Online Comprehension of Referential Expressions in English Discourse by Japanese L2ers of English

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1. Introduction

In communication, speakers refer to things and people using referential expressions (REs). A male named JOHN, for instance, can be referred to in a number of ways: with the proper name *John*, with a definite NP *the man*, with the pronoun *he*, etc. Speakers of a null-subject language also have an option of the null pronoun. Different languages have different sets of RE types, and how speakers use REs in discourse has long been a topic of investigation. The goal of the present study is to see how REs in English discourse are processed by intermediate-to-advanced adult learners of English as a second language (L2) whose first language (L1) is Japanese. To do this, we first compare the processing of REs by English native speakers and Japanese native speakers.

Previous native adult studies have found that there is an inverse relationship between the salience/accessibility of a discourse entity and the explicitness of the RE for that entity. Gordon, Grosz, and Gilliom (1993), for example, showed that when an RE in subject position refers to an entity that is the center of attention in the discourse, native English adults process a sentence with a pronoun, a reduced RE form, faster than a sentence with a repeated (proper) name, a more explicit RE form. This reading-time increase caused by a repeated name—the *Repeated Name Penalty* (RNP)—was also found for Chinese, a null-argument language (Yang, Gordon, Hendrick, & Wu, 1999). Japanese has null subjects as well, and they are predominantly used for continued discourse topics (e.g., Clancy, 1980). However, unlike overt pronouns in Chinese, overt pronouns in Japanese (*kare/kanozyo* 'he'/'him'/'his'//'she'/'her'/'her') are rarely used in production (e.g., Obana, 2003). We will examine, by comparing reading times (RTs), both whether the RNP exists in Japanese and how Japanese null and overt subject pronouns are processed.

As for the L2 acquisition of RE use, previous studies have reported L2 learners' (L2ers') nontarget-like use of REs in L2 discourse. L2ers of a null-subject language, especially at beginning levels, overuse nonnull subject REs for the most salient discourse entities in elicited narratives (e.g., Blackwell & Quesada, 2012; Nakahama, 2009). Even near-native L2ers were found to resolve referential ambiguity of pronouns in a nontarget-like manner, interpreting an overt subject pronoun as referring to a highly salient entity for which a null pronoun is usually used (e.g., Belletti, Bennati, & Sorace, 2007). We hypothesize that such nontarget-like uses of REs came, at least in part, from high cognitive demands in the tasks. There is evidence that when the attentional resources allocated to a discourse entity are reduced by the existence of an additional entity, English native speakers tend to use a repeated name for that entity, even when a (gender-disambiguating) pronoun suffices (Arnold & Griffin, 2007). It may be that the L2ers in the studies above displayed nontarget-like patterns because their processing resources were overly stretched in the relatively cognitively demanding tasks of narrative production and ambiguity resolution. We also predict that lower-proficiency L2ers are more

likely than higher-proficiency L2ers to be nontarget-like in RE use, as they are under greater cognitive pressure while using their L2. In this study, we employ a simple self-paced reading task in the context of discourses without referential ambiguity in the stimuli. Preliminary results from two L2-proficiency groups are reported.

2. Processing of REs by native adults

When a speaker initiates a discourse, entities referred to in the utterances enter into the discourse representations in both the speaker's mind and the listener's mind. The discourse entities are represented in different degrees of salience, and speakers choose one of the RE forms available in the language in such a way that listeners can effectively and efficiently identify the referent in their discourse representations. The degree of salience for a discourse entity is determined by various factors (for review, see Arnold, 2010; Huang, 2000), but syntactic prominence is most relevant in this study; the discourse entity referred to by the NP in subject position is more salient than those in non-subject positions. For RE choice, the basic idea underlying standard accounts, or what we call "salience approaches," is that the types of RE forms in a language are hierarchically organized in terms of their explicitness and are mapped onto the salience scale of their referents (e.g., Ariel, 1990; Givón, 1983; Grosz, Joshi, & Weinstein, 1995; Gundel, Hedberg, & Zacharski, 1993). The hierarchy in (1) is generally found in the literature; the null pronoun, the most reduced RE form, is preferentially used for the most salient discourse entity, and as an entity's salience decreases, a correspondingly more explicit RE form is preferred.

(1) RE forms ranked for their referent's salience level in discourse
     null pronoun > overt pronoun > demonstrative > definite NP > indefinite NP

One thing that this hierarchy implies is that the use of a reduced RE form for a non-salient entity and the use of an explicit RE form for a highly salient discourse entity are infelicitous, often explained as a violation of Grice's (1975) maxim of quantity. Such violations can disrupt smooth communication.

The ways in which different types of REs influence processing have been investigated in experimental studies. Gordon et al. (1993) tested native English adults in a sentence-by-sentence, self-paced reading task, where participants read 4-sentence passages like (2a-b-c-d) and (2a-b-c′-d) in which, importantly, there is no referential ambiguity due to gender difference (i.e., gender mismatch) between the 2 human protagonists. An RT was measured for each sentence.

(2)   a. George jumped out from behind a tree and frightened Debbie.
                 b. He was surprised at her hysterical reaction.
     [Continue] c. *He/George* never thinks about how others might feel.
     [Shift]   c′. *She/Debbie* screamed loudly and ran away.
                 d. Practical jokes are not always fun for everyone.
                                    (Gordon et al., 1993, pp. 333–334, [1]–[4′])

The RT results from the third sentences (2c/2c′) showed that in the Continue condition (2c), where the main discourse entity (e.g., a man named GEORGE) continues being the discourse topic, participants spent less time reading the sentence with a subject pronoun (e.g., *He never thinks*…) than the sentence with a repeated name (e.g., *George never thinks*…). In the Shift condition (2c′), where the discourse topic is shifted to a less-salient entity referred to by the NP in the first sentence's object position (e.g., a woman named DEBBIE), the RT difference between the 2 RE conditions (pronoun vs. repeated name) disappeared. The fact that the RT was increased by a repeated-name subject in the Continue condition (i.e., the RNP) but not in the Shift condition suggests that in a discourse like (2), English natives prefer a pronoun when its antecedent is in subject position, where the referent is highly salient, but not when the antecedent is in non-subject position, where the referent's salience is reduced.

The RNP was also found in Mandarin Chinese. Yang et al. (1999) tested native Chinese adults in a series of self-paced reading tasks similar to that of Gordon et al. (1993). The REs in this study had 3 conditions: a null subject pronoun ("Null") in addition to an overt subject pronoun ("Overt") and a

repeated-name subject ("Name"). The full-sentence RT results indicated that in the Continue condition, participants processed a null subject pronoun and an overt subject pronoun equally faster than a repeated name (Experiment 1), showing the RNP. In the Shift condition, they processed an overt subject pronoun and a repeated name similarly, i.e., no RT difference (Experiment 2), but processed an overt subject pronoun faster than a null subject pronoun (Experiment 4); here, the increased RT for the null pronoun must be due to the lack of a gender cue that effectively shifts the discourse topic, because when the critical sentences consisted of 2 gender-matched entities, a null subject pronoun and an overt subject pronoun were processed similarly (Experiment 3).

The fact that in Chinese the overt pronoun was processed as fast as the null pronoun in the Continue condition seems surprising for salience approaches in that they would expect the null pronoun to be processed faster than the overt pronoun (see [1]). Yang et al. (1999) accounted for their findings using Gordon and Hendrick's (1998) model, developed in the framework of Discourse Representation Theory (Kamp & Reyle, 1993). The model proposes the same "construction rule" for null and overt pronouns, and the rule initiates the search for a "suitable antecedent" from the grammatically suitable entities already introduced into the discourse in the order of their syntactic prominence (Gordon & Hendrick, 1998, p. 407), with, e.g., subjects being more prominent than objects. Because the model treats the two types of pronouns as a class, it does not predict different processing patterns between them for the most salient discourse entity. As for how this model treats a less-salient entity (e.g., the referent of an object), an RE with semantic features that can uniquely identify an antecedent is preferred over an RE without them; this means that in the Shift condition with 2 gender-mismatched discourse entities, an overt subject pronoun encoding gender should be preferred over a null pronoun. This is what Yang et al. found in their Chinese participants' processing.

Table 1 summarizes the predicted RT patterns from the two types of accounts of RE use with two gender-mismatched discourse entities.

Table 1. Summary of RT patterns predicted for a discourse with two gender-mismatched entities

	Continue condition	Shift condition
Salience approaches	Null < Overt < Name	Null > Overt ≈ Name
Gordon & Hendrick's (1998) model	Null = Overt < Name	Null > Overt ≈ Name

Following these studies in English and Chinese, the present study first examines (a) whether native Japanese adults also show the RNP and (b) how they process Japanese subject pronouns. There is much evidence in the literature that Japanese speakers prefer to use null subject pronouns for continued discourse topics (e.g., Clancy, 1980; Hinds, 1983); Nakahama (2009), for instance, found that as much as 90.4% of the REs produced for continued topics by her native Japanese participants narrating a picture storybook were null pronouns. Thus, it is predicted that when, in comprehension, a repeated-name subject is used for a highly salient discourse entity, Japanese natives will experience processing difficulty and this will manifest in the form of the RNP.

The status of overt pronouns in Japanese is somewhat of a puzzle. The words *kare* and *kanozyo* are used to translate the English (nominative) pronouns *he* and *she*, respectively, but they are not completely equivalent. It is well known, for example, that *kare/kanozyo* cannot be construed as a bound variable whereas *he/she* can. Hoji (1991) argues that this is because the *ka* in *kare* is closely related to the *a* in *are* ('that [thing]') in the Japanese *ko/so/a/do* demonstrative paradigm and so *kare* is deictic in nature.[1] Proposing that no overt categories in Japanese have the [+p] ("pronoun") feature (formally identifying pronounhood) which would make them subject to Principle B of the Binding Theory, Hoji (1990) concludes that Japanese does not have overt pronouns per se. However, as shown in (3) below, (*kare/)kanozyo* can take an NP (here, a proper name) as antecedent, just as English pronouns do (Noguchi, 1997). Since this resulting meaning of co-referentiality (via co-indexation) is one of the properties relevant to the present study, we will treat *kare* and *kanozyo* as overt pronouns.

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[1] This analysis presumably extends to *kanozyo* as well.

(3) *Mary*-ga   [*kanozyo*-ga   tensai-da   to]   omotte-iru.
    Mary-NOM   she-NOM   genius-COP   COMP think-PRES
    '*Mary* thinks that *she* is a genius.'

<div align="right">(Noguchi, 1997, p. 770, [2b])</div>

Another aspect of Japanese overt pronouns is that native speakers do not use them frequently. Clancy (1980) found that none of the 925 REs observed in her Japanese participants' elicited narratives was an overt pronoun; Obana (2003) also found that only 2 of the 48 Japanese historical novels analyzed in her study used overt pronouns. In her written production task, Okuma (2011) asked native (and nonnative) Japanese participants to complete a sentence like (4) while looking at either a picture with a girl watering flowers or a picture with a teacher watering flowers.

(4) Onnanoko-wa   sensei-ni   [(   ) toki-ni] aisatu-o   sita.
    girl-TOP   teacher-DAT   when   greeting-ACC did
    'The girl greeted the teacher when she was watering (flowers).'

<div align="right">(Okuma, 2011, p. 97, [9])</div>

The results showed that the native participants' most frequently used subject RE forms were the null pronoun for the entity referred to in subject position (e.g., the girl) but an NP for the entity referred to in non-subject position (e.g., the teacher); interestingly, even for the object antecedent, the *null* pronoun was used more frequently than the *overt* pronoun (38% vs. 19%). The exact cause of the infrequent use of overt pronouns in Japanese is not clear (but see the discussion above), although Obana (2003) notes that overt pronouns are likely to appear in written texts that deal with foreign people and countries.

Let us now return to the two accounts of RE use (see Table 1). We saw that for a highly salient discourse entity in a discourse with no other gender-matched entity (i.e., the Continue condition), salience approaches predict null subject pronouns to be preferred over overt subject pronouns, whereas Gordon and Hendrick's (1998) model predicts no preference difference between the two types of pronouns; after all, an overt pronoun taking an NP (e.g., a proper name) as antecedent is grammatical (see [3]), so Japanese natives may well process overt pronouns easily. On the other hand, when findings from the Japanese studies reviewed above are considered, one might instead expect Japanese natives to experience difficulty processing an overt pronoun during online reading—regardless of its antecedent's grammatical status in discourse—because overt pronouns are so rarely used in production. Neither of the accounts in Table 1 could explain such a processing pattern. We will see which of these three scenarios, if any, better captures Japanese speakers' processing of null and overt subject pronouns in discourse.

3. Experiment 1

This experiment examines the online processing of REs by native English adults (Experiment 1A) and by native Japanese adults (Experiment 1B), using a sentence-by-sentence, self-paced reading task similar to Gordon et al.'s (1993) and Yang et al.'s (1999). The English stimuli developed for Experiment 1A contained 3-sentence passages like (5). The second sentences (5b/5b′), which we call the "critical sentences," were manipulated in terms of 2 factors: Discourse Continuation (Continue vs. Shift) and subject RE Type (Overt [pronoun] vs. [repeated] Name). As in Gordon et al.'s stimuli, the subject RE in the *Continue condition* (e.g., *She* and *Jane*) referred to the discourse entity encoded by the NP in the *subject position* of the first sentence (e.g., [5a]), and the subject RE in the *Shift condition* (e.g., *He* and *Tom*) referred to the discourse entity encoded by the NP in the *object position* of the first sentence. The first and third sentences were identical across the 4 experimental conditions.

(5)   a. Jane woke up Tom at 9 am this morning.
    [Continue] b. *She/Jane* took off the blanket and said, "Wake up!"
    [Shift]   b′. *He/Tom* looked at the alarm and jumped out of bed.
                c. Classes start at 9:30 am.

Japanese participants tested in Experiment 1B read Japanese passages very closely translated from the English passages in Experiment 1A. An example is shown in (6). As can be seen in the critical sentences (6b/6b′), the Japanese stimuli included a third condition, the Null (pronoun) condition indicated by "ø," in addition to the Overt condition and the Name condition.

(6) a. 由香さんは　　　　今朝　　　　9時に　　　　誠君を　　　　　起こしました。
       Yuka-san-wa　　kesa　　　　9-ji-ni　　　　Makoto-kun-o　　okosimasita.
       Yuka-HON-TOP　this-morning　9-o'clock-at　Makoto-HON-ACC　woke-up
       'Yuka woke up Makoto at 9 am this morning.'

    b. [Continue]
       ø／彼女は／由香さんは　　　　毛布を　　　めくって　「起きて！」と　　言いました。
       ø/kanozyo-wa/Yuka-san-wa　moofu-o　　mekutte　"Okite!"-to　　iimasita.
       null/She-TOP/Yuka-HON-TOP　blanket-ACC　took-off　"Wake-up!"-COMP　said
       'ø/She/Yuka took off the blanket and said, "Wake up!"'

    b′. [Shift]
       ø／彼は／誠君は　　　　　目覚まし時計を　　見て　　ベッドから　飛び出しました。
       ø/kare-wa/Makoto-kun-wa　mezamasi-dokei-o　mite　　beddo-kara　tobidasimasita.
       null/He-TOP/Makoto-HON-TOP　alarm-clock-ACC　　looked-at　bed-from　　jumped-out
       'ø/She/Makoto looked at the alarm clock and jumped out of bed.'

    c. 授業は　　　　9時半に　　　　始まります。
       Zyugyoo-wa　9-zi-han-ni　　hazimarimasu.
       class-TOP　　9-o'clock-half-at　start
       'Classes start at 9:30.'

Participants read the passages one sentence at a time, at their own pace, and an RT was measured for each sentence. Three research questions were asked: (i) For our materials, do English natives show the RNP, processing a subject pronoun faster than a repeated name in the Continue condition, but show no RT difference between the two REs in the Shift condition? (ii) Do Japanese natives also show the RNP, processing the two types of subject pronouns faster than a repeated name in the Continue condition, but process a null subject pronoun more slowly than both an overt subject pronoun and a repeated name in the Shift condition? (iii) Do Japanese natives process null and overt subject pronouns according to the expectations of either of the two accounts reviewed above (Table 1)?

3.1. Experiment 1A: Native English adults
3.1.1. Participants

Forty native English-speaking adults took part in this experiment. They were undergraduate and graduate students specializing in various academic subjects at the University of Hawai'i. None of the participants had learned another language before high school. They received either a gift card or course credit for their participation.

3.1.2. Methodology

Twenty sets of experimental passages like (5) were created. The first sentence in each passage introduced 2 human protagonists of different gender into the discourse. Throughout the stimuli, the same 8 (orthographically and phonologically distinct) names—4 clearly male (*Bob*, *Mark*, *Paul*, *Tom*) and 4 clearly female (*Ann*, *Grace*, *Jane*, and *Kate*)—were used in order to minimize the processing load of participants. The gender of these discourse entities was counterbalanced between subject and object positions. The experimental passages were then normed by 4 native English adults who did not participate in the reading experiment. They indicated how naturally the 3 sentences in each passage flowed by using a 4-point Likert scale, from 1 "totally unnatural" to 4 "totally natural." The passages

rated 1 or 2 were subsequently modified based on the raters' comments (see fn. 2 below). In addition to these passages, 34 filler passages were created. Each of these fillers also consisted of 3 sentences. Unlike in the experimental passages, the first sentence of the fillers had either 1 or 2 human protagonists introduced by a proper name (from the set above) and/or a full NP, and, more importantly, the second sentence never contained a pronoun or repeated the RE(s) in the first sentence.

The experimental passages were distributed into 4 stimuli lists in a Latin-square design and mixed with the fillers. In each list, at least 1 filler passage was placed between 2 experimental ones to avoid a potential priming effect of RE preference. Another set of 4 stimuli lists was created by reversing the item order to check for an effect of item order on participants' processing.

Participants were tested individually in a sound-attenuated booth in an experimentation lab. They first completed a fill-in-the-blank proficiency task (see Section 5). They were then seated in front of a 13″ computer running E-Prime 2.0. They were directed to read the passages one sentence at a time, as fast as possible but not too fast because they would need to understand the content accurately. Each trial started with a fixation cross on the left side of the screen. When participants pressed the space bar, the cross was replaced by the first sentence of a passage. After reading this sentence, participants pressed the space bar again and the sentence was replaced by a fixation cross. They repeated this process until the third sentence. After reading the third sentence, they saw a comprehension question such as (for [5] above) "Do classes start at 9 am?" or "What did Jane say?" together with 2 answer options in the center of the screen. These questions were split 50-50 between *yes/no*-questions and forced-choice questions. Participants indicated their answers by pressing either the "d" key or the "k" key. The proficiency task and the reading task together took about 25 minutes to complete.

3.1.3. Results

Participants attended well to the reading task; the mean accuracy on the comprehension questions was 95% (range: 85%–100%). For data trimming, the RTs from incorrectly answered passages were first excluded. Next, for each participant, the remaining RTs for the second sentences (of both the experimental and filler passages) were converted into residual RTs using the number of letters (because most of the repeated names were longer than overt pronouns). The trials with a residual RT longer than 2.5 SD as well as those with a raw RT shorter than 400 ms were excluded as outliers. This treatment affected 3.2% of the data.

Our data analysis focuses on the RTs from the critical sentences (e.g., [5b] vs. [5b′]). We use a mixed ANOVA with Item Order (Original [stimuli lists 1–4] vs. Inverted [stimuli lists 5–8]) as the between-participants factor and RE Type (Overt vs. Name) as the within-participants factor. Note that the RT data from the 2 Discourse-Continuation conditions are analyzed separately, because the critical sentences are syntactically and semantically distinct and so the RTs are assumed to be uncomparable.

Figure 1 and Figure 2 show the mean residual RTs of the critical sentences in the Continue condition and in the Shift condition, respectively.
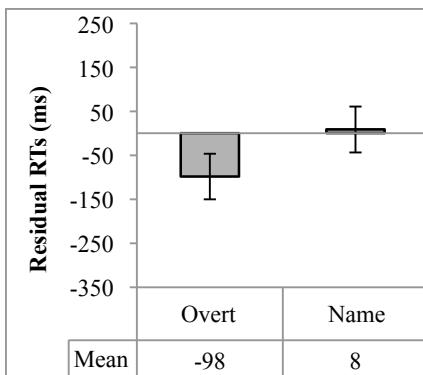

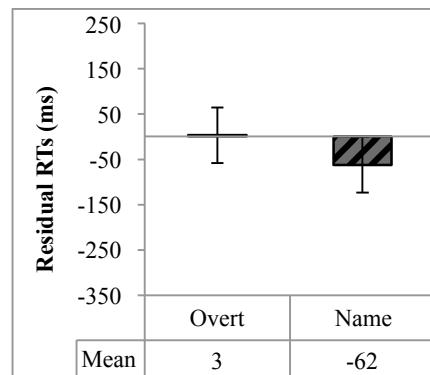Figure 1. English natives' mean RTs in the Continue condition ($n = 40$)

Figure 2. English natives' mean RTs in the Shift condition ($n = 40$)

In the Continue condition, the main effect of RE Type was almost significant in the participant analysis, $F_1(1, 38) = 3.90$, $p = .06$, and reached significance in the item analysis, $F_2(1, 38) = 3.94$, $p = .05$. There was neither a main effect of Item Order, Fs < 1.02; ps > .32, nor an interaction of RE Type and Item Order, Fs < 1; ps > .52. As suggested in Figure 1, the Overt condition was read significantly faster than the Name condition. In the Shift condition, none of the RT comparisons showed a significant difference: no main effect of either RE Type, Fs < 1.11, ps > .29, or Item Order, Fs < 1, ps > .66; no interaction, Fs < 1, ps > .37. The lack of these effects is most likely due to the fact that the gender cue of the overt pronoun was helpful for participants, signaling them to redirect their attention from the discourse entity referred to by the subject to the one referred to by the object. Given that an RT difference was found only in the Continue condition, this indicates that the use of a repeated-name subject for a highly salient discourse entity is infelicitous and leads to processing difficulty (the RNP). Overall, our results replicated Gordon et al.'s (1993) findings.

3.2. Experiment 1B: Native Japanese adults
3.2.1. Participants

Thirty-six native Japanese adults participated in this experiment. They were students at an English language school affiliated with the University of Hawaiʻi. Their knowledge of English was very limited at the time of the experiment; they were placed in the beginning to low-intermediate English levels at the school, and none had a score of 500 or higher on the paper-based Test of English as a Foreign Language (TOEFL). Also, none of them was proficient in an additional language, if they had any. They received a gift card as compensation.

3.2.2. Methodology

The Japanese stimuli involved 30 sets of experimental passages like (6). Of the 30 sets, 20 were very close translations of the English stimuli used in Experiment 1A; because of the additional Null condition, 10 sets of additional passages (and 17 new fillers) were created. All of the passages were written in *kanji* (Chinese characters) as well as in *hiragana* and *katakana* (Japanese syllabaries). The proper names in the English stimuli were replaced by 8 Japanese names: *Kenta* (健太), *Makoto* (誠), *Naoki* (直樹), and *Takashi* (隆), all clearly male; *Aya* (綾), *Mai* (舞), *Rie* (理恵), and *Yuka* (由香), all clearly female. These names have 2 or 3 morae and are written in 1 or 2 kanji characters. Although native Japanese speakers should easily recognize the gender of the referents from those names, the masculine honorific suffix –*kun* (君) and the neutral suffix –*san* (さん) were added to, respectively, the male names and the female names in order to maximally distinguish the discourse entities. These 30 experimental passages were then normed by 4 native Japanese adults.[2]

The experimental passages were distributed into 6 stimuli lists in a Latin-square design and mixed with 51 filler passages (the very close Japanese translations of the 34 English fillers and the 17 new fillers). As in the English stimuli, there was at least 1 filler passage placed between 2 experimental passages. Another set of 6 lists was created by reversing the item order. Participants were tested individually in an empty classroom at the language school. The reading task was conducted using the same procedure as in Experiment 1A. The experiment lasted for about 25 minutes.

3.2.3. Results

The Japanese natives' mean comprehension accuracy was 94% (range: 83%–100%), which was comparable to that of the English natives in Experiment 1A. The same methods of data-trimming and residual-RT conversion from Experiment 1A were followed, except that the number of characters (rather than letters) was used to calculate residual RTs. This treatment affected 2.4% of the data.

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[2] The extra 10 Japanese experimental passages were very closely translated into English, in order to include these translations in the English version of the norming task. The 4 English-version raters and the 4 Japanese-version raters thus saw the same 30 experimental passages written in, respectively, English and Japanese. The modifications made to low-rated English passages were also made to their Japanese counterparts, and vice versa.

Figures 3 and 4 show the mean residual RTs of the critical sentences in, respectively, the Continue condition and the Shift condition.
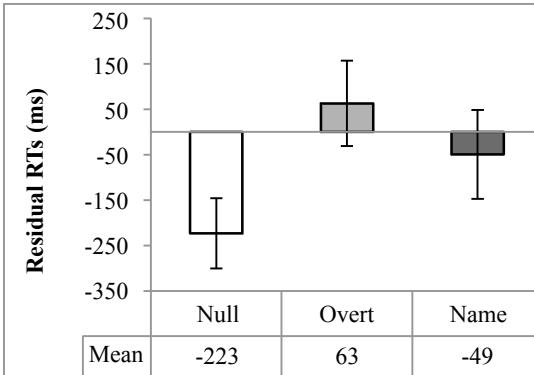

	Null	Overt	Name
Mean	-223	63	-49

Figure 3. Japanese natives' mean RTs in the Continue condition ($n = 36$)

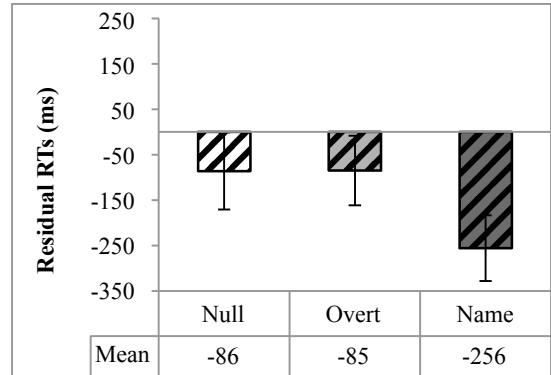|	Null	Overt	Name
Mean	-86	-85	-256

Figure 4. Japanese natives' mean RTs in the Shift condition ($n = 36$)

In the Continue condition, the main effect of RE Type (Null, Overt, Name) was significant, $F_1(2, 68) = 6.43$, $p < .01$; $F_2(2, 116) = 11.98$, $p < .001$, but there was neither a main effect of Item Order, $F_1(1, 34) = 2.14$, $p = .15$; $F_2(1, 58) = 1.25$, $p = .27$, nor an interaction of RE Type and Item Order, Fs < 1; ps >.65. Since the RT patterns for the 3 RE conditions were not different between the 2 Item-Order groups, the participants are collapsed in further analyses. Pairwise comparisons revealed a significant RT difference between the Null and Overt conditions, $t_1(35) = 3.97$, $p < .01$; $t_2(29) = 3.41$, $p < .01$, as well as between the Null and Name conditions, $t_1(35) = 2.28$, $p = .03$; $t_2(29) = 2.37$, $p = .03$; the RT difference between the Overt and Name conditions was significant only in the item analysis, $t_1(35) = 1.25$, $p = .22$; $t_2(29) = 2.12$, $p = .04$.

Turning to the Shift condition, the main effect of RE Type was significant, $F_1(2, 68) = 4.02$, $p = .02$; $F_2(2, 116) = 4.86$, $p < .01$, but not the main effect of Item Order, Fs < 1, ps > .59, or the interaction of RE Type and Item Order, Fs < 1, ps > .54. Pairwise comparisons after collapsing the 2 Item-Order groups showed that the RT difference between the Null condition and the Overt condition was not significant, ts < 1, ps > .67, but the RT difference reached significance both between the Null and Name conditions, $t_1(35) = 2.41$, $p = .02$; $t_2(29) = 2.30$, $p = .03$, and between the Overt and Name conditions, $t_1(35) = 2.74$, $p = .01$; $t_2(29) = 2.08$, $p = .05$.

These results can be interpreted as follows: (a) In the Continue condition, the Name condition was processed more slowly than the Null condition (i.e., the RNP), but in the Shift condition, it was processed faster than the Null and Overt conditions. This suggests that using a repeated-name subject for a highly salient discourse entity is infelicitous and thus leads to processing difficulty; however, it is felicitous to use a repeated name for a less-salient entity. (b) In the Continue condition, the Null condition was processed faster than the Overt and Name conditions, but in the Shift condition, it was processed more slowly than the Name condition. This suggests that a null subject pronoun, but not an overt one, is preferred for a highly salient discourse entity but is not preferred for a less-salient entity. (c) The Overt condition yielded the longest RTs in both the Continue and Shift conditions.[3] This RT disadvantage for Japanese overt subject pronouns will be addressed in the next section.

3.3. Discussion of Experiment 1

One of the purposes of Experiment 1 was to see whether native English-speaking and native Japanese-speaking adults reading our materials exhibit the RNP, i.e., show processing difficulty for a repeated name referring to a highly salient discourse entity. The results from Experiments 1A and 1B indicate the RNP in both languages: In the Continue condition, English natives processed a pronoun

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[3] In the Shift condition, the RTs of the Overt and Null conditions were essentially identical (−85 ms vs. −86 ms), both significantly slower than the preferred Name condition (−256 ms).

faster than a repeated name (replicating the results of Gordon et al., 1993) and Japanese natives processed a null pronoun faster than a repeated name. Previous studies analyzing Japanese speakers' narratives (e.g., Clancy, 1980; Nakahama, 2009) provided strong evidence of a null-pronoun preference for a continued discourse topic. Here we provided additional evidence of this from an online reading task.

The other purpose of the experiment was to see whether Japanese natives, like Chinese natives, (a) process a null pronoun and an overt pronoun equally faster than a repeated name when they refer to the entity encoded by the subject of the preceding sentence (the Continue condition) but (b) process a null pronoun more slowly than an overt pronoun and a repeated name when they refer to the entity encoded by the object of the preceding sentence (the Shift condition). It turned out that the RT patterns predicted for Japanese overt pronouns—based on the RT patterns of Chinese overt pronouns from Yang et al. (1999)—were not found. In the Continue condition, Japanese speakers processed a null pronoun faster than *both* an overt pronoun and a repeated name. This RT pattern cannot be explained by Gordon and Hendrick's (1998) model, which posits the same construction rule for the two types of pronouns and thus expects a similar processing pattern. In the Shift condition, Japanese speakers processed *both* a null pronoun and an overt pronoun equally more slowly than a repeated name. This, too, contrasts with the Chinese speakers' results in Yang et al., which showed an RT advantage in this condition for a (gender-disambiguating) overt pronoun compared to a null pronoun; in fact, this latter RT pattern in Japanese is problematic for both Gordon and Hendrick's model and salience approaches because they would expect the gender cue of the overt pronoun to facilitate processing.

Then how can we make sense of the Japanese RT patterns? One possibility is that Japanese overt pronouns are hard to process in comprehension simply because of their low incidence in production. Even though the grammar of Japanese allows a proper name (and other NPs) to serve as the antecedent for an overt pronoun (as in [3] above), the infrequency of overt pronouns in language use could hinder the processing of them. It is possible that since the 'division of labor' of overt pronouns is not the same across languages (compare, e.g., English vs. Chinese vs. Japanese), the grammatical status of overt pronouns also varies crosslinguistically, and therefore some syntactic or semantic features specific to Japanese overt pronouns (if pronouns indeed they be) underlie their infrequency. Another way to think about the results is that RE forms are not hierarchically organized on a single scale of referent salience. Kaiser and Trueswell (2008) propose that in Finnish, the interpretation of the pronoun *hän* ('s/he') is influenced by the syntactic position (e.g., subject vs. object) of the potential antecedent, whereas the interpretation of the demonstrative *tämä* ('this') is influenced by both syntactic role of the antecedent and word order (e.g., SVO vs. OSV). Their Finnish natives' interpretation patterns could not be explained by accounts that regard all RE forms as being sensitive to the same factor(s) (e.g., referent salience). This leads the authors to put forward their form-specific multiple-constraints approach, which views each RE form as differentially sensitive to (sets of) factors. When this approach is applied to Japanese REs, a certain factor (or set of factors) besides referent salience should determine the felicitousness of a null pronoun vs. an overt pronoun. Further research is needed to address this issue.

4. Processing of REs by L2ers

In light of the English and Japanese findings from Experiment 1, we next examine the processing of REs in discourse by intermediate-to-advanced L1-Japanese L2ers of English.

Acquiring target-like RE use is not a simple task. In addition to learning the RE forms available in the Target Language (TL), L2ers need to be able to calculate the relative salience levels of discourse entities and then select an appropriate RE for an intended referent (in production) and select an intended referent/antecedent for a given RE (in comprehension). The task will presumably be harder if a particular type of RE form carries different discourse functions in their L1 and TL. Several previous studies have found L2ers' nontarget-like use of REs.

Blackwell and Quesada (2012) compared L2-Spanish learners' and Spanish natives' choice of REs while retelling the story of a silent film. They found that L2ers from beginning to advanced levels were over-explicit compared to the natives; for the most salient, "in focus" discourse entities, whereas 90% of the REs that Spanish native speakers produced were null pronouns, L2ers produced 61%–65% null pronouns and 24%–26% overt pronouns.

In another production study, Nakahama (2009) had L1-English and L1-Korean L2ers of Japanese along with Japanese native speakers look at pictures in a book and narrate the story in Japanese. She found that the intermediate and advanced L2ers as well as Japanese natives produced null pronouns for continued topics 84%–92% of the time, whereas the beginning L2ers did so only 61%–71% of the time, a significantly smaller proportion than those of the 3 other groups. In addition, the L1-English L2ers and the L1-Korean L2ers had a similar pattern of RE use. This is interesting in that Japanese and Korean natives use null pronouns for continued topics and so more null pronouns were expected from the L1-Korean L2ers than the L1-English L2ers. The author concludes that the distribution of REs in the L2ers' narratives can be explained by L2 proficiency, but not by L1 influence.[4]

Nontarget-like use of REs was also reported in L2 studies of ambiguity resolution of pronoun reference. For instance, Belletti, Bennati, and Sorace (2007) and Sorace and Filiaci (2006) tested near-native L1-English L2ers of Italian and Italian natives in a picture verification task, where participants read a sentence with a referentially ambiguous subject pronoun, either null or overt, like in (7) and indicated which of 3 pictures matched the meaning of the sentence.

(7) Appena ø/lui chiude la borsa, il fattorino dà il denaro al cassiere.
     'As soon as ø/he closes the bag, the delivery man gives the money to the cashier.'

                                                    (adapted from Belletti et al., 2007, p. 667, [14])

The results showed that although the near-native L2ers were target-like in interpreting the subject (e.g., the delivery man) as the antecedent for the null pronoun, they were, however, more likely than the Italian natives to interpret the overt pronoun as also taking the subject as its antecedent. Sorace (2011) suggests that the nontarget-like interpretation of such overt subject pronouns is likely due to the difficulty of coordinating lexical/morphosyntactic information with discourse/pragmatic information.

Similarly, Wilson, Sorace, and Keller (2009) looked at L2ers' interpretation of referentially ambiguous subject REs—but this time, comparing a pronoun vs. a demonstrative in German discourses like (8)—using a visual-world eye-tracking task.

(8) Der   Kellner erkennt   den   Detektiv als das Bier umgekippt wird.
     The.MASC.SG.NOM waiter   recognizes the.MASC.SG.ACC detective als the beer tipped-over is
     'The waiter recognizes the detective as the beer is tipped over.'

     Er/Der   ist offensichtlich sehr fleißig.
     he.pron/he.dem is clearly   very hard-working
     'He is clearly hard working.'

                                                    (adapted from Wilson et al., 2009, p. 637, [2a])

When German natives processed the pronoun *Er* ('he') in the second sentence of (8), they had similar proportions of looks to (the image of) the entity referred to by the subject NP (e.g., the waiter) and to the one referred to by the object NP (e.g., the detective), thereby showing no antecedent preference; by contrast, when they processed the demonstrative *Der* in the second sentence, they showed a strong object-antecedent preference (Wilson, Keller, & Sorace, 2007).[5] The L2ers of German had very different processing patterns: For the pronoun, they exhibited a subject-antecedent preference, but for the demonstrative, they showed no antecedent preference. This lack of an antecedent preference for the demonstrative, an RE form more explicit than a pronoun, implies that the L2ers considered not only the NP object as a suitable antecedent for it but also the NP subject. This is somewhat akin to the

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[4] It should nevertheless be noted that although *t*-tests comparing the proportions of null-pronoun use between the 2 L1-based L2 groups, at each proficiency level, did not reach significance, the numerical tendencies go as expected: The rate of null-pronoun production was always higher for the L1-Korean L2 group than for the L1-English L2 group (e.g., at the beginning level, L1-Korean L2ers, 71%; L1-English L2ers, 61.3%).

[5] Word order was another factor in the experimental design (SVO vs. OVS), but discussing the results of the SVO condition (illustrated in [8]) suffices for our purposes. Note also that the absence of an antecedent preference for the pronoun is not consistent with the RE hierarchy in (1), which would expect a subject-antecedent preference.

results in Belletti et al.'s (2007) near-native L2ers, who chose, at a rate higher than that of Italian natives, a subject antecedent for an overt pronoun, an RE form more explicit than a null pronoun.

The studies reviewed above reported L2ers' nontarget-like use of REs, but we wonder if their problems are partly due to processing costs induced by the experimental tasks. Generally, narrating a story in an L2 is hard. L2ers need to build discourse representations in their mind, select and retrieve appropriate lexical items as well as construct morphosyntactic structure to describe the events, and utter the sentences. In fact, Nakahama (2009) noted that her beginning-level L2ers frequently shifted discourse topics because they seemed to lack the vocabulary necessary to complete their descriptions. As for Belletti et al.'s (2007) picture verification task, participants were presented with a bi-clausal sentence and 3 similar pictures and had to select the picture(s) matching the sentence; this task is harder than one that provides one sentence with one picture and asks participants to judge whether the picture and the sentence match. It is possible that these complex tasks unnecessarily increased the processing load of L2ers and so their true ability of processing REs in discourse was not revealed. In a similar vein, resolution of global ambiguity is inherently costly. In sentences like (7) above, although Italian natives have a preference for the non-subject antecedent for the overt pronoun, their grammar does not *prohibit* the subject from being the antecedent (e.g., at a rate of 20% in Belletti et al.); this is also evident in the data from German natives reading sentences like (8), whose referent interpretation for the pronoun was split between subject and object as the antecedent. Various discourse and processing factors need to be considered when selecting an appropriate antecedent from two or more grammatically possible ones; therefore, resolution of global ambiguity likewise taxes the processing of L2ers, who are already under the pressure of processing sentences in a nonnative language.

How increased processing cost influences L2ers' processing of REs is still unclear, but there is evidence that native speakers tend to become over-explicit in production. Arnold and Griffin (2007) asked native English adults to look at pairs of pictures, some of which contained only 1 character (e.g., Mickey Mouse) and others 2 gender-mismatched characters (e.g., Mickey [male] and Daisy [female]). Participants next read out the description sentence provided with the first picture (e.g., *Mickey went for a walk [with Daisy] in the hills one day*) and then narrated on their own the event depicted in the second picture. Arnold and Griffin found that to refer to a sole entity in the second picture, participants predominantly used a subject pronoun, but when referring to 1 of the 2 entities in the other type of second picture, they tended to prefer a repeated name even though a pronoun could clearly distinguish between the gender-mismatched entities. Arnold and Griffin argue that discourse entities compete for available attentional resources and that if the resources allocated to an entity in the speaker's mental representations are reduced by the existence of another entity, the salience of the target entity is also reduced and therefore a more explicit RE becomes necessary. When a similar logic is applied to L2ers, those tested in a cognitively demanding task should have to reduce the attentional resources allocated to discourse entities in their representations because a certain portion of these resources needs to be diverted to performing the task. The L2ers might then be more likely to depend on a more explicit RE for an intended entity, to compensate for the reduced attentional resources now allocated to that entity.

For these reasons, the present study therefore reduces task complexity by using a simple self-paced reading task and discourses without referential ambiguity to see if L2ers can achieve target-like performance, patterning like English-speaking natives in Experiment 1A. We also divide our L2ers into 2 proficiency groups to see if lower-proficiency L2ers, in order to compensate for their insufficiency of cognitive resources, depend more on more explicit REs than higher-proficiency L2ers do. Another possible outcome for the lower-proficiency L2ers is that their RT patterns may be similar to those of Japanese natives in Experiment 1B. The next section presents the results from our L2ers. Note that our data collection is still ongoing; the results are only preliminary.

5. Experiment 2: L1-Japanese L2ers of English
5.1. Participants

Thirty-three L1-Japanese L2ers of English participated in the experiment. They were Japanese students (age 18 or older) who either were learning academic English in a language school affiliated with the University of Hawai'i or had already been admitted as regular students. The students at the language school were placed in the high-intermediate level or the advanced level at the time of the

experiment. All of the L2ers had English proficiency equivalent to a score of 500 or higher on the paper-based TOEFL. They received either a gift card or course credit as compensation. In order to see how the L2ers' proficiency in English might influence their processing of REs, they were divided into 2 proficiency groups based on their C-test scores (Table 2).[6]

Table 2. Mean C-test scores for the native English controls and the two L2 groups

Group	n	C-test score (max = 60)		
		M	SD	Range
English natives (Experiment 1A)	40	46.7	6.6	35–59
Higher-proficiency L2ers	14	34.4	7.4	26–48
Lower-proficiency L2ers	19	20.9	3.8	14–25

5.2. Methodology

The L2 participants completed (the same C-test and) the same self-paced reading task used in Experiment 1A. The sample experimental passages (5a-b-c) and (5a-b′-c) are repeated here as (9a-b-c) and (9a-b′-c). The L2ers who were enrolled in the language school were tested individually in an empty classroom, and the other participants in a sound-attenuated booth at the University of Hawai'i. They took about 35 minutes in total to finish both the C-test and the reading task.

(9) a. Jane woke up Tom at 9 am this morning.
[Continue] b. *She/Jane* took off the blanket and said, "Wake up!"
[Shift] b′. *He/Tom* looked at the alarm and jumped out of bed.
  c. Classes start at 9:30 am.

5.3. Results

The L2ers' mean accuracy on the comprehension questions from the reading task was 96% (range: 87%–100%), comparable to the accuracy results of Experiments 1A and 1B. The same data-trimming and RT-conversion methods from Experiment 1A were used here. The treatment affected 2.9% of the data. It turned out that none of the RT comparisons led to significant difference in the L2ers' data (and hence more L2 data are clearly needed), so our discussion will remain in numerical tendencies.

Figures 5 and 6 show the higher-proficiency L2ers' mean residual RTs of the critical sentences in, respectively, the Continue and Shift conditions.
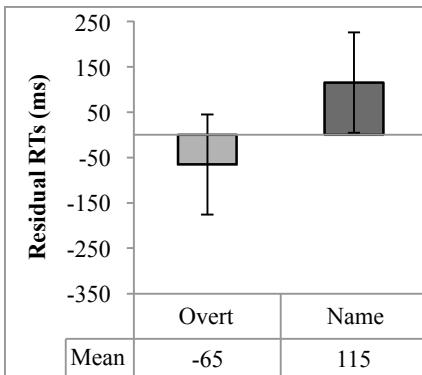

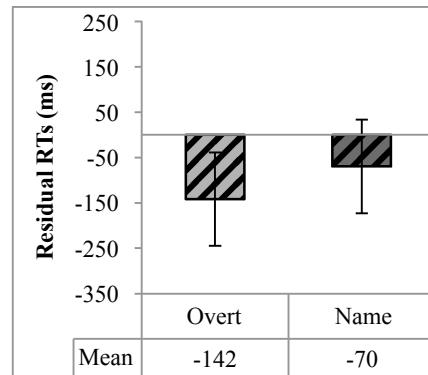Figure 5. Higher-proficiency L2ers' mean RTs in the Continue condition (*n* = 14)

	Overt	Name
Mean	-65	115

Figure 6. Higher-proficiency L2ers' mean RTs in the Shift condition (*n* = 14)

	Overt	Name
Mean	-142	-70

[6] We administered the C-test used in Schulz (2006). It consisted of 3 different (coherent) texts, in which 60 of the words (in total) were replaced by blanks except for the first few letters. Participants were expected to complete each word using all the linguistic and discourse/pragmatic clues as best they could.

The data indicate that in the Continue condition (Figure 5), the L2ers read the Name condition 180 ms more slowly than the Overt condition, and that in the Shift condition (Figure 6), the RT difference was reduced to 72 ms. Although we do not know whether the difference in either condition is real, the overall RT patterns for this higher-proficiency L2 group resemble those for English natives in Experiment 1A (viz., the RNP in the Continue condition; no RT difference in the Shift condition).

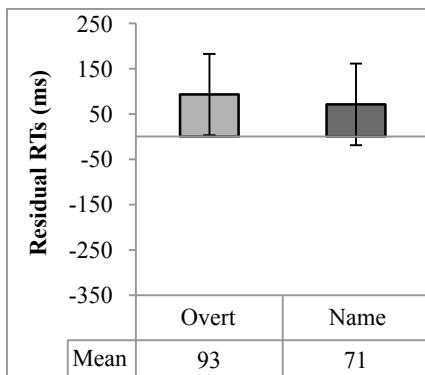The lower-proficiency L2ers' mean residual RTs are provided in Figures 7 and 8.

	Overt	Name
Mean	93	71

Figure 7. Lower-proficiency L2ers' mean RTs in the Continue condition (*n* = 19)

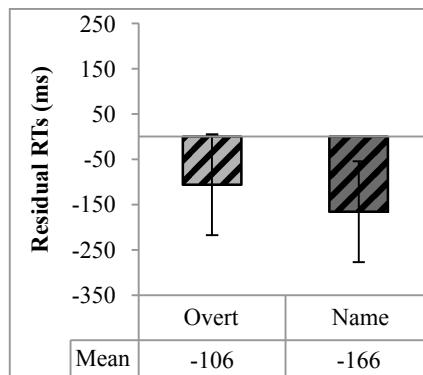|	Overt	Name
Mean	-106	-166

Figure 8. Lower-proficiency L2ers' mean RTs in the Shift condition (*n* = 19)

In the Continue condition, the RTs in the two RE conditions were almost the same, the Name condition being read only very slightly faster than the Overt condition. This pattern contrasts with the pattern of the higher-proficiency L2ers (Figure 5) and English natives (Figure 1) which showed an RT advantage for Overt over Name; rather, it is similar to the lack of a clear RT difference between Overt and Name for Japanese natives in Experiment 1B (Figure 3). The Shift condition showed a small numerical advantage for the Name condition; a similar albeit statistically significant RT pattern was found for Japanese natives in Experiment 1B (Figure 4).

5.4. Discussion of Experiment 2

This experiment looked at the processing of English REs in discourse by L1-Japanese L2ers of English, divided into 2 proficiency groups. It was hypothesized (i) that L2ers would show more native-like processing of REs in a simpler, cognitively less-demanding task, (ii) that lower-proficiency L2ers would depend on repeated names more strongly than higher-proficiency L2ers in order to compensate for their reduced attentional resources allocated to the intended discourse entity (see Section 4 above), and (iii) that higher-proficiency L2ers would be more likely to show target-like patterns of RE processing.

Our preliminary results are so far partly compatible with prediction (i): Although the lower-proficiency L2ers did not show much RT difference between Overt and Name in either the Continue condition or the Shift condition, the higher-proficiency L2ers showed a large RT advantage for Overt in only the Continue condition. The latter can be interpreted as a clear tendency for the target-like pronoun preference (i.e., a clear tendency pointing to the RNP). Unlike previous studies that tested advanced to near-native L2ers on a cognitively demanding task and found nontarget-like use of REs, the present study using a simple reading task seems (likely) to be able to elicit target-like RE processing at least in the higher-proficiency L2ers (L2ers at high-intermediate to advanced levels).

Prediction (ii) was not supported by our current data. As Figures 7 and 5 show, the lower-proficiency L2ers, unlike the higher-proficiency L2ers, did not show much, if any, of a preference for Name over Overt in the Continue condition, spending only very slightly more time processing the sentences in the Overt condition (93 ms) than in the Name condition (71 ms). In the Shift condition, Name was read faster than Overt (–166 ms vs. –106 ms), but the English natives' data also showed a slightly shorter RT in the Name condition (a difference of 65 ms); so whether a general repeated-name preference exists in the lower-proficiency L2ers is unclear.

As for prediction (iii), our data so far are compatible with it. As reported above, the higher-proficiency L2ers showed a numerical RT advantage for Overt in only the Continue condition, paralleling the RNP found in English natives. On the other hand, the lower-proficiency L2ers' RT patterns could be interpreted as a transition from L1-Japanese to TL-English: In the Continue condition, (a) Japanese natives in Experiment 1B showed a slight disadvantage for the Overt condition compared to the Name condition, (b) the lower-proficiency L2ers showed almost equal RTs in the 2 conditions, and (c) English natives in Experiment 1A had a clear advantage for the Overt condition; in the Shift condition, (a) Japanese natives had a clear Name preference, and (b) the lower-proficiency L2ers and English natives showed only a numerical Name advantage. Clearly, more data from L1-Japanese L2ers are necessary to substantiate (or not) this interpretation of the lower-proficiency L2 data, i.e., that they indicate a transition from L1-Japanese to TL-English. Indeed, one could not conclude with any certainty that our lower-proficiency L2ers are or are not influenced by their L1 until they are compared with another group of proficiency-matched L2ers with a distinct L1. For this reason, we are currently testing L1-Chinese L2ers of English on exactly the same tasks with exactly the same materials (as well as testing Chinese natives on a very closely translated Chinese version of the Japanese self-paced reading task). If different RT patterns emerge for the two L1-based L2 groups (between, especially, the lower-proficiency subgroups), this would point to L1 influence as the cause.

6. Conclusion

This study's main goal was to start to examine how L1-Japanese L2ers of English process REs in English discourse. Specifically, we probed whether they experience processing difficulty in a discourse where an RE is over-explicit for its intended salient referent. Experiment 1A tested English natives in a sentence-by-sentence self-paced reading task modeled on Gordon et al. (1993) to see whether our materials can elicit the Repeated Name Penalty. The RT results indicated that this is the case; when the discourse entity to which the subject in the first sentence refers continues as the topic of the second sentence (the Continue condition), English natives processed sentences with a repeated-name subject more slowly than with a subject pronoun (the RNP), but the RT difference disappeared when the topic shifted in the second sentence to the entity to which the object in the first sentence refers (the Shift condition). Experiment 1B also found the RNP in the Continue condition for Japanese natives who read the Japanese materials very closely translated from Experiment 1A. But this time, Japanese natives took longer processing sentences with a repeated name than with a null pronoun—and an overt subject pronoun elicited the longest RT of all. Indeed, the overt pronoun was dispreferred not only when it had a subject antecedent, but also when it (like the null pronoun) had an object antecedent.

The preliminary results from our intermediate-to-advanced L1-Japanese L2ers reading the English materials indicated that the lower-proficiency L2ers did not show a clear RE-preference tendency between subject pronoun and repeated-name subject in either the Continue condition or the Shift condition, but the higher-proficiency L2ers did show a pronoun-preference tendency in the Continue condition (≈ the RNP). Although no RT comparisons in the L2 data have so far yielded statistical significance, the numerical RT tendencies suggest that the L2ers are in transition: Lower-proficiency L2ers' RT patterns are similar to Japanese natives', whereas higher-proficiency L2ers' RT patterns are similar to English natives'. More data will be collected to see if this interpretation is tenable. We also suggest that a simple reading task like the one used in this study may be a good instrument to examine L2ers' ability to coordinate lexical/morphosyntactic information and discourse/pragmatic information as it does not involve language production or global ambiguity, both of which exacerbate the processing load of L2ers and may conceal L2ers' fundamental processing potential.

References

Ariel, Mira. (1990). *Accessing noun-phrase antecedents*. New York: Routledge.

Arnold, Jennifer E. (2010). How speakers refer: The role of accessibility. *Language and Linguistics Compass*, *4*(4), 187–203.

Arnold, Jennifer E., & Griffin, Zenzi M. (2007). The effect of additional characters on choice of referring expression: Everyone counts. *Journal of Memory and Language*, *56*(4), 521–536.

Belletti, Adriana, Bennati, Elisa, & Sorace, Antonella. (2007). Theoretical and developmental issues in the syntax of subjects: Evidence form near-native Italian. *Natural Language and Linguistic Theory*, *25*(4), 657–689.

Blackwell, Sarah E., & Quesada, Margaret Lubbers. (2012). Third-person subjects in native speakers' and L2 learners' narratives: Testing (and revising) the Givenness Hierarchy for Spanish. In Kimberly Geeslin & Manuel Díaz-Campos (Eds.), *Selected proceedings of the 14th Hispanic Linguistics Symposium* (pp. 142–164). Somerville, MA: Cascadilla Proceedings Project.

Clancy, Patricia M. (1980). Referential choice in English and Japanese narrative discourse. In Wallace L. Chafe (Ed.), *The pear stories: Cognitive, cultural, and linguistic aspects of narrative production* (pp. 127–202). Norwood, NJ: Ablex.

Givón, Talmy. (1983). *Topic continuity in discourse: A quantitative cross-language study*. Philadelphia: John Benjamins.

Gordon, Peter C., Grosz, Barbara J., & Gilliom, Laura A. (1993). Pronouns, names, and the centering of attention in discourse. *Cognitive Science*, *17*(3), 311–347.

Gordon, Peter C., & Hendrick, Randall. (1998). The representation and processing of coreference in discourse. *Cognitive Science*, *22*(4), 389–424.

Grice, H. P. (1975). Logic and conversation. In Peter Cole & Jerry L. Morgan (Eds.), *Syntax and semantics volume 3: Speech acts* (pp. 41–58). New York: Academic Press.

Grosz, Barbara J., Joshi, Aravind K., & Weinstein, Scott. (1995). Centering: A framework for modeling the local coherence of discourse. *Computational Linguistics*, *21*(2), 203–225.

Gundel, Jeanette K., Hedberg, Nancy, & Zacharski, Ron. (1993). Cognitive status and the form of referring expressions in discourse. *Language*, *69*(2), 274–307.

Hinds, John. (1983). Topic continuity in Japanese. In Talmy Givón (Ed.), *Topic continuity in discourse: A quantitative cross-language study* (pp. 43–93). Philadelphia: John Benjamins.

Hoji, Hajime. (1990). On the so-called overt pronouns in Japanese and Korean. In Eun-Jin Baek (Ed.), *Papers from the seventh International Conference on Korean Linguistics* (pp. 61–78). Toronto: University of Toronto Press.

Hoji, Hajime. (1991). Kare. In Carol Georgopoulos & Roberta Ishihara (Eds.), *Interdisciplinary approaches to language: Essays in honor of Prof. S.-Y. Kuroda* (pp. 287–304). Dordrecht: Reidel.

Huang, Yan. (2000). Discourse anaphora: Four theoretical models. *Journal of Pragmatics*, *32*(2), 151–176.

Kaiser, Elsi, & Trueswell, John C. (2008). Interpreting pronouns and demonstratives in Finnish: Evidence for a form-specific approach to reference resolution. *Language and Cognitive Processes*, *23*(5), 709–748.

Kamp, Hans, & Reyle, Uwe. (1993). *From discourse to logic: Introduction to modeltheoretic semantics of natural language, formal logic, and discourse representation theory*. Norwell, MA: Kluwer Academic Publishers.

Nakahama, Yuko. (2009). Cross-linguistic influence on referent introduction and tracking in Japanese as a second language. *The Modern Language Journal*, *93*(ii), 241–260.

Noguchi, Tohru. (1997). Two types of pronouns and variable binding. *Language*, *73*(4), 770–797.

Obana, Yasuko. (2003). Anaphoric choices in Japanese fictional novels: The discourse arrangement of noun phrases, zero and third person pronouns. *Text*, *23*(3), 405–443.

Okuma, Tokiko. (2011). Acquisition of topic shift by L1 English speakers of L2 Japanese. In Julia Herschensohn & Darren Tanner (Eds.), *Proceedings of the 11th Generative Approaches to Second Language Acquisition Conference* (pp. 90–100). Somerville, MA: Cascadilla Proceedings Project.

Schulz, Barbara. (2006). Wh-*scope marking in English interlanguage grammars: Transfer and processing effects on the second language acquisition of complex* wh-*questions* (Doctoral dissertation, University of Hawai'i). Retrieved from ProQuest Dissertations and Theses. (UMI No. 3288328)

Sorace, Antonella. (2011). Pinning down the concept of "interface" in bilingualism. *Linguistic Approaches to Bilingualism*, *1*(1), 1–33.

Sorace, Antonella, & Filiaci, Francesca. (2006). Anaphora resolution in near-native speakers of Italian. *Second Language Research*, *22*(3), 339–368.

Wilson, Frances, Keller, Frank, & Sorace, Antonella. (2007, February). *Antecedent preferences of personal pronouns and anaphoric demonstratives in German in comprehension*. Paper presented at DGfS Annual Meeting, Siegen, Germany.

Wilson, Frances, Sorace, Antonella, & Keller, Frank. (2009). Antecedent preferences for anaphoric demonstratives in L2 German. In Jane Chandlee, Michelle Franchini, Sandy Lord & Gudrun-Marion Rheiner (Eds.), *Proceedings of the 33rd annual Boston University Conference on Language Development* (pp. 634–645). Somerville, MA: Cascadilla Press.

Yang, Chin Lung, Gordon, Peter C., Hendrick, Randall, & Wu, Jei Tun. (1999). Comprehension of referring expressions in Chinese. *Language and Cognitive Processes*, *14*(5/6), 715–743.

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