation, not a rising intonation, as shown in Figure 7 with the example *Tuki izua teza a cengelj?* ‘Is there any lunch left or not?’ taken from the *Taiwan-Austronesian Indigenous Words and Narrations*,³⁰ offered online by the Indigenous Languages Research and Development Center (2022, hereafter ILRDC).

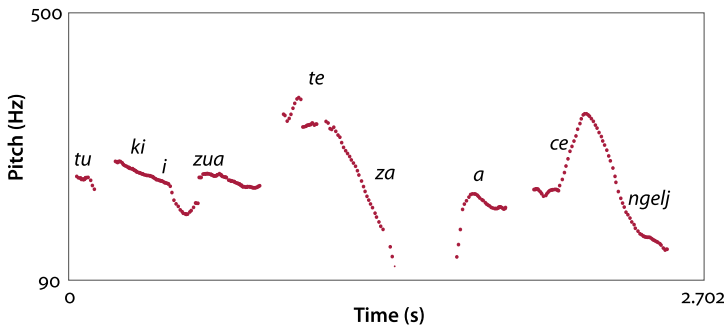


Figure 7. Intonation pattern of an S-initial *tuki* question

This is very different from the rising intonation in prosodic polar questions identified thus far. See Figure 8 for an example of a question tag with a rising intonation: *Itjai zuua zuua dri?* ‘At the place over there, right?’ (Chang 2006: 272)

The evidence available indicates two facts: *tuki* does create a question, but it is not an intonation polar question. These two facts point to two viable accounts: *tuki* questions are either morphosyntactic polar questions or in fact *whether-or-not* disjunctive questions. This kind of disjunctive question is different from polar questions semantically and syntactically but is similar pragmatically. Thus, *tuki* is a disjunctive interrogative element.

30. The *Taiwan-Austronesian Indigenous Words and Narrations* is an online corpus website meant for educational purposes, and thus differs in essence from the linguistic data cited from the other studies.

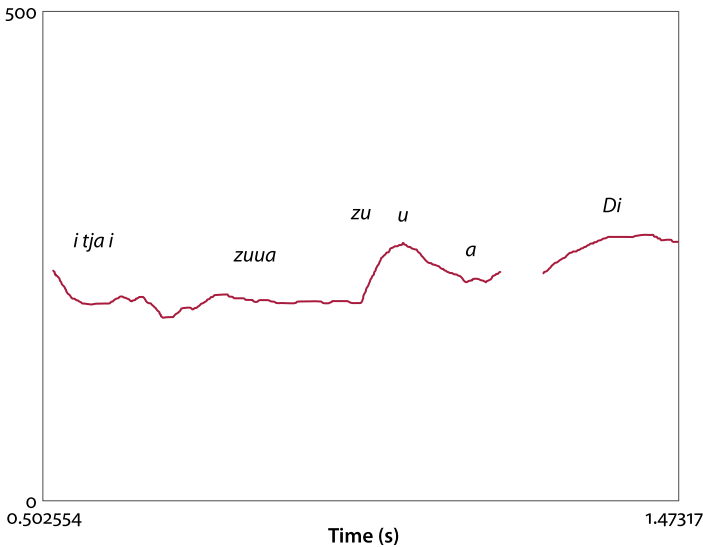


Figure 8. Intonation pattern of a prosodic S-final polar tag

We now put this analysis to test. Huang, Li & Li (2009), Hsiao & Her (2021), and Her, Che & Bodomo (2022) all observe that polar questions do not have indirect counterparts. As seen in (19a), a question with a tag cannot serve as an indirect question, nor can a prosodic polar question, as in (19b). However, an indirect question with an S-initial *tuki* is well-formed, as in (20), suggesting that the second account is more plausible.

- (19) a. *Ini=ka=aken a kemeljang tu ma-leva=sun dri.
 NEG1=NEG2=1SG.NOM LIN know COMP AV-happy=2SG.NOM tag
 Intended: ‘I do not know whether you are happy.’
- b. *Ini=ka=aken a kemeljang tu ma-leva=sun. (Rising)
 NEG1=NEG2=1SG.NOM LIN know COMP AV-happy=2SG.NOM
 Intended: ‘I do not know whether you are happy.’
- (20) Ini=ka=aken a kemeljang tu tuki
 NEG1=NEG2=1SG.NOM LIN know COMP whether.or.not
 ma-leva=sun.
 AV-happy=2SG.NOM
 ‘I do not know whether or not you are happy.’

A similar restriction is seen in Isbukun Bunun, another Formosan language. Like Paiwan *tuki*, Isbukun Bunun *adu/au* also appears in disjunctive interrogatives; see (21) for example.

- (21) Adu/au=ta~tangis a 'isuu a 'uvaaz=a mais hanian?
 ADU/AU=AV.CRY~RED NOM 2SG.NOM LIN child=DET.NNOM during day
 'Is your child crying during the day or not?' (Falling)
 (Huang & Shih 2018: 167)

It can also form indirect questions, while the indirect reading of questions formed with the S-final regular question particle *ha* is not viable.³¹ Compare (22a) and (22b).

- (22) a. As=ik haiap tu adu=na-masipul a Subali mas ahil=tan
 want=1SG.NOM know COM ADU=FUT-read NOM PN OBL book=DET
 kutun.
 tomorrow
 'I want to know whether Subali will read the book or not.' (ILRDC 2022)
- b. *As=ik haiap tu na-masipul a Subali mas ahil=tan
 want=1SG.NOM know COMP FUT-read NOM PN OBL book=DET
 kutun ha.
 tomorrow QP
 Intended: 'I want to know whether Subali will read the book or not.'

This cross-linguistic evidence suggests that *tuki* questions are not polar questions and that *tuki* should not be regarded as a polar question particle.

In addition, it has been found that questions of different types can be sensitive to the kind of adverbs they take. For example, Law (2006) suggests that some adverbials are exclusive to certain types of questions; Huang, Li & Li (2009: 237) and Xu (2012) also observe that the Mandarin adverb *nándào* 'don't tell me' can only appear in polar questions, while *dàodǐ* 'after all' can only appear in non-polar questions, namely, disjunctive and *wh*-questions. Her, Che & Bodomo (2022) explain that the semantics of *nándào* 'don't tell me' requires that the nature of the question be a single proposition, which is to be (dis)confirmed. On the flip side, *dàodǐ* 'after all' denotes a set of two or more propositions for the interlocutor to choose from. Such a distinction of adverbs is not seen in Paiwan. Specifically, though Paiwan does have an adverbial conveying the meaning of 'after all,' there is no adverbial exclusive to (intonational) polar questions. This suggests that Paiwan does not have morphosyntactically formed polar questions. All the evidence presented regarding *tuki*, including its intonation, embeddability, and lack of adverbial distinction for polar questions and disjunctive/*wh*- questions, leads to the conclusion that *tuki* questions are not polar questions but disjunctive ques-

31. The grammaticality test was done by a male Bunun informant from Hunhungaz, who was in his 20s.

tions. Our analysis therefore supports the finding of Chang (2017), where a second function of *tuki* meaning ‘whether or not’ is identified.

After placing previous putative question particles as either tags, declarative particles, interjections, or disjunctive elements, we can conclude that Paiwan forms polar questions with intonation only. Lou (2013) surveys the polar questions of 138 languages, including some Formosan languages, and identifies a group of languages that use phonological prosody as the sole means to form polar questions. These are called intonation interrogative only (IIO) languages. A hierarchy of IIO usage is proposed, as in (23), where the highest ranking IIO languages never combine intonation strategy with other morphosyntactic strategies, e.g., polar question particles, verb inflection or inversion, and the second highest sometimes use intonation with other formal strategies.

- (23) IIO in complementary distribution with other strategies > IIO (common > less common) > Distinctive intonation and others strategies > No distinctive intonation

Following this classification, Paiwan is one of the highest ranking IIO languages, since it uses only prosodic variation and no other means to form polar questions.³² In fact, Paiwan does not seem to have morphosyntactic polar questions at all. This view is held by Egli (1990), who insists that Paiwan only has intonation polar questions. Huang et al. (1999), in a survey of seven Formosan languages, find that they may form polar questions via two means, i.e., intonational and lexical/morphological devices, and that Paiwan and Tsou only use prosodical means to form polar questions. These findings further support the view that none of the previously discussed items are polar question particles.

3.1.4 Summary of polar questions in Paiwan

Various putative polar particles have been proposed in the literature and several additional candidates were found in the data we collected. However, upon careful examination, none is a polar interrogative particle. It turns out that (*ui*) *pai*, (*ui*) *dri*, *na*, and *ui lja* are question tags when pronounced with a rising intonation. On the other side, *a/a-a* is a non-interrogative interjection with an emphasis on the speaker’s tone, which is applicable to all questions. As for *ayau*, it is a declarative

32. It should be noted that while Paiwan uses only intonation to form polar questions, other languages may employ different strategies. For example, while both American English and British English may use subject-auxiliary inversion and/or intonation, the intonations used may be different between the two dialects (Geluykens 1988). While Mandarin uses polar particles and/or intonation, Xiang has no polar questions at all (Her, Che & Bodomo 2022).

or exclamative particle that denotes a strong presupposition. Finally, questions led by S-initial disjunctive elements *tuki*, *aki*, *ki*, and *tui* are not polar questions.

Therefore, to conclude, we concur with Huang et al.'s (1999: 641) insightful finding that the only means in Paiwan to form a polar question is to have a pitch accent on the last syllable of the last word.

- (24) a. Ti Palang³³ timadju. (Falling)
 NOM PN 3SG.NOM
 'He is Palang.' (Huang et al. 1999: 641)
- b. Ti Palang timadju? (Rising)
 NOM PN 3SG.NOM
 'Is he Palang?' (Huang et al. 1999: 642)

Thus, whether the final word is a putative polar particle or not is entirely irrelevant, as the rising intonation alone triggers the polar interrogative semantics.

- (25) a. Ti Palang timadju pai. (Falling)
 NOM PN 3SG.NOM PAI
 'He is Palang, yes.'
- b. Ti Palang timadju pai? (Rising)
 NOM PN 3SG.NOM PAI
 'He is Palang, right?'

Hence, there are also no syntactic means such as the subject-verb inversion in English to form polar questions in Paiwan. This is in fact not uncommon typologically. Huang et al. (1999: 641) cite Tsou as another example among Formosan languages. In Dryer's (2013) survey of 955 languages, 173, or some 18%, have only intonational polar questions and do not employ lexical or morphosyntactic means.

3.2 Disjunctive questions in Paiwan

We now turn to disjunctive questions. In Section 3.2.1, we offer further evidence that the S-initial interrogative element *tuki* and its variants form disjunctive questions. However, importantly, we argue that two forms of *tuki* should be recognized. One is a disjunctive interrogative element. This *tuki* is reminiscent of the second function of *tuki* 'whether or not,' proposed in Chang (2017). This *tuki* is similar to Mandarin *shifǒu* and English *whether or not* when it occurs sentence-initially and is followed by a declarative sentence. The other *tuki* occurs

33. In the original text, it is *palan*. We follow the orthography proposed by the Ministry of Education, and capitalize the first letter of a person's name.

in *wh*-questions, where it serves as a sentential adverbial similar to English *after all* and Mandarin *dàodǐ*. In Section 3.2.2, we reject the conventional putative disjunctive *manu* as a disjunctive conjunction and argue for a covert disjunctive interrogative conjunction that conjoins the alternatives to form disjunctive questions in Paiwan. In Section 3.2.3 we discuss the proper status of *manu* as an adverbial³⁴ and its shared properties with the adverbial *tuki*.

3.2.1 Disjunctive questions with S-initial disjunctive interrogative elements

Recall that a declarative sentence can be turned into a question with the addition of the S-initial elements *tuki*, *aki*, *ki*, and *tui*; compare (26), and (27).

- (26) Ma-leva=sun.
 AV-happy=2SG.NOM
 ‘You are happy.’
- (27) Tuki/aki/ki/tui ma-leva=sun?
 QP/QP/QP/QP AV-happy=2SG.NOM
 ‘Are you happy or not?’

We demonstrated in Section 3.1 that such a question is unlike an intonation polar question and in fact behaves like a disjunctive question. Given the fact that questions like (27) anticipate *yes* or *no* as answers, the only remaining logical explanation is that they are disjunctive questions due to *tuki/aki/ki/tui*. In this case, *tuki/aki/ki/tui* can be translated as ‘whether or not’ in English, except that *whether or not* cannot appear in a matrix clause. Paiwan *tuki* is therefore like Mandarin *shìfǒu* ‘whether or not.’ Mandarin *shìfǒu* appears after the subject canonically but also S-initially in a more literary style, as in (28a) and (28b), respectively, both with the optional particle *ne*. They are thus unlike polar questions, which require the particle *ma*, as in (29).

- (28) a. Nǐ shìfǒu kuàilè (ne)?
 you whether.or.not happy CQP
 ‘Are you happy or not?’
 b. Shìfǒu nǐ kuàilè (ne)?
 whether.or.not you happy CQP
 ‘Are you happy or not?’
- (29) Nǐ kuàilè ma?
 you happy PQP
 ‘Are you happy?’

34. As mentioned, the existence of adverbs in Formosan languages is disputed. We therefore refrain from the term *adverb*.

The Paiwan and Mandarin examples, (27) and (28), are thus very much alike, where the two alternatives put forth are two identical propositions with opposite polarity. Note that a polar question puts forth a single proposition and seeks agreement or confirmation. The difference is subtle but crucial, as the two types of questions behave drastically differently as we have seen in Mandarin as well as in Paiwan.

However, a very interesting fact regarding *tuki* is that it can appear twice at the beginning of a question, as shown in (30), where the % sign indicates that some speakers accept it to be well-formed but others do not. We thus propose that *tuki* is a homophone of two lexical items with different meanings: a disjunctive interrogative element meaning ‘whether or not’ and an adverbial meaning ‘after all; on earth.’

- (30) (%Tuki) tuki ma-leva=sun?
 after.all whether.or.not AV-happy=2SG.NOM
 ‘After all, are you happy or not?’

Recall that in Mandarin the adverb *dàodǐ* ‘after all’ is only compatible with non-polar questions, that is, disjunctive and *wh*-questions. Similarly, the adverbial *tuki* meaning ‘after all’ in Paiwan can also appear in *wh*-questions, as in (31) and (32). Ferrell (1982) thus also treats this *tuki* as an adverbial meaning ‘after all’ and Chang (2006: 438) similarly glosses it as ‘on earth.’

- (31) (Tuki) se-nema?
 after.all belong-what
 ‘After all, where is he from?’
- (32) (Aki) uri tja=kuda-in a icu?
 on.earth FUT 1PL.GEN=do.what-GV NOM.CM this
 ‘After all, what will we do about this?’

This analysis is also reminiscent of M. C.-y. Chang’s (2010) analysis of the previously mentioned Isbukun Bunun *adu*, where *adu* is treated as an irrealis adverbial.

3.2.2 Disjunctive questions with disjunctive conjunction

We now focus on disjunctive questions formed with the putative disjunctive conjunction *manu*. Recall the two Mandarin disjunctive conjunctions: the declarative *huòshì* and the interrogative *háishì*. Paiwan also has a declarative disjunctive conjunction *kata*. The question is whether *manu* is really a disjunctive interrogative conjunction like *háishì*. The accepted view in previous studies, such as Chang (2006: 307, 2018: 101), is that Paiwan disjunctive questions are formed with *manu*

in the conventional *A-or-B* form, as in (33). An additional pattern *or-A-or-B* is put forth in Chang (2000: 122), as in (34).

- (33) Ma-culja=sun manu ma-zeli=sun?³⁵
 AV-hungry=2SG.NOM or AV-tired=2SG.NOM
 ‘Are you hungry or are you tired?’
- (34) Manu ma-culja=sun manu ma-zeli=sun?
 or AV-hungry=2SG.NOM or AV-tired=2SG.NOM
 ‘Are you hungry or are you tired?’

However, *manu* actually enjoys much more freedom than previous studies have described. It can appear alone in front of the first disjunct only, as in (35), and the putative pattern is thus *or-A-B*. It can also not appear at all, as in (36), thus allowing the simple pattern of *A-B*. Consequently, all four logically available patterns of *A-not-B* disjunctive questions, shown schematically in Table 3, are attested.

- (35) Manu ma-culja=sun ma-zeli=sun?
 or AV-hungry=2SG.NOM AV-tired=2SG.NOM
 ‘Are you hungry or are you tired?’
- (36) Ma-culja=sun ma-zeli=sun?
 AV-hungry=2SG.NOM AV-tired=2SG.NOM
 ‘Are you hungry or are you tired?’

Table 3. Four attested patterns of *A-or-B* disjunctive questions

	<i>manu</i>	CONJ-1	<i>manu</i>	CONJ-2
1	<i>manu</i>	A	<i>manu</i>	B
2	–	A	<i>manu</i>	B
3	<i>manu</i>	A	–	B
4	–	A	–	B

The evidence presented above strongly suggests that the freely occurring optional *manu* is a non-essential element such as an adverbial in disjunctive questions, which are formed by a silent, or covert, disjunctive interrogative conjunction instead. This is shown in (37).

35. In the original text, these are *maculasun* and *mazeLisun*. We follow the orthography proposed by the Ministry of Education.

- (37) Ma-culja=sun Ø ma-zelji=sun?
 AV-hungry=2SG.NOM CONJ AV-tired=2SG.NOM
 'Are you hungry or are you tired?'

Phonological evidence from (37) supports this view, as both disjuncts in the question receive a rising intonation regardless of the presence and position of *manu*. One such example is shown in Figure 9 (from Chang 2006: 274), i.e., *Maculjasun manu mazelisun?* 'Are you hungry or are you tired?'. The silent *wh*-conjunction conjoins two phonologically formed polar questions and forms a disjunctive question.

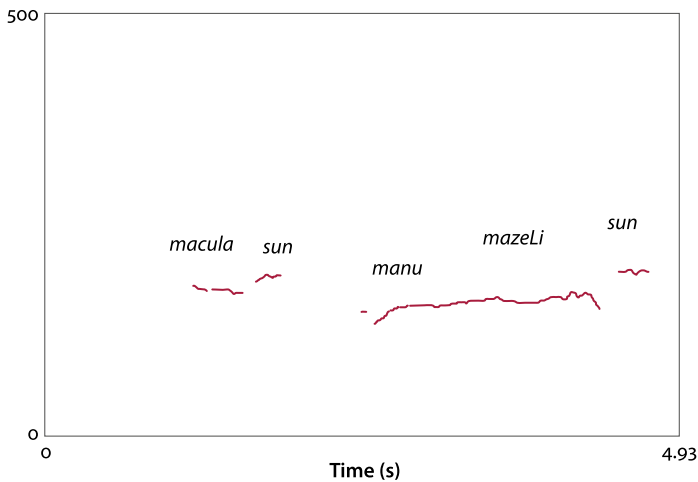


Figure 9. Intonation pattern of a disjunctive question (Chang 2006: 274)

Furthermore, we know (37) is a disjunctive question and not a polar question because it has an indirect question counterpart, as in (38). Recall that polar questions do not have indirect question counterparts.

- (38) Ini=ka=aken a kemeljang tu ma-culja=sun Ø
 NEG1=NEG2=1SG.NOM LIN know COMP AV-hungry=2SG.NOM CONJ
 ma-zeli=sun.
 AV-tired=2SG.NOM
 'I do not know whether you are hungry or tired.'

In short, the simplest account for the four *A-or-B* disjunctive question patterns is to treat them as variants of a simple underlying form [(*manu*) A OR (*manu*) B], where OR in capital letters indicates a silent element (cf. Her & Tsai 2015). We will discuss the proper status of *manu* in Section 3.2.3.

Another important fact overlooked by previous studies is the *A-not-A* form of disjunctive questions in Paiwan. Given the two disjuncts, *A* and *B*, in a disjunctive question, *B* of course can be *not-A*. Thus, if *A-or-B* is attested, then *A-or-not-A* should be attested as well. In most Chinese languages, such as Mandarin and Southern Min, *A-or-not-A* can be further reduced to *A-or-not*, with the second instance of *A* ellipsized. Given the four patterns in Table 3, the second disjunct *B* in each pattern entails two more variants, *not-A* and *not*. Logically, therefore, twelve patterns obtain, as shown in Table 4.

Table 4. Twelve possible patterns of *A-or-B* disjunctive questions

	<i>manu</i>	CONJ-1	<i>manu</i>	CONJ-2
1	<i>manu</i>	A	<i>manu</i>	B
2	<i>manu</i>	A	<i>manu</i>	<i>not-A</i>
3	<i>manu</i>	A	<i>manu</i>	<i>not</i>
1	–	A	<i>manu</i>	B
2	–	A	<i>manu</i>	<i>not-A</i>
3	–	A	<i>manu</i>	<i>not</i>
1	<i>manu</i>	A	–	B
2	<i>manu</i>	A	–	<i>not-A</i>
3	<i>manu</i>	A	–	<i>not</i>
1	–	A	–	B
2	–	A	–	<i>not-A</i>
3	–	A	–	<i>not</i>

Given the simple form of *A-or-B* disjunctive questions, [(*manu*) A OR (*manu*) B], the eight additional patterns of *A-not-A* disjunctive questions can likewise be reduced to a simple form [(*manu*) A OR (*manu*) *not(-A)*], as shown in (39).

- (39) (Manu) ma-culja=sun (manu) ini=ka(=sun a ma-culja)?
 MANU AV-hungry=2SG.NOM MANU NEG1=NEG2=2SG.NOM LIN AV-hungry
 ‘Are you hungry or are you not hungry?’

3.2.3 Proper status of *manu*

Having rejected *manu* as a disjunctive interrogative conjunction, we will now discuss its proper status. The first important fact to point out is that *manu* can easily appear in a declarative sentence, as in (40), bearing the meaning ‘in the end.’ Also, with a rising intonation, (40) can be a polar question, a scenario that is also

observed by Chang (2017), as in (41). Likewise, (41) can appear with a question tag like *pai*, as in (42).

- (40) Manu ma-leva=sun.
in.the.end AV-happy=2SG.NOM
'In the end, you are happy.'
- (41) Manu ma-leva=sun? (Rising)
in.the.end AV-happy=2SG.NOM
'In the end, are you happy?'
- (42) Manu ma-leva=sun pai?
in.the.end AV-happy=2SG.NOM QP
'In the end, you are happy, right?'

Moreover, *manu* can appear in *wh*-questions; two examples are given in (43) and (44). Thus, as expected, besides the *A-or-B* disjunctive questions discussed in Section 3.2.1, *manu* can also appear in disjunctive questions formed with the *wh*-element *tuki* 'whether or not,' as in (45).

- (43) Manu ta anema ma-leva=sun?
in.the.end OBL.CM what AV-happy=2SG.NOM
'In the end, for what are you happy?'
- (44) Manu ti-ima=sun?
in.the.end NOM.PS.SG-who=2SG.NOM
'In the end, who are you?'
- (45) Manu tuki ma-leva=sun?
in.the.end whether.or.not AV-happy=2SG.NOM
'In the end, are you happy or not?'

Manu thus behaves like an adverbial that appears freely in both declaratives and interrogatives and is reminiscent of the adverbial *tuki*. Recall the two forms of *tuki*: one is a disjunctive interrogative element, as in (45), and the other is an adverbial meaning 'after all,' which can only appear in non-polar questions. In contrast, *manu* as an adverbial with a similar meaning as the adverbial *tuki* can appear in declarative as well as interrogative sentences. This means that the adverbial *tuki* can replace *manu* in non-polar questions, *A-or-B* disjunctive questions included, as in (46).

- (46) (Tuki) ma-culja=sun (tuki) ma-zeli=sun?
after.all AV-hungry=2SG.NOM after.all AV-tired=2SG.NOM
'Are you hungry or are you tired?'

Interestingly, Isbukun Bunun also seems to support the analysis of a covert disjunctive interrogative conjunction and *tuki/manu* as adverbials. Huang & Shih (2018) mention that there is no overt *or* in Isbukun Bunun, just as we have concluded from the present Paiwan data. In addition, as mentioned, Isbukun Bunun *adu* is similar to Paiwan *tuki*, and optionally appears in front of each alternative in a disjunctive question, behaving like a free adverbial instead of a disjunctive interrogative element; see (47) from Huang & Shih (2018: 172).

- (47) (Adu)=’isuu tu tama saia adu=’isuu tu masnanava?³⁶
 ADU=2SG.NOM LIN father 3SG.NOM ADU=2SG.GEN LIN teacher
 ‘Is he your father or your teacher?’ (Huang & Shih 2018: 172)

This supports an adverbial analysis of *manu/tuki* in disjunctive interrogatives and suggests that the covert disjunctive interrogative element and interrogative adverbials may not be exclusive to Paiwan, but may be shared with other Formosan languages. Further investigation is needed to confirm this observation.

To summarize, two forms of *tuki* are identified, a disjunctive interrogative element conveying the meaning ‘whether or not’ and an adverbial conveying the meaning ‘after all.’ *Manu* in an A-*or*-B disjunctive question is an adverbial similar to the adverbial *tuki*, and the two disjuncts are conjoined by a silent disjunctive interrogative element.

3.2.4 Interim summary of the particles discussed

We have thus discussed the formation of polar and disjunctive questions in Paiwan and have in the process dismissed the interrogative status of some of the particles put forth in the literature. Table 5 below is a summary of the putative interrogative particles and lexical items thus far discussed and lists their status as recognized by previous studies and the status as recognized by this study.

Table 5. Sentence particles in Paiwan

Putative particles/ interrogative items	Status recognized in the literature	Status recognized in the current study
<i>dri</i>	Polar question particle (Chang 2006, Chang 2017)	Question tag

36. Note that *adu* is more restricted than the Paiwan *tuki* and *manu*. Huang & Shih (2018) observe that the second *adu* is indispensable. This may be because Isbukun Bunun does not apply a rising intonation in disjunctives, which makes the presence of *adu* as the indicator of interrogative attitude necessary, while in Paiwan disjunctives, a rising intonation is already indispensable, which makes the presence of *tuki/manu* less important.

Table 5. (continued)

Putative particles/ interrogative items	Status recognized in the literature	Status recognized in the current study
<i>pai</i>	Polar question particle (Chang 2006, Chang 2017)	Question tag
<i>ayau</i>	Polar question particle (Chang 2006)	Declarative particle
<i>na</i>	Polar question particle (Chang 2017)	Question tag
<i>ui lja</i>	Polar question particle (Chang 2017)	Question tag
<i>a</i>	Polar question particle (Chang 2017, Chang 2018)	Interjection of surprise
<i>manu</i>	Disjunctive interrogative conjunction 'or' (Chang 2006, 2018, Chang 2017) Adverbial meaning 'in the end' (Chang 2017)	Adverbial meaning 'in the end'
<i>tuki</i>	Disjunctive interrogative conjunction 'or' (Chang 2017) Adverbial meaning 'whether or not' (Chang 2017)	Adverbial meaning 'in the end' Disjunctive interrogative element 'whether or not'

3.3 Unifying disjunctive questions and *wh*-questions

So far, we have examined putative Paiwan polar questions and Paiwan disjunctive questions. We have also determined that the language has only intonation polar questions. In addition, the *tuki*-led questions that might be thought to be polar questions are in fact disjunctive questions like those led by *manu*, with disjunctive questions behaving rather differently from intonational polar questions. In this section, we look at *wh*-questions and demonstrate their similarities with disjunctive questions and their differences with intonational polar questions.

Firstly, the most obvious trait shared by Paiwan disjunctive questions and *wh*-questions is their embeddability. While Paiwan intonational polar questions cannot be embedded as an indirect clause, both disjunctive questions and *wh*-questions can, as in (48).

- (48) a. Ini=ka=aken a kemeljang tu ti-ima=sun.
 NEG1=NEG2=1SG.NOM LIN know COMP NOM.PS.SG-who=2SG.NOM
 'I do not know who you are.'

- b. Ini=ka=aken a kemeljang tu ma-culja=sun manu
 NEG1=NEG2=1SG.NOM LIN know COMP AV-hungry=2SG.NOM or
 ma-zeli=sun.
 AV-tired=2SG.NOM
 ‘I do not know whether you are hungry or tired.’
- c. Ini=ka=aken a kemeljang tu tuki
 NEG1=NEG2=1SG.NOM LIN know COMP whether.or.not
 ma-leva=sun.
 AV-happy=2SG.NOM
 ‘I do not know whether or not you are happy.’

Secondly, unlike intonational polar questions, Paiwan disjunctive questions and *wh*-questions are both compatible with the adverbial *tuki* ‘after all,’ as in (49).

- (49) a. (%Tuki) tuki ma-leva=sun?
 after.all whether.or.not AV-happy=2SG.NOM
 ‘After all, are you happy or not?’
- b. Tuki ma-culja=sun tuki ma-zeli=sun?
 after.all AV-hungry=2SG.NOM after.all AV-tired=2SG.NOM
 ‘After all, are you hungry or are you tired?’
- c. Tuki uri tja=kuda-in a icu?
 after.all FUT 1PL.GEN=do.what-GV NOM.CM this
 ‘After all, what are we going to do about this?’

These data suggest strongly that polar questions are fundamentally different from disjunctive and *wh*-questions, and that the latter two should be seen as two sub-categories under one major category. This is different from the other major category, polar questions. This two-way classification can be further supported by the semantic differences of polar questions with disjunctive questions and *wh*-questions. In both van Rooij & Safarova (2003) and Her, Che & Bodomo (2022), disjunctive questions are regarded as a special case of *wh*-questions semantically. Both provide the interlocutor with a set of options to choose from, the only difference being that *wh*-questions may or may not list all the options and that the set of options may be open-ended, while disjunctive questions usually overtly pronounce the options and have a closed range of possible answers. Polar questions, however, put forth a proposition and seek (dis)confirmation (Biezma & Rawlins 2012, Her, Che & Bodomo 2022).

In Paiwan, disjunctive questions and *wh*-questions as a single major category can be further supported by seeing both the disjunctive interrogative element *tuki* and the silent disjunctive interrogative conjunction OR as disjunctive *wh*-elements. Constituent questions thus all require a *wh*-element, while polar

questions do not. The conventional three-way distinction can thus be reduced to a more revealing two-way distinction, as shown in Figure 10.

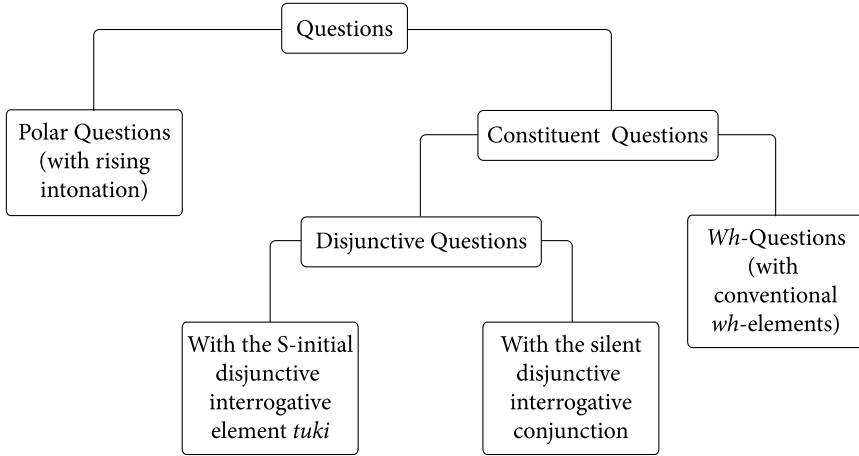


Figure 10. Taxonomy of questions in Paiwan

4. Conclusions

In this paper, we have critically examined previous accounts for the three conventional types of questions in Paiwan: polar, disjunctive, and *wh*-questions. We first argued that polar questions in Paiwan are formed by phonological means only, that is, a rising intonation. All the alleged sentence-final polar interrogative particles in previous studies are either polar question tags with a rising intonation or non-interrogative interjection particles. The alleged sentence-initial polar interrogative particle *tuki* is, in fact, a disjunctive interrogative element with the meaning ‘whether or not.’ On the other hand, *manu*, previously recognized as a disjunctive conjunction, turns out to be an emphatic adverbial that can occur in all types of questions as well as declarative sentences. A-*or*-B and A-*not*-A disjunctive questions in Paiwan must thus contain a silent disjunctive interrogative conjunction OR. Based on these findings, we then demonstrated that the shared similarities overlooked previously between disjunctive questions and *wh*-questions suggest that they are two subcategories of a single category of constituent questions. Consequently, the conventional three-way distinction can be reduced to a simpler and more revealing two-way distinction of polar versus constituent questions.

Funding

One-Soon Her acknowledges the support from the following grants awarded by Taiwan's National Science and Technology Council (NSTC): 108-2410-H-029-062-MY3 and 111-2410-H-029-009-MY3.


Acknowledgements





The authors would like to thank the editors and the anonymous reviewers for their many constructive comments and suggestions, which helped to improve the paper greatly. However, we are solely responsible for any remaining errors. We are also grateful to our Paiwan informants for their patient support; they are Chin-Sheng Chang (張金生), Ciyamare Lra-lalawnga, Yedda Palemeq, Hung-Ming Po (波宏明), Chia-Hao Tai (戴佳豪), and Ai-Lien Tsai (蔡愛蓮).

List of abbreviations




AV	actor voice	NEG	negator
CM	for common noun	NOM	nominative
COM	completive aspect	NNOM	non-nominative
COMOP	complementizer	OBL	oblique
CONJ	conjunction	PEF	perfect tense
COP	copula	PL	plural
CQP	constituent question particle	PN	person name
DET	determiner	PQP	polar question particle
DIST	distributive	PRO	progressive
FUT	future tense	PS	for person
GEN	genitive	QP	question particle
GV	goal voice	RED	reduplication
LIN	linker	S	sentence
LOC	locative	SG	singular
LV	locative voice		

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Publication history

Date received: 29 March 2023
Date revised: 19 August 2023
Date accepted: 29 January 2024