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ทำไมผู้เรียนชาวไทยฟังภาษาญี่ปุ่นผิด ‘nan-nichi’ เป็น ‘nan-ji’ : การศึกษาเปรียบเทียบเสียงพูดภาษาไทยและภาษาญี่ปุ่น

บทคัดย่อ

การศึกษาครั้งนี้ เพื่อศึกษาวิธีการเปรียบเทียบและตรวจสอบถึงสาเหตุของการฟัง คำว่า 'nan-nichi' (วันที่อะไร) ของผู้เรียนคิดว่าเป็น 'nan-ji' (กี่โมง) ในผู้เรียนชาวไทยที่เรียนภาษาญี่ปุ่นของสถานศึกษาระดับอุดมศึกษาแห่งหนึ่ง ซึ่งมีความผิดพลาดในการฟังบ่อยครั้ง เหตุใดผู้เรียนจึงพบว่าการแยกคำสองคำนี้เป็นเรื่องยากและเพื่อหลีกเลี่ยงการสื่อสารที่ผิดพลาดของผู้เรียน ผู้วิจัยได้ตั้งสมมติฐานเพื่อชี้แจงประเด็นนี้ โดยสันนิษฐานว่า ตามปกติแล้วเสียงธนิตจะมีการปล่อยลม chi /tɕʰ/ ออกมา อย่างไรก็ตาม ถ้าเสียงธนิต/tɕi/อยู่ในตำแหน่งระหว่างเสียงสระของคำทั่วไป เสียงธนิตจะถูกลดการปล่อยลมและเสียง [tɕi] ทำให้ผู้เรียนชาวไทยเข้าใจว่าเป็นเสียงสิถิล ji ผลการศึกษานี้คือ 1) เสียงธนิตจะถูกลดการปล่อยลมและเสียง ทำให้ผู้เรียนชาวไทยเข้าใจว่าเป็นเสียงสิถิล 2) เสียงธนิตและเสียงสิถิลเป็นหน่วยเสียงเดียวกันสำหรับชาวญี่ปุ่น แต่เป็นเสียงที่แตกต่างกันสำหรับผู้เรียนชาวไทย

คำ **สำคัญ**

การเปลี่ยนเสียง เสียงธนิต เสียงสิถิล หน่วยเสียงย่อย ผู้เรียนชาวไทย

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Why Thai learners of Japanese language misheard ‘nan-nichi’ as ‘nan-ji’? : A contrastive study of Thai and Japanese speech sounds

Abstract

This is a contrastive study. The objective of this study was to clarify the cause of learners' mishearing of ‘nan-nichi’ (what date) as ‘nan-ji’ (what time). The Japanese language learners at the undergraduate level make this sort of mistake frequently. Why do the learners find it difficult to distinguish these two different words? To avoid learners’ miscommunication, the author made a hypothesis: the plosive sounds chi /tɕʰ/ reduce air release /tɕi/ in intervocalic position of a word and the sounds are understood ji as unaspirated sounds for Thai. The findings of this study were as follows: 1) plosive sounds reduce the air in intervocalic position and learners understand it as unaspirated sounds. 2) Aspirated sounds and unaspirated sounds are the same phoneme for Japanese; however, they are different sounds and different phonemes for Thai learners. Thus the reduced plosive should be an allophone for Thai learners.

Key words

sound change, aspirated and unaspirated sound, allophone, Thai learners

1. Introduction

In this study, the author examined the causes of the mistaken hearing of the sound 'nan-nichi' as 'nan-ji' by Japanese language learners whose mother tongue is Thai. Thirty students of the second year Japanese major students in Panyapiwat Institute of Management made this sort of mishearing frequently. Teacher asked students 'nan-nichi'? The students looked at the watch and answered the time. The author wondered why the students misheard 'chi' as 'ji'. This sort of mishearing has occurred several times before. However, there is no research focusing on the mishearing of 'ji' as 'chi'.

Thus, the author has made a hypothesis. The hypothesis is as follows. There are allophones for Thai students. This allophone is the cause of difficulty of listening for students and it interferes with students' listening. The allophone causes mishearing. They are: (a) Japanese plosive sounds weaken in the intervocalic position of a word; (b) The weakened plosive sounds reduce the amount of air release; (c) The plosive sounds with reduced air are understood as unaspirated sounds for Thai learners. The findings are that, aspirated sound and unaspirated sound are different phonemes for Thai students. These sounds are distinctive features in the Thai language. However, in the Japanese language, aspirated sounds and unaspirated sounds are not distinctive features. It does not change the meaning of a word. Thus these sounds are allophones.

These findings of allophones, and how aspirated sounds change into unaspirated sounds, are beneficial not only for Thai learners of Japanese language, but also for teachers teaching Japanese language; both Thai natives and Japanese natives, because not many studies have been conducted on this issue in the Thai language, to my best knowledge.

Again, in other words, there are two causes of mishearing in this case. One is the change in the Japanese sound, or allophone. And the other is the interference from the learners' native language concerning these altered sounds.

2 Overview of listening problem

1) The cause of the listening problem is the difference of the phonological system and the sound change of the L2 language. The Chinese and Korean languages have aspirated – unaspirated sound systems. However, the Japanese language has voiced – voiceless sound system. For Japanese, the vibration of vocal cords is the distinctive feature. The amount of air release is irrelevant. Nonetheless, in the Chinese and Korean languages, being aspirated – unaspirated is the distinctive feature. The amount of air is the distinctive feature. Air reduced Japanese plosive sounds are understood as a different sound and meaning for the Chinese and Korean.

The first is the problem of listening. The cause of mishearing is sound change in the target

language. Takahashi (2005), O'ki, Maeda, and Oka (2016), Igashima, Sakai and Hiragata (2001) studied the sound change in the Japanese language. Takahashi and O'ki insisted the sound changes of a word, for instance, assimilation, elision, intrusion are the cause of mishearing. Igashima et al. researched Japanese contracted words. That is, the Japanese language learners listened to contracted words and answered the original form of the words. The contracted words are, for instance, 'いちんち', 'そんとき', 'どんぐらい' and others. They concluded that sound changes like in contracted word are the causes of listening problems.

Zou, Kashiwagi, Otsuki and Kang (2012) concluded the difference of phonological system between L1 and L2 is the cause of listening problems. For instance, in Japanese phoneme, there are no [/θ/] and [/ð/] sounds, thus Japanese people misunderstood and mispronounced them as /s/, /z/ respectively. Further, /r/ and /l/ phonemes make Japanese learners confused, since there is no /l/ sound in the Japanese language.

Jo (2016) reported that the Korean phonological system is not the same with the Japanese phonological system. The Japanese language has voiced - voiceless sounds contrast and the Korean language has aspirated - unaspirated sounds contrast. He researched targeting forty Korean students to collect listening data. For instance, [tɕi] sound in 'ちがい' and [dʑi] sound in 'じむしょ' and other words. The result showed that the difference of the phonological systems is the cause of listening difficulty. Furthermore, Lee (2013) and Utsugu (2009) insisted the same results indicate that the difference of phonological system between L1 and L2 is the cause of the listening problems.

Jin (2019) insisted that the difference of phonological systems have caused listening problems. According to Jin, the Chinese language phonological system has aspirated - unaspirated sounds contrasts as distinctive features. Nonetheless, in the Japanese language, voiced-voiceless sounds contrasts are distinctive features.

Zhu (2009) researched the pronunciation of the Japanese language learners in China. They are introductory level students. The sampling words are as follows: 'sakasa', 'watashi', 'dantai' and 'tandai'. She reported that the students repeated the words as 'sagasa', 'wadashi', 'tantai', and 'dandai', respectively. From this result, she concluded that plosive sounds in the intervocalic position sound as unaspirated sounds for Chinese learners.

2) In the case of Japanese, when pronouncing the plosive sound at the initial position, the air is released. However, plosive sounds in intervocalic position are pronounced as air-reduced sounds. Thus, Chinese and Korean understand that the sound is not plosive but another phoneme; however it is the same phoneme for Japanese. This is the cause of listening problems for Chinese and Korean

learners. Again, the air-reduced phoneme is the same phoneme for Japanese, nonetheless different phonemes for Chinese and Korean.

Jin (2019) researched the pronunciation of Japanese using VOT (Voice Onset Time). The six Japanese people are mostly from Osaka and in their 20's and 30's. Her objective was to compare the plosive sound in the initial position and in the intervocalic position of words. The plosive sounds are voiceless /p/, /t/, /k/ and voiced /b/, /d/, /ɡ/. The sampling words are 'papa', 'tata', 'kaka', 'baba', 'dada', and 'gaga'. The result was that both in initial position and intervocalic position, air release is reduced compared to Chinese sounds. Further, in intervocalic position, the voiced plosive sounds are pronounced as lenition sounds.

At the same time, it is proved that native Japanese speakers pronounce plosive sounds in two ways: aspirated and unaspirated. As a result, the air-reduced sounds are the cause of mishearing for Thai learners.

Yoshihiro (2004) and Hoshino (2002) researched the Chinese pronunciation of the Japanese students who are learning the Chinese language. Yoshihiro researched four Chinese students and four Japanese students. The length of stay of Chinese students in Japan ranges from three years up to ten years. And the Japanese students are 2nd year of the university. The sampling words are [t'a], [ta], [p'a], [pa], [k'a], and [ka]. The research was to study aspirated sounds and unaspirated sounds. Yoshihiro concluded that the pronunciation of the Japanese students is problematic. Chinese aspirated sounds do not have enough air release and the students pronounced Japanese voiced sounds instead of unaspirated sounds. Thus for Japanese, pronouncing Chinese aspirated and unaspirated sounds is not clear. Hoshino conducted the same result, as well.

3) This materialization of Japanese plosive sounds is 'allophone'. This finding of 'allophone' is useful knowledge not only for Japanese language teachers, but also for Japanese language learners.

Lin (2001), additionally, proposed pronunciation classes to apply allophones. For Chinese students, it is still problematic to listen and pronounce voiced sounds and voiceless sounds. They are fricative allophones: (e.g. /b/⇒ [β], /d/⇒ [ð] and /ɡ/⇒ [ɣ - ŋ]).

4) Not many studies have been conducted on this 'chi' and 'ji' issue of the Thai language, to my best knowledge. According to Banchongmanee, Wutthichamnong, Tomorakunand Maruyama (2009), and Chusri (2020), the Thai language has a voiced and voiceless sound system, and the voiceless sounds have aspirated and unaspirated sounds. However, it is different from the Chinese language that Thai language has voiced and voiceless sound system. In the voiceless sound, there is aspirated –unaspirated sound system.

Japanese plosive sounds change into unaspirated sounds. This is proved and described

in the document 'Announcement of the Prime Minister's office (2561, Buddhist calendar)' promulgated by the Thai government. Thus for Thai, the air-reduced Japanese plosive sounds are understood as unaspirated sounds or different phonemes according to the Thai phonological system.

In the Documents above, (2561, p. 70), there is the guidance to transcribe Japanese to Thai. According to this document, 'ch' is preferred at the initial position, however, 'j' or 'จ' is preferred at the other position of a word. The reason is that at the other position of a word, the air release is reduced. For instance, Minchō, konnichiwa, and ichirō are transcribed as Minjō konnijiwa Ijirō, respectively.

3 Transcriptions from speech sounds

The perception of sounds is reflected in letters. How do the Thai people perceive intervocalic 'chi' sound? This is one of the way to look for the example in the written letters.

According to previous studies of listening problems, there are 1) sound change of the target language, 2) the difference of phonological system for learners in both L1 and L2. This difference interferes learners' listening.

According to Slayden (2009, p.2), Thai has voicing - aspiration contrast: /p p^h b/ and /t^h d/. On the other hand, according to Kariyasu, Ota and Snyder (2007, p.134), Japanese is p/b, t/d, k/g system. That is voiceless and voiced contrast.

Furthermore, it needs to explain the Romanization and pronunciation of「ち」compared with Thai consonants.

In the Japanese language, there are two Romanization styles of Japanese「ち」. One is 'Kunrei' style which is to transcribe the Japanese letters into the Latin alphabet.「ち」is transcribed as 'ti' in 'Kunrei' style. Thus「た、ち、つ、て、と」are transcribed as 'ta, ti, tu, te, and to', respectively.

Another transcription is 'chi'. This style is called 'Hebon' style or 'Hepburn Romanization'. Thus「た、ち、つ、て、と」are transcribed as 'ta, chi, tsu, te, and to', respectively. In this study, the author uses 'chi' for「ち」. The phoneme /t/ is a plosive sound, however, 'chi' is a slightly palatalized sound. It is an affricative sound. 'Chi' sound is between plosive and fricative sound. Thus, affricative「ち」is plosive and fricative. It is [tɕi] in pronunciation, however, the sound materialized in aspirated sound /$tɕ^h$/ at the initial position of a word. And air is reduced [tɕi] in intervocalic position.

On the other hand, in the Thai language, according to Slayden (2009 p.2), aspiration contrasts are in voiceless velar /k k^h/ and /tɕ $tɕ^h$/ as below.

Table 1. Thai consonants

	Bitabial	Labiodental	Alveolar	Post-Alveolar	Palatal	Velar	Glotial
Plosive	p p^h b		t t^h d			k k^h	
Nasal	m		n			n	
Trill							
Fricative		f	s				h
Affrice				tɕ $tɕ^h$			
Approximant					j		
Lateral Approximant			l				

Cited from Slayden (2009, p.2)

Why do Thai learners of Japanese language mishear 'chi' [$tɕ^hi$] as 'ji' [tɕi]? The answer of this question is that native Japanese speakers pronounce the plosive sounds as unaspirated sounds. The aspirated sound and unaspirated sounds are the same phoneme for Japanese, because the Japanese language has voiced – voiceless contrast phonological system. However, according to learners' phonological system, aspirated or unaspirated sounds are distinctive features. They are different phonemes and they are concerned with changing the meaning of a word.

This is proved by Yoshihiro (2004). According to her research, Japanese pronounces a plosive sound as an air release-reduced sound. It is the same as unaspirated sounds. The learners listen to the sounds according to their phonological system. That is why Thai learners mishear 'nan-nichi' as 'nan-ji'. In other words, unintentionally, the Japanese teacher pronounces unaspirated sounds.

apanese pronounces unaspirated sounds and learners understand the sound to be unaspirated. Learners listen and understand and write down the sound as it is. There are some examples of transcribed data.

Two photos below are examples of 'chi' written in 'ji'

1) At the top of the photo, it is written 'presentation – Aiji – PowerPoint'.

Aiji' was transcribed from ' 愛知Aichi' ⇒ 'Aiji'. Native Japanese pronounce 'Aichi' as 'Aiji'. Thus it was perceived and transcribed as 'Aiji' by Thai learners.

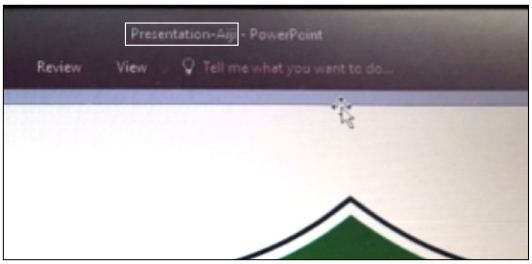
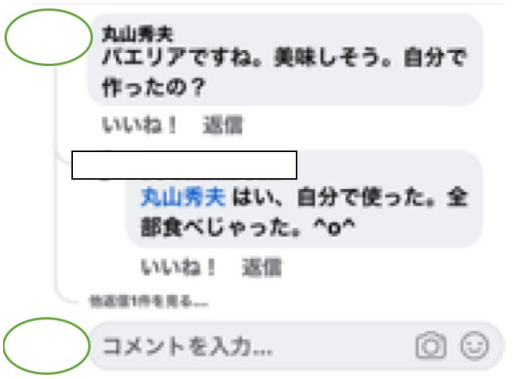


Photo 1. Taken by the author on 2019, September 6.

2) 「食べじゃった」should be「食べちゃった」. Native Japanese pronounce unaspirated sounds. Thus, the replier wrote 'tabejatta', an unaspirated sound, instead of with a plosive sound like 'tabechatta'.



— パエリアですね。美味しそう。自分で作ったの？

— はい、自分で*使った（作った）。 全部食べじゃった。

Photo 2. Personal comments: screen shot on 2021, July 31, from social media (Facebook)

3) There are two more example photos of mishearings that materialized in transcription.

Photo 3 「もち」transcribed as 'โมจิ'

The following two photos are the additional examples of 'chi' ⇒ 'ji'. The photos are advertisement of Thai confectionary sweets.

The third photo below is 「もち (mochi)」, however, in Thai, 'ji (จิ)' is used instead of 'chi'.

ที่มา https://shortest.link/2h3V

The fourth photo is of the same thing but in a different design. The letter 'MOCHI' is transcribed as 'โมจิ'.

ที่มา https://shortest.link/2h3R

These two transcriptions in upper photos are corresponding to the Guidance of announcement of the Thai government. That is in intervocalic positions that plosive 'chi' is pronounced and transcribed as unaspirated 'ji'.

4 Discussions

4.1 The procedure of mishearing for Thai learners

The sound 「ち」'chi' is a voiceless alveopalatal plosive consonant, /ci/ [tɕi], while 「じ」'ji' is a voiced alveopalatal plosive sound, /zi/ [ʑi].

Why do the learners mistakenly hear 'nan-nichi' (what day) as 'nan-ji' (what time)? This is because the learners hear the teachers'「ち」'chi' /ci/ [tɕi] as「じ」'ji' /zi/ [ʑi]. Japanese teachers unintentionally pronounce 「ち」 'chi' as 「じ」 'ji'. The materialized sound is unaspirated 'จ' [tɕi]. The learners understand it as an approximate sound 'ji' /zi/ according to the Thai phonology.

Furthermore, the learners possibly consider that the 'chi' sound is an aspirated consonant even if it is placed either at the initial position or in the intervocalic position, since 'chi'/ci/ [tɕi] is a plosive sound. Crystal (2000, p.137) defined plosives as the consonants that involve compression and release of air. Thus the learners are likely to think that 'chi'/ci/ [tɕi] should be an aspirated consonant even in the intervocalic position. Actually, when Japanese pronounce 'chi' at the initial position of a word, it is pronounced as an air-released sound 'chi'/ci/ [tɕʰi]. However, in the intervocalic position of a word, it is pronounced as air-reduced [tɕi]. And then the sound is recognized as an unaspirated sound by Thai learners. For learners, unaspirated 'chi'/ci/ [tɕi] is not「ち」because its air is reduced. 「ち」has to be pronounced with air release; otherwise it is not 「ち」. Otherwise, learners understand unaspirated 「ち」'chi'/ci/ [tɕi] as the approximate sound 'ji' /zi/ [ʑi].

4.2 [tɕhi] and [tɕi] are allophones

Lin (2001) insisted that there are two allophones of 'chi'/ci/; Aspirated 'chi'/ci/ [tɕʰi] at the initial position and unaspirated [tɕi] in intervocalic position of a word, as below.

Table 2. List of allophones of plosive sounds

音素	条件		異音
/p/	語頭		[p^h]
	語中		[p]
/b/	母音間		[β]
	非母音間		[b]
/t/	+/a//e//o/	語頭	[t^h]
		語中	[t]
	+/i/	語頭	[$tɕ^h$]
		語中	[tɕ]
	+/u/	語頭	[ts^h]
		語中	[ts]
/d/	+/a//e//o/		[d]
	+/i/	母音間	[ʒ][d_3]
		非母音間	[d_3]
	+/u/	母音間	[z][dz]
		非母音間	[dz]
/k/	語頭		[k^h]
	語中		[k]
/g/	母音間		[ɣ][ŋ]
	非母音間		[g]

Cited from Lin (2001, p. 141)

Aspirated [tt$ɕ^h$i] and unaspirated [tɕi] are the same phoneme, however, unaspirated voiceless [tɕi] and unaspirated voiced [ʑi] are different phonemes for Japanese. Nonetheless, for Thai learners, unaspirated voiceless [tɕi] and unaspirated voiced [ʑi] are the same phoneme because they are unaspirated sounds. Thus aspirated [$tɕ^h$i] and unaspirated [tɕi] are the same sound for Japanese and they are different sounds for Thai learners. They are allophones. These sounds are Japanese allophones for Thai learners.

The Japanese do not notice these allophones. However, Thai learners can distinguish them, because of the sound system of the learners' mother tongue, Thai. It is possible for them to distinguish the differences, or amount of air, between the two sounds pronounced by the teachers: an aspirated 'chi' [tt$ɕ^h$i] sound, and an unaspirated 'ji' [tɕi] sound. In other words, the 'chi' of 'nichi' is a voiceless plosive sound and this sound is recognized as an unaspirated sound [tɕi] due to the interference from the students' mother tongue sound system.

4.3 Other allophones in the Japanese language

'Chi' and 'ji' are different phonemes. Further, 'chi' is 'chi' at any position of a word, as long as the vocal cords are vibrating. However, Thai learners distinguish two phonemes from 'chi' according to their phonological system: aspirated [$tɕ^h$i] and unaspirated [tɕi]. 'Chi', at the initial position of a Japanese word, it is pronounced [$tɕ^h$i], however, in the intervocalic position, it materializes as [tɕi].

They are the same phoneme in Japanese phonology, however, they are different phonemes for Thai learners. This is an allophone for Thai learners. This is proved by Lin, as well.

According to Nanjo (1999, p.21), allophone is the variant of the phoneme. The materialization of allophone depends on the phoneme position of a word. Further, it is impossible for native speakers to distinguish the sound.

The table below is the list of several samples of Japanese allophone. According to Maruyama (2008, p.99), Japanese「ん」/N/ materializes into four sounds. The allophones are affected by subsequent consonants into 'bilabial', 'alveolar', 'velar' and 'nasal' sounds.

Table 3. List of allophones of Japanese「ん」/ɴ/

	Phoneme	Materialized sound
かんぱ	/kanpa/	/kanpa/
コント	/konto/	[konto]
てんか	/tenka/	[tenka]
けん	/ken/	[keẽ]

Cited from Maruyama (2008) (summarized by the author)

Thus they are allophones for Thai learners. Not only for Thai learners but also aspirated – unaspirated phonology systems like Chinese and Korean or some other language speakers are able to distinguish allophones. The allophone is 'chi' at the initial position [tɕʰi] and 'chi'in the intervocalic position [tɕi]. For Thai learners, including Chinese and Korean, it is possible to distinguish these two 'chi' from the perspective of aspirated–unaspirated sound contrast, however, it is impossible to distinguish them for Japanese. Japanese is a voiced – voiceless sound contrast phonological systematized language. Thus [tɕʰi] and [tɕi] are the same phoneme for Japanese. Nonetheless, they are different phonemes for Thai, Chinese and Korean. They have aspirated–unaspirated sound contrast phonological systematized language.

5. Conclusions

In this study, it is proved that the cause of mishearing of 'nan-nichi' as 'nan-ji' is the difference in phonological system between the Thai langauge and the Japanese language.

At the initial position, for phoneme /t/ + phoneme /i/, the materialized sound is aspirated plosive [tɕʰi]. And in the intervocalic position, it is unaspirated plosive [tɕi]. For Japanese, they are the same phoneme. However, they are different phonemes for Thai learners. Thus, for Thai learners, they are allophones. This is the cause of mishearing.

Japanese phonology: for instance「父」(ちち) /ci/ [tɕʰitɕi], [tɕʰi] = [tɕi]; both consonants are the same phoneme. Thai learners' hearing according to Thai phonology:「父」(ちち) /ci/ [tɕʰitɕi], [tɕʰi] ≠ [tɕi]; both consonants are different phonemes. The aspirated [tɕʰi] is 「ち」/ci/, while unaspirated [tɕi] is understood as「じ」'ji', /zi/ [ʥi]. In the ears of Thai learners these different phonemes produce different sounds and thus create semantic confusion.

Furthermore, a secondary finding was that

in addition to the previously identified allophones [m], [n], and [ŋ], a new allophone for Thai learners of Japanese, [tɕʰi] and [tɕi] has been identified.

However, other causes for the above mentioned mishearing might also be possible. For instance, the nasal sounds in 「なんにち」 might be the cause of mishearing. Further, the vowel [i] in「に」is reduced and becomes difficult to discern. This materialization of 「なんにち」 makes Japanese more ambiguous. Actually the word 「なんにち」has four morae, however,「ん」 and「に」sounds make ambiguous mora. It sounds like three morae of 「なんじ」. Thus these materialized sounds and ambiguous mora might lead students to misunderstand「なんじ」for「なんにち」.

Finally, as investigation in this field has not been extensive, there are deficiencies in this research and insufficient empirical data. Thus further approaches from various angles are required.

The contrastive study of Japanese and Thai phonology helps to find the causes of communication failures, which are often the result of learners' mishearing and pronunciation mistakes. It should also help language teachers develop guidelines for listening instruction.

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