

A cross-modal naming study: Effects of prosodic boundaries on the comprehension of relative clauses in Japanese

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■ ABSTRACT ■

Compared to studies on prosodic effects on the comprehension of syntactic ambiguity in English, there are relatively few that investigated prosodic effects in East-Asian languages. This study examined the role of prosodic information in processing syntactically ambiguous sentences in Japanese. For syntactically ambiguous sentences containing relative clauses, this paper investigated whether prosodic information is immediately available during the process of these ambiguous sentences. Results from an auditory comprehension experiment with an on-line, cross-modal naming task seemingly suggest that contrary to the findings from the off-line study that examined the same constructions, prosodic information may not be immediately available to Japanese listeners. A possible account for failure to obtain effects of prosodic information is provided.

Key Words

prosody, Japanese, syntactic ambiguity, relative clauses, cross-modal naming task

I. Introduction

Natural languages are replete with ambiguity of various kinds, unlike artificial languages which are designed to be as free of any uncertainty as possible. For example, language users are constantly exposed to lexical items with multiple meanings, or larger linguistic units such as phrases or sentences that allow more than one structural analysis, and thus multiple meanings. Whatever the nature of particular ambiguity is, it is essential that that particular ambiguity be resolved for a successful communication to take place. Despite the widespread presence of ambiguity, the rarity of communication break downs in actual conversations indicates that uncertainty in language is actively resolved to the effect that no absolute communication failures, except occasional ones, occur. From this, we can infer that natural languages provide several reliable cues helpful to decipher the uncertainty, although they are full of such uncertainty. One of those cues is prosody, rhythmic structures of a sentence, which is often said to be effectively used to resolve ambiguity in spoken language comprehension. Spoken language users have this extra tool available in addition to other cues in resolving ambiguity.

Numerous studies investigating various kinds of languages have established over the years that spoken language users utilize prosodic information successfully in resolving syntactic ambiguity. Experimental

methods employed in these studies range from auditory comprehension tasks (Lehiste, 1973; Schafer, Speer, Warren, & White, 2000; Schafer, Speer & Warren, 2004; Price, Ostendorf, Shattuck-Hufnagel & Fong, 1991; Warren, Grabe & Nolan, 1995), cross-modal naming task (Marselen-Wilson, Tyler, Warren, Grenier & Lee, 1992; Kjelgaard and Speer, 1999), ERP(event-related brain potentials) (Steinhaur, Alter & Friederici, 1999) and eye-tracking (Snedeker and Trueswell, 2003). These diverse experimental paradigms brought positive results supporting the role of prosody, especially, the robustness of prosodic effects. Many of the previous studies have centered on the English language, but research on languages other than English such as Japanese and Korean has also increased (see Kim 2004, Kang & Speer 2003, Kang, Speer & Nakayama 2006, Kang 2007, among others). These studies have also produced similar results. These studies on East Asian languages specifically provide us with meaningful insights in the domain of spoken language processing because those languages are unrelated to English and truly allow cross-linguistic comparisons of prosodic effects on diverse languages.

Kang, Speer & Nakayama (2006), in particular, investigated how Japanese listeners employed prosodic information in comprehending syntactically ambiguous sentences with relative clauses. This off-line¹⁾, end-of-the sentence comprehension study examined two types of sentences given below.

- | | | | |
|--|------------------|--------------|------------|
| 1) Takeshi-ga | nyuuin-shiteiru | oba-o | nagusameta |
| Takeshi-nom | was hospitalized | aunt-acc | consoled |
| ‘Takeshi consoled the aunt who was hospitalized.’ | | | |
| | | | |
| 2) Takeshi-ga | nyuuin-shiteiru | byooiin-o | sagashita |
| Takeshi-nom | was hospitalized | hospital-acc | looked for |
| a. ‘Takeshi looked for the hospital where (someone) was hospitalized.’ | | | |
| b. ‘(someone) looked for the hospital where Takeshi was hospitalized.’ | | | |

Kang et al. found that for type (1), listeners were faster in recovering the ultimate meaning with matched prosodic and syntactic boundaries (an Intonation Phrase boundary right after the initial NP, *Takeshi-ga*) (see section 2.2 for the discussion of Japanese Intonation model) than with mismatched boundaries (no IP boundary at the same location). For type (2), which is still ambiguous even at the end of the sentence (see the detailed discussion on the difference between these two types in section 2.1), the presence or absence of an Intonation Phrase boundary after the initial NP, *Takeshi-ga*, led listeners to assign a different meaning, even a very unnatural one, (2a), to the same sequence of words.

Despite the positive effects of prosodic structure on resolving syntactic ambiguity in these languages, the results of the off-line studies cannot tell us if this cue is being used on-line because the experimental task examined listeners’ understanding at the end of the sentence, when other possibly disambiguating information is also available. One way to see the availability and the immediacy of prosodic effects is to use on-line experimental methods, which check language users’ understanding of linguistic stimuli

1) In psycholinguistics, off-line experimental methods refer to methodology where participants’ responses are collected at the end of presentation of linguistic stimuli. Typically participants’ judgement on grammaticality of sentences or preference for a particular interpretation over the alternative is assessed. Since off-line methods collect data after participants process all the necessary information, it is hard to determine at which temporal point certain information is available to them. On the other hand, on-line methods assess participants’ reactions and effects of certain information at various temporal points without waiting until the end of presentation of linguistics stimuli. A cross-modal naming task used in this paper is considered such on-line methods.

during their active processing. Since this kind of method usually asks participants to respond to experimental stimuli in the middle of processing them, it is possible to determine whether certain effects are immediately present without waiting until the end of the sentence. Given that structure building of a sentence with an assignment of a certain meaning to even an ambiguous sentence is being done immediately at the risk of a failure of the first analysis and thus reanalysis at a later stage, it will be interesting to see if prosodic information is also instantly used by listeners on-line in this process. Using these on-line methods, we will be able to show when and how prosodic information is employed without waiting until the end of a sentence when other information is available.

The present paper uses one such method, a cross-modal naming task. In the typically used cross-modal naming task in the field of psycholinguistics, participants are presented with stimuli in one perceptual mode (usually auditory mode), and then another perceptual mode (often visual type) should be used to respond to the following stimuli. For example, in this study, participants heard sentence fragments up to a certain point (auditory mode), and then, had to name visual cues that appeared on the computer monitor (visual mode) (see the discussion in section 3.3 for the actual procedure). Since the task itself uses both perceptual modes (hence cross-modal) and then forces participants to name visual targets (naming), this paradigm is called a cross-modal naming task. Despite the fact that this kind of procedure is a little artificial and hinders the natural process of language comprehension, this method has often been used to show the immediacy of certain effects in parsing ambiguous structures. If prosodic effects found in off-line studies for the same Japanese constructions (as in Kang et al. 2006) are also present in this on-line study, we will be able to say that prosody is immediately being used in processing ambiguous sentences and can guide listeners into a particular sentence structure and meaning.

The organization of this paper is as follows. The next section discusses the background of the syntactic and prosodic structures of Japanese. Then, our experiment is described in Section 3. Section 4 presents experimental results and our discussion. Finally, our concluding remarks are provided in Section 5.

1. Syntactic and prosodic structures of Japanese

Syntactic structures

Syntactic structures in Japanese widely differ from those of English in that they include *pro*-drop, verb finality and the presence of a complementizer at the end of, but not the beginning of, an embedded clause (i.e., head-finality). The combination of these syntactic properties gives rise to syntactic ambiguity not found in languages such as English. One of the most interesting and frequent syntactic ambiguities concerns syntactic clausal boundaries due to the presence of embedded relative clauses. That is, up to a certain point of a sentence, there is no knowing whether there is a clausal boundary or not, which leads to a reanalysis of sentence structure at a later stage. For example, in (3) below, up to the third word, the reader is being led to the interpretation where the initial noun, *Wada-ga*, and the second noun, *hijoudoa-o* ‘emergency door’, belong to the same clause with the following verb, *aketa* ‘open’, with the initial noun being the subject and the second noun being the object of the verb.

- 3) Wada-ga hijoudoa-o aketa ...
 Wada-nom emergency door-acc open ...

However, this interpretation falls apart when the fourth word, *shashou-o* ‘train conductor’, appears as in (4). Now, it becomes clear that the first noun cannot belong to the same clause as the verb

aketa ‘open’, and so cannot be the subject of the verb, and that the second noun and the verb forms a relative clause that modifies the following noun *shashou-o* ‘train conductor’. A relative clause of the type in (4) always contains a missing argument of a verb (a gap), which functions as the subject or the object of the embedded clause and is identified with a noun within the same sentence, the head noun. In (4), the subject of the relative clause is said to contain such a gap. In summary, unlike the clause end, the clause opening is not known when it is being processed and only at the position of the modified noun does it become clear that a syntactic clause boundary exists between the initial noun and the second noun. (Example (1) seen in section 1 belongs to this type. The only difference is that (4) has an object within the relative clause whereas (1) does not.)

- 4) Wada-ga hijoudoa-o aketa shashou-o zessanshita
 Wada-nom emergency door-acc open train conductor-acc praised
 ‘Wada praised the train conductor who opened the emergency door.’

The sentence fragment in (3) can be continued in a slightly different way, as in (5). (Example (2) in section 1 belongs to this type. *pro* in (5) is a more technical term for *someone* in (2))

- 5) Wada-ga hijoudoa-o aketa yuuin-o chousashita
 Wada-nom emergency door-acc open cause-acc investigated
 a) ‘Wada investigated the reason that (*pro*) opened the emergency door.’ (embedded *pro*)
 b) ‘(*pro*) investigated the reason that Wada opened the emergency door.’ (matrix *pro*)

Unlike example (4), the nature of the relative clause modifying the head noun, *yuuin-o* ‘cause’, does not require the presence of a gap. Rather, the sentence in (5) contains another type of missing elements, *pro*, either in the matrix (5b) or embedded subject position (5a). Unlike a gap, *pro* need not be identified with any nouns within the same sentence and thus, the referent of *pro* should be retrieved from the context accordingly. For (5a), *pro* should be posited for the embedded subject position, and thus there is a syntactic clause boundary between the initial noun and the second noun. On the other hand, if *pro* is posited for the matrix subject as in (5b), then no such boundary exists at the same location. Given that Japanese and Korean speakers drop the matrix subject very frequently, out of the two readings, (5b) is considered easier than (5a), which sounds rather forced without the help of any preceding context. However, the important thing is that the reading in (5a) is not impossible. In fact, in off-line studies examining the same type of sentences in Japanese (see Kang et al. 2006) and Korean (see Kang & Speer 2003), listeners showed the awareness of this reading solely based on prosodic information even when these sentences were presented without any helpful context.

2.2 Japanese intonation model

The Japanese intonation model adopted in this study is based on Venditti (2005). The Japanese intonation system differs from that of English in several aspects. First of all, at a word level, unlike English, a stress-timed language with sentential pitch prominence, Japanese has lexical pitch accents, which means that pitch prominence of words in a sentence is mostly determined by lexicon. Pitch prominence of certain but not all lexical words and occasional break from the continuous stream of sounds such as pause contribute to creation of overall tunes of a sentence. However, it is also true that in this

process, just like English, syntactic or semantic considerations also play a role; for example, a syntactic clause boundary is often marked by lengthening of the word immediately preceding the boundary and/or pause by Japanese speakers (Venditti 1993).

Venditti's model assumes that each utterance in Japanese consists of one or more than one Intonation Phrase (IP, henceforth). Each IP, then, can have one or more than one Accentual Phrase (AP, henceforth) and is marked by tonal patterns, perceived junctures and optional pauses. An AP, the lower-level phrase, is typically characterized by an initial rise around the second mora, and the following fall at the right edge of the phrase. In each AP, one or more than one word which is either lexically accented or unaccented can occur although unaccented words typically tend to be merged with accented words to form into the same AP.

3. Experiment

The research question raised for this experiment was whether Japanese listeners were sensitive to prosodic manipulation enough to be guided by that, and as a result, whether prosodic information is actively used in listeners' processing of the test sentences on-line. To answer this question, two prosodic conditions were created; one is a matched condition where prosodic and syntactic boundaries are matched while the other is a mismatched condition where those two boundaries are not matched.

3.1 Materials

Forty test sentences of the type in (4), repeated here as (6), were recorded by a female speaker of Tokyo dialect, who was also a trained phonetician and familiar with the Japanese intonation system. Each test sentence was produced with two differing prosodic phrasings; an IP boundary was inserted right after the initial noun, *Wada-ga*, (early IP boundary) as in (6a), or after the head noun modified by the relative clause, *shashou-o*, (late IP boundary) as in (6b). The early IP boundary right after the initial subject noun matches the syntactic clause boundary, which signals the beginning of the relative clause. On the other hand, the presence of an IP after the head noun but not after the initial noun has the potential of misleading listeners toward the reading where there is no syntactic clause boundary and therefore, the first two nouns belong to the same clause as the verb *aketa*. However, it becomes clear that that reading cannot be sustained when listeners encounter the head noun *shashou-o*. In summary, it is expected that the early boundary, the matched syntactic and prosodic condition, will prove easier to process than the late boundary, the mismatched condition and therefore, the times for naming the visual target (bold faced word in (6)) will be expected to be shorter.

6) Wada-ga hijoudoa-o aketa **shashou-o** zessanshita
 Wada-nom emergency door-acc open **train conductor-acc** praised
 'Wada praised the train conductor who opened the emergency door.'

- a) [Wada-ga]ip [hijoudoa-o aketa **shashou-o** zessanshita]ip:early boundary
 b) [Wada-ga hijoudoa-o aketa **shashou-o**] ip [zessanshita]ip : late boundary

In addition, *pro* type sentences, repeated here as (7) below, were used as a control sentence to reduce the predictability of the test sentence structures and mixed with test sentences. As explained before, although *pro* type sentences share the same surface word order, at the head noun position, two different

interpretations are possible. Forty *pro* type sentences were included, for which the IP boundary was also inserted right after the initial subject noun as in (7c) or after the head noun as in (7d). Unlike the gap type sentence, the *pro* type is ambiguous and each of the two different prosodic phrasings was intended for the two different readings. The early IP boundary as in (7c) is intended for the embedded *pro* reading (7a) whereas the late IP boundary as in (7d) is intended for the matrix *pro* reading (7b).

- 7) Wada-ga hijoudoa-o aketa **yuuin-o** chousashita
 Wada-nom emergency door-acc open **cause-acc** investigated
- a. 'Wada investigated the reason that (*pro*) opened the emergency door.' (embedded *pro*)
 - b. '(*pro*) investigated the reason that Wada opened the emergency door.' (matrix *pro*)
 - c. [Wada-ga]ip [hijoudoa-o aketa **yuuin-o** chousashita]ip: early boundary
 - d. [Wada-ga hijoudoa-o aketa **yuuin-o**]ip [chousashita]ip:late boundary

Finally, another two different types of sentences were also included as fillers. Each of test and filler sentences were produced in entirety in two prosodic conditions and then for the experimental task, sentence fragments only up to the embedded verb were excised from the entire utterances.

3.2 Participants

Forty paid native speakers of Japanese from Columbus, Ohio area participated in this study. No participants reported any hearing problems.

3.3 Procedures

The presentation of auditory stimuli and visual targets was controlled by E-prime, software used to run psychology experiments. Participants sat at a desktop computer equipped with a microphone and wore overhead headphones. After being briefed on what the procedure of the experiment was by an experiment assistant, each participant first finished practice trials. After practice trials, participants were given time to ask questions about the experiment procedure they might still have. The actual procedure of each trial consisted of the following. First, participants heard through headphones a sentence fragment containing only up to the embedded verbs (e.g., *Wada-ga hijoudoa-o aketa* from (6) and (7)) for each test sentence. After hearing the sentence fragments, participants saw a visual target (the noun modified by the relative clause, written in Japanese characters, *shashou-o* in (6) or *yuuin-o* in (7)) that appeared on the computer monitor, and named it into the microphone as quickly as possible. The E-prime software recorded the time from the end of presentation of the auditory sentence fragment to the moment when the microphone was triggered by the articulation of visual naming targets by the participants. After naming, participants completed each sentence by providing at least one more word. This step was necessary because even if the visual targets were named correctly, the ungrammatical completion would have indicated listeners' failure to incorporate the target words into the structure they were previously building. An assistant, a native Japanese speaker, was with all the participants to record words that they provided to complete the sentence fragments and also any naming errors made by participants such as mispronunciation of target words or improper trigger by coughing or other noises. After completing this main task, participants named all the naming targets in a neutral condition, where these words were presented in isolation. This step was done to remove any lexical difficulty associated with particular words. Each of the entire utterances including auditory fragments, naming targets and completion provided by participants were later evaluated for grammaticality by the same assistant.

4. Results and discussion

Two dependent variables were measured, naming error rate and naming latency. Naming errors include response times for any data for which participants' completions were judged ungrammatical, errors due to mispronunciation or coughs, or any data that took longer than 3 seconds in naming. Although some of these errors (mispronunciation or coughs) are just accidental and not related to experimental manipulation, a subset of those errors (ungrammatical completion or extremely long naming latency) do reflect participants' difficulty in processing experimental materials. Response times for any data with these naming errors are excluded from the analysis of naming latency and these data amounted to 13.3% in (6b) and 9.3% in (6a). ANOVA test run in R showed that the difference was marginally significant [$F_1(1,39)=3.7823$, $p=0.05904$, $F_2(1,39)=3.863$, $p=0.05651$].

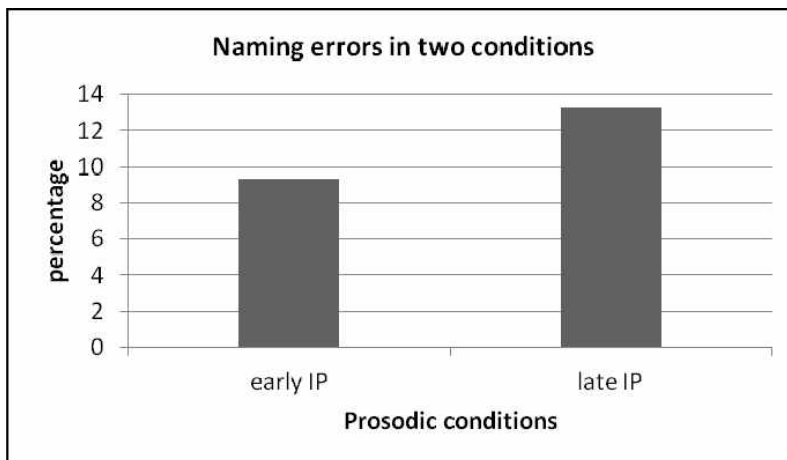


Figure 1: Naming errors in two prosodic conditions

As would have been expected, more missing data came from (6b), the late IP condition, the mismatched syntactic and prosodic condition. This suggested that when the prosodic and syntactic boundaries did not coincide, listeners had more difficulty naming the visual targets (e.g., extremely longer naming time), or even if they named the target words correctly, ungrammatical completion they provided indicated their failure to integrate the targets into the structure they were building.

Naming latency refers to the time participants took from the end of the presentation of auditory materials to the point when they named the visual targets on the computer monitor. During the presentation of auditory materials, participants were most likely to be assigning a certain meaning to the stimuli and upon seeing a visual target, they had to incorporate it into the structure they were building. Longer latency reflects longer decision time and so more processing difficulty in integrating the visual targets.

An analysis of response times that excluded any naming errors, however, seems to contradict the results found previously in off-line studies (Kang & Speer 2003; Kang et al. 2006). Despite the higher naming error rate in the mismatched condition (6b), naming times corrected for lexical differences (the total naming times in each condition minus the naming times for the neutral condition) for (6b) were shorter (250 msec) than the matched condition (6a) (307 msec) (see Figure 2). Again, the longer naming time reflected listeners' difficulty in integrating the visual targets into the structure they were building. ANOVA test showed that this difference reached significance both in subject and item analyses [$F_1(1,39) = 12.431$, $p=0.001097$, $F_2(1,39)=5.9859$, $p=0.01903$]. These results departed from our expectation

that the matched syntactic and prosodic boundaries would make integrating the target words easier. In summary, the naming error data and response time data seem to point to the opposite direction.

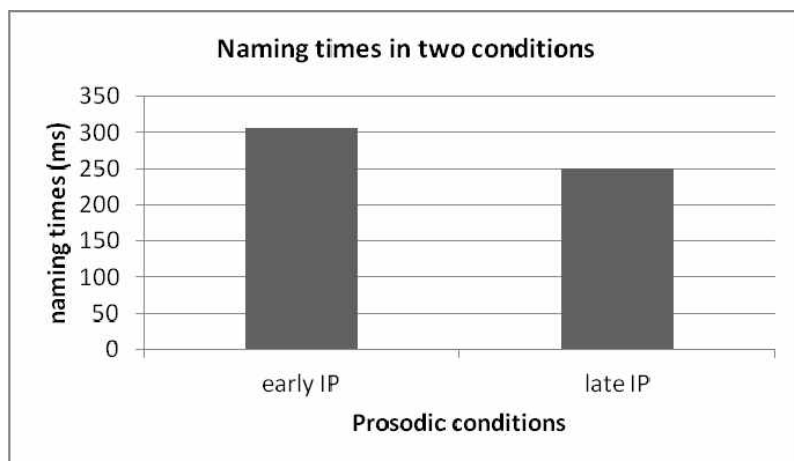


Figure 2: Naming times in two prosodic conditions

One possible account for the discrepancy between the current results and those of previous studies is that listeners may have been responding to the differing speed of the spoken materials. In (6a), a considerable length of pause was present between the initial noun and the next word while (6b) did not contain such a long pause. Thus, the latter condition may have prompted the listeners to speed up for production of the visual targets. In fact, similar results were obtained in another cross-modal naming study using comparable Korean constructions (Kang & Speer, 2005). To further evaluate this account, analyses of filler sentences, *pro* type sentences, used in the same experiment, were conducted. The results showed a parallel pattern to the test sentences; the early boundary condition in (7c) (343 msec) induced a longer naming latency than the late boundary condition in (7d) (275 msec) and the difference was significant [$F_1(1,39)=12.551, p=0.001045, F_2(1,39)=12.019, p=0.001297$]. Based on these results from the *pro* type sentences, the hypothesized speed-up of the late boundary condition seem to be corroborated.

However, there is one additional factor that may have affected the early boundary condition in (7c). The early prosodic boundary may have biased the listeners toward the embedded *pro* interpretation (7a). Still, despite the matched prosodic and syntactic boundary, the embedded *pro* reading in (7a) sounds contrived and unnatural without any helping context. Unlike the matrix *pro* reading like (7b), which can often occur because of the frequent dropping of the subject in either Japanese or Korean, the dropping of the embedded subject is very rare. In fact, the supposed difficulty of the early boundary condition for *pro* type sentences was confirmed in the off-line listening comprehension test that used comparable constructions in Japanese (Kang et al., 2006). On the other hand, the late boundary in (7d) may have prompted listeners toward the matrix *pro* interpretation, which is easier than the embedded *pro* reading in the first place, and furthermore, prosodic information made it much easier to have such an interpretation. In summary, longer processing times for the early boundary condition for *pro* type sentences may be attributed to greater processing difficulty in the embedded *pro* reading. If so, then, the longer latency in the early boundary may have been due to the combined effects of these two factors, and it seems difficult to separate these two effects from each other. In summary, the results from *pro* type sentences provide only partial support for the suggested speed-up of the early IP condition

in the gap type sentences.

4. Conclusion

This study examined how immediately prosodic phrasing information was utilized by Japanese listeners. Results from an auditory comprehension experiment with an on-line, cross-modal naming task suggest the following conclusion: it could be argued that prosodic information may not be available immediately to Japanese listeners. However, this conclusion may be premature: numerous cross-modal naming tests on English confirmed the on-line effects of prosodic information. In addition, a study on Korean using the same cross-modal naming paradigm (Kim 2004) demonstrated positive effects of prosodic information on the comprehension of ambiguous Korean sentences. Although it is not clear why the current study failed to obtain similar effects, it is worthwhile to investigate the account proposed above using other types of constructions, i.e., if listeners are sensitive to the speed of the materials previously presented.

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Appendix

1. Kuritaga usagio tataita youmuino kaikoshita.
Kurita laid off the janitor who hit the rabbit.
2. Hirokiga yagio hanashita onnanokoo nadeta.
Hiroki patted on the girl who released the goat.
3. Shimamotoga raiono choukyoushita danchouo odorokashita.
Shimamoto surprised the head (of circus) who schooled a lion.
4. yuubokuminga tabibitoo osotta ookamio uchikoroshita.
The nomad shot down the wolf who attacked a traveler.
5. Takeshiga obao nagusameta pieroo tsuisekishita.
Takeshi chased clown who consoled the aunt.
6. Yuusukega otoutoo tsuremodoshita enchouo sasotta.
Yusuke invited kindergarten director who brought the younger brother back.
7. Katouga shokunino kanyuushita tenchouo kidukatta.
Kato considered about shop owner who recruited the craftsman.
8. Mizunoga kouhaio kabatta hosutesuo settokushita.
Mizuno persuaded hostess who protected/took the side of his younger colleague.
9. Akimotoga minaraio awarenda jounenkyakuo kiratta.
Akimoto hated the customer who felt sorry for the apprentice.
10. Sawazakiga maneejaa semetateta shefu kenashita.
Sawasaki despised chef who accused/blamed the manager.
11. heishiga horyoo goumonshita shouguno kisoshita.
The soldier indicted the general who tortured an captive.
12. Yamauchiga touboushao kakumatta keibiino tashinameta.
Yamauchi warned the security guard who concealed the runaway.
13. Yukikoga ashisutantoo tsukitobashita gakuseio keikaishita.
Yukiko felt cautious about the student who pushed the assistant.
14. keijiga goutouo taihoshita shoujoo sagashiateta.
The police detective found out the girl who arrested the robber.
15. repootaaga kumao mokugekishita murabitoo tazuneta.
The reporter visited a village person who witnessed the bear.
16. yamamotoga kakarichouo risutorashita torishimariyakuo toitsumeta.
Yamamoto questioned the executive director who fired (restructured) a part section chief.
17. harumiga arubaitoo yatotta kyoujuo uranda.
Harumi had a grudge over professor who hired a part-timer.
18. Tachibanaga marason senshuo oinuita seineno saiyoushita.
Tachibana employed young man who exceeded a marathon runner.
19. Kishimotoga shikao hokakushita ryoushio tasuketa.
Kishimoto helped the hunter who captured the deer.

20. fukeiga ehono yabutta hobo sanwo mita.
Parents saw the nursery school teacher who ripped a picture book.
21. shushouga tankao yonda daitouryouo hometa.
The prime minister praised the president who read a poem.
22. Sugawaraga okaneo tsukaikonda senmuo nikunda.
Sugawara hated an executive director who pocketed money.
23. Nishisakaga osakeo nonda ginkouino oiharatta.
Nishizaka sent away the banker who had drunk sake.
24. Kazumiga sofao ugokashita shufuo mitsumeta.
Kazumi disturbed the housewife who moved a sofa.
25. Wadaga hijoudoao aketa shashouo zessanshita.
Wada praised the train driver who opened the emergency door.
26. shueiga kinkoo secchishita kaikeigakario tashikameta.
The guardsman checked the accountant who placed a safe.
27. saibankanga tochio sashiosaeta fudousanyao sabaita.
The judge judged the real estate person who seized land.
28. shiminga ryokuchio hozenshita daijino tataeta.
Citizens praised the minister who protected the green land.
29. Yoshimotoga shinseihino happyoushita kigyookao urayanda.
Yoshimoto envied the enterpriser who released a new product.
30. Yokotaga shisetsuo heisashita shichouo shibatta.
Yokota tied the city mayor who closed the institution.
31. shachouga kaishao kyuushuushita kaichouo chuushoushita.
The company president slandered the chairman who merged companies.
32. Ishidaga miseo kirimorishita kokkuo hikinuita.
Ishida headhunted the cook who ran the store properly.
33. Suzukiga kouchao irekaeta kanojoo tometa.
Suzuki stopped the girlfriend who exchanged (made new) tea.
34. Kentaga kutsuo migaita musukoo dakishimeta.
Kenta embraced the son who brushed shoes.
35. Kawamuraga karateo naratta shougakuseio chouhatsushita.
Kawamura provoked (to fight) the elementary school student who acquired karate.
36. inchouga kusurio nusun da jimuiuo semeta.
Hospital director accused the office person who stole medicine.
37. hishoga koohiio kirashita ochakumio ketobashita.
The secretary kicked the tea server who made coffee run short.
38. Junkoga keikakuo jikkoushita tomodachio togameta.
Junko blamed the friend who executed the plan.
39. Yuukoga ieo katta ojisanu kudoita.

Yuko seduced the middle age man who bought a house.

40. Fujiiga hanao iketa deshio bujokushita.
Fujii insulted the apprentice who arranged (did the) flowers.