Chapter 5. Bi-modal tracking of animate referents in L1 and L2

5.0 Introduction

In the previous chapter, we presented analyses of how animate referents are introduced in two modes of expressions in L1 Dutch, L1 Japanese and L2 Japanese discourse production. Once introduced, some referents are further tracked as the narrative unfolds. Thus, the present chapter focuses on linguistic and gestural (henceforth: bi-modal) tracking of animate referents. The chapter is divided into two large sections. The first section presents cross-linguistic analyses, followed by analyses of L2 production.

5.1 Linguistic tracking of animate referents in L1 Dutch and Japanese

For the analysis of referent tracking, two types of referent informational status are distinguished: maintained and re-introduced. Let us review the definitions of these terms. A referent is maintained if it has been assigned subject role and is co-referential with either the subject in the immediately preceding clause, or an entity that has been introduced somewhere in the immediately preceding clause. A referent is re-introduced if it has been assigned subject role, has already been introduced prior to the preceding clause, and is thus different from the preceding subject. We have tallied all the tracked referents in L1 Dutch and Japanese speech production.

5.1.1 Referential forms denoting maintained referents

A total of 652 maintained referents were found in the L1 narratives. Of the 652 referents, 245 occurred in L1 Dutch and 407 in L1 Japanese. Table 5.1 shows the distribution of the linguistic forms for the maintenance of animate referents in the L1 narratives. They are largely divided into NPs and attenuated forms (pronominals and Ø). In L1 Dutch, NPs consist of nouns with definite articles (e.g. het jongetje ‘the boy’) or very occasionally demonstratives (e.g. dat jongetje ‘that boy’). Proper names (e.g. Jan) are also treated as NPs. The combination of a left-dislocated noun and a pronoun, such as de kikker die in (1), was treated as one referential form and was coded as a NP.

(1) En de kikker die sprong uit z’n pot

*And the frog he jumped out of his jar*
The reasons for this treatment are twofold. Firstly, the analyses of dislocated structures, forms frequently observed in French narratives, show that the dislocated element and the pronoun within the same clause form one reference to the denoted entity (e.g. Lambrecht 1981, in Hickmann & Hendriks 1999). Secondly, the identity of the intended referent is clearly indicated linguistically by the dislocated noun. From the viewpoint of the informational flow, the effect is more similar to NPs than to pronominal. Attenuated forms used in the Dutch narratives consist of various types of personal pronouns (e.g. *hij*, *die*, *ze*) and zero marking (ø).

Japanese NPs consist of either bare nouns or nouns with demonstratives (e.g. *sono shonen* ‘that boy’). Japanese L1 speakers in the data rarely use pronouns as referential forms. Instead, zero-marking (ø) is frequently used as the attenuated form, in accordance with findings in the literature (cf. Clancy 1980; Hinds 1983, 1984; Iwasaki 2002; Kuno 1973, 1978; Yanagimachi 1997).

![Figure 5.1](image)

**Figure 5.1.** Frequencies of referential forms used for *maintained* referents

Figure 5.1 shows the frequencies of linguistic forms used by the Dutch and Japanese speakers for maintaining reference (see appendix C for raw figures). 72% of the *maintained* referents in L1 Dutch narratives are expressed by pronouns. In contrast, 75% of such referents in Japanese narratives are expressed by ø. Dutch speakers use ø-marking significantly less (15%) than their Japanese counterparts. In fact, the Dutch speakers use pronouns about as frequently as the Japanese use ø (cf. Clancy 1980 for similar findings for English and Japanese native narratives). As for the use of NPs, 13% of the *maintained* referents are so expressed in the Dutch narratives. The figure for the Japanese narratives is 25%.

As in Chapter 4, for quantitative analyses, firstly, an omnibus analysis of variance was run on the data from three groups, namely L1 Dutch, L1 Japanese and L2 Japanese. A repeated measures analyses of variance with language groups as a 3-level between-subjects factor and the use of NP as a 2-level within-subjects factor show that there is a group effect for the use of NPs (*F*(2, 39) = 12.57, *p* < .001).

<table>
<thead>
<tr>
<th></th>
<th>mean difference</th>
<th>Std. Error</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1 Dutch</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L2 Japanese</td>
<td>-.258*</td>
<td>.056</td>
<td>.000</td>
</tr>
<tr>
<td>L1 Japanese</td>
<td>-.132*</td>
<td>.043</td>
<td>.020</td>
</tr>
<tr>
<td>L2 Japanese</td>
<td>.125</td>
<td>.049</td>
<td>.054</td>
</tr>
</tbody>
</table>

**Table 5.1.** Frequency of NP denoting *maintained* referents (Dunnett T3)
We will only report the results of the post hoc analyses in relation to the cross-linguistic differences. The results of analyses using Dunnett T3 post hoc criterion for significance indicate that Japanese native speakers used NPs more frequently to denote maintained referents than their Dutch counterparts (Table 5.1). Thus, further analysis was performed.

5.1.2 NPs denoting maintained referents
The NPs used for maintaining reference in the L1 Dutch and Japanese narratives were analysed with respect to the contexts in which they occur. Each maintained NP is further coded according to the form of its co-referent in the preceding clause. Four contexts of preceding-clause co-reference are identified: a) co-reference with an NP newly introduced in the preceding clause (NI), b) co-reference with an NP already introduced prior to the preceding clause, where it occupies subject role (NS), c) co-reference with a pronoun in subject role in the preceding clause (PS) and d) co-reference with Ø in subject role in the preceding clause (ØS). The coding schemes are illustrated in examples (2a)–(2d).

(2a) [Een jongetje met een kikker en een hondje zitten vóór een bed]. En het jongetje (NI) gaat slapen.
A boy, a frog and a dog sit in front of a bed. And the boy goes to sleep.

[Aru tokoro ni shonen ga imashita]. Shonen (NI) wa petto ni inu o katterundesu
certain place DAT boy NOM exist:PAST boy TOP pet as dog ACC keep-ASP:NONPAST
There is a boy somewhere. The boy keeps a dog as a pet

(2b) [Soshitara nanka itsu-no-manika inu ga dete kitete], inu (NS) mo isshoni otten no then well unnoticed dog NOM exit:TE-come:TE dog also together fall-ASP:NONPAST SE
Then the dog comes back unnoticed and, the dog has also fallen (into the river).

(2c) [Eh en in het bos gaat hij op zoek naar de kikker]. Nou in eerste instantie zit het
jongetje (PS) op de grond te kijken naar zo een molshoop
Eh and he goes into the forest to look for the frog. Then at first, the boy sits on
the ground to look into a molehill

(2d) [kodomo o ippiki moratte], sono otoko no ko (ØS) wa uchi e kaetta
that child ACC one-CL receive:TE, that male GEN child TOP home to return:PAST
(Ø) received one child (frog), and that boy went home

The bracketed clause represents the preceding clause, and the maintained referent is marked in bold type. The coding scheme is indicated in parentheses. For instance, in (2a), the maintained referent, het jongetje (‘the boy’), is co-referential with the newly introduced referent in the previous clause, een jongetje (‘a boy’). Thus, the referent is coded as ‘NI’. In (2b), the maintained referent, inu (‘dog’), is co-referential with the subject of the preceding clause. However, inu (‘dog’) was not newly introduced. Thus, the maintained referent (i.e. dog in bold type) is coded as ‘NS’. In (2c), the maintained
referent, *het jongetje* (‘the boy’) is co-referential with the pronominal subject of the preceding clause. Thus, it is coded as ‘PS’. Finally, in (2d), the maintained referent, *sono otoko no ko* (‘that boy’), is co-referential with the zero-marked subject of the preceding clause. Thus, the maintained referent in bold type is coded as ‘ØS’.

Table 5.2 shows the distribution of the various maintained NPs in the Dutch and Japanese narratives. The two languages differ with respect to the contexts where maintained NPs occur. 47% of the maintained NPs in the Dutch narratives occur after the introduction of new referents, 9% after clauses with given referents in subject role denoted by NPs, and 41% after clauses with pronominal subjects. Only a single maintained referent occurs after a clause with Ø-marked subject. In contrast, 21% of the maintained NPs in Japanese narratives occur after the introduction of new referents, 27% after subject denoted by NPs, and 52% after clauses with Ø-marked subjects. In other words, roughly half of the maintained referents in L1 Dutch are second mentions of the newly introduced referents in the preceding clauses, and the other half are mostly co-referential with the pronominal subjects in the preceding clauses. In contrast, in L1 Japanese, roughly half of the maintained referents are co-referential with the zero-marked subjects in the preceding clauses.

<table>
<thead>
<tr>
<th></th>
<th>L1 Dutch</th>
<th>L1 Japanese</th>
</tr>
</thead>
<tbody>
<tr>
<td>NI</td>
<td>15</td>
<td>22</td>
</tr>
<tr>
<td>NS</td>
<td>3</td>
<td>28</td>
</tr>
<tr>
<td>PS</td>
<td>13</td>
<td>0</td>
</tr>
<tr>
<td>ØS</td>
<td>1</td>
<td>53</td>
</tr>
<tr>
<td>total</td>
<td>32</td>
<td>103</td>
</tr>
</tbody>
</table>

A qualitative analysis shows that the maintained NP following an introduced referent in L1 Dutch is usually marked by a definite article and the syntactic role changes from non-subject to subject as in (3).

(3)  *En het jongetje heeft een kikker in een glazen potje. Maar ‘s nachts onsnapt de kikker. And the boy has a frog in a glass jar. But the frog escapes during the night.*

In (3), the referent, *een kikker* (a frog), is introduced as an object of a verb and subsequently moves to subject role. In Japanese L1, the majority of the maintained referents in the NI condition are expressed by repeating a bare NP in subject role.

(4)  *aru tokoro ni kodomo shonen ga imashita. Sonen wa petto ni inu o*  
*a certain place DAT child boy NOM exist:PAST boy TOP pet for dog ACC*  
*katterundesukedo*  
keep-ASP:NONPASR-SE-but  
*At a certain place, there was a boy. The boy kept a dog as a pet, but*
In (4), the new referent, *shonen* (boy), is introduced in subject role and the syntactic role assigned to the same referent does not change in the following clause.

According to Table 5.2, about half of the *maintained* NPs in L1 Dutch and Japanese occur in either the combination of PS and ØS or only in ØS conditions. Since *maintained* referents are by definition associated with predictable information, the change of linguistic form from attenuated to NP for maintaining reference seems at odds with the principle of information flow. Thus, further analyses were performed. The results show that that the majority (70%) of the *maintained* NPs in the PS condition in L1 Dutch occur when the *maintained* referent denoted by a NP is only a part of the subject of the preceding clause as in example (5).

(5)  En dan gaan ze het bos in. En die hond die probeert dan eerst in een bijenkorf te zoeken

          And then they go into the forest. And the dog he first tries to search in a beehive

In (5), the subject of the preceding clause is expressed with a pronoun *ze* which refers to both the *boy* and the *dog*. In the following clause, only the *dog* is in subject role. Given the treatment of part vs. whole adopted for the coding of the data in the present work (see Chapter 3), the informational status of the *dog* is coded as *maintained*. However, the referents in subject role in the two clauses are not exactly the same. Thus, most of the *maintained* NPs in the PN condition in L1 Dutch may be produced to clarify the identity of the referent when only one of the two referents remains in subject role in two consecutive clauses.

In contrast, the majority (80%) of the *maintained* NPs in the ØN condition in L1 Japanese are exactly the same as the subject denoted by ø in the preceding clause. Qualitative analyses show that speakers in L1 Japanese switch from using ø to NP after a) a chain of zero-marking, b) an insertion of a statement that is not narrative proper and c) reintroduction of referents with ø. Example (6) is an excerpt from the data where a *maintained* NP occurs after a chain of zero-marking.

(6)  de, de, sono shika ni tsukamatta-mama tsuresararechattanda
          then then that deer to grab-ASP-as is take-away-PASS-ASP:PAST:SE

        de nanka henna kawa mitaina tokoro ni tsuretekarete
          then well strange river MOD place DAT take-away-PASS:TE

        gake kara tsukiotosare
          cliff from push-drop-PASS

        tsukiotosarete bochaan to
          push-drop-PASS:TE SSW QT

        de,de, sono kawa no tokoro de
          then then that river GEN place DAT
→ sono otoko no ko ga kaeru no  oto ni kizuki
  that male GEN child NOM frog GEN sound at notice:NONPAST

  then then holding onto the deer, (φ) ended up being taken away
  then well (φ) was taken to a strange river like place, and
  (φ) was pushed and dropped from the cliff
  (φ) was pushed and dropped like, ‘bochaan’
  then, then at the river, that boy noticed the sound of the frogs

In (6), the maintained NP, *sono okotono ko* (‘that boy’ shown by an arrow), explicitly identifies the referent after a chain of φ-marked subjects.

*Maintained NPs* are also observed when comments that are not narrative-proper are inserted as in (7).

(7) garasu no keesu no naka ni kaeru o katteta no
  glass GEN case GEN inside DAT frog ACC keep-ASP:PAST SE

  sonde netete
  then sleep-ASP:TE

  sore, youru datta no
  that, night COP:PAST SE

→ so, sorede sono shonen to inu ga nete
  th then that boy and dog NOM sleep:TE
  (φ) kept a frog in a glass case
  then (φ) were sleeping
  it was night
  th, then that boy and the dog went to sleep, and

In (7), the maintained NP (shown by an arrow) occurs after a statement, *sore youru data no* (‘it was night’), which is not narrative-proper. In the excerpt, the speaker first mentions that the referents (the boy and the dog) kept a frog and that they went to bed. Note that φ is used as the referential form. Immediately following the inserted comment, the information that the boy and the dog went to bed is repeated. However, this time, the identities of the referents are clearly provided with NPs.

In (8), the speaker first describes the frog’s disappearance. In the next clause, *the boy and the dog* are re-introduced into the narrative with φ (shown by an arrow). In the immediately following clause, the speaker uses the same structure and repeats the same information that the boy and the dog woke up. However, this time, the identities of the intended referents are supplied with NPs. When re-introduced with φ, the identities of the referents are not clearly supplied. Although it is possible for the listeners to guess the identities of the intended referents using contexts, the NPs may help clarify their identities.
5.1.3 Referential forms denoting re-introduced referents
We have tallied all the re-introduced referents in L1 Dutch and Japanese speech production. A total of 604 re-introduced referents were found in L1 narratives. Of 604 referents, 169 were in L1 Dutch and 435 were in L1 Japanese. Table 5.3 shows the distribution of linguistic forms used to refer to re-introduced referents in L1 Dutch and Japanese narratives. These include both NPs and attenuated forms (pronoun and φ). As was the case for maintained referents, in Dutch, NPs consist of nouns with definite articles or with demonstratives, proper names and left-dislocated nouns in combination with pronouns. In (9), left-dislocation occurs to denote the reintroduced referent.

(9) En het hondje gaat achter die twee aan natuurlijk. En die hert die gooit hem en het hondje gewoon het water ingekieperd.

And the dog naturally goes after the two. And the deer he throws him and the dog into the water.

In the first clause, the referent in subject role is het hondje (‘the dog’). In the immediately succeeding clause, the referent in subject role switches to the deer, denoted by the left dislocation die hert die (‘the deer he’), showing that the use of left dislocation does not seem to be associated with either maintained or re-introduced referents. Attenuated forms used in the Dutch narratives consist of pronouns and φ. In the Japanese narratives, φ is utilized as the attenuated form.
Figure 5.2. Frequencies of referential forms used for re-introduced referents

Figure 5.2 shows the distribution of referential forms denoting re-introduced referents (see appendix C for raw figures). 62% of the re-introduced referents in L1 Dutch narratives are denoted by NPs. The figure for the Japanese data is 55%. No statistical difference was found between the figures for the two language groups. On the other hand, 36% of the re-introduced referents are expressed with pronouns in L1 Dutch, and 45% of the re-introduced referents are denoted by φ in L1 Japanese.

An omnibus repeated measures analyses of variance with a language group as 3-level between-subjects factor and a reference form as a 2-level within-subjects factor show that there is a group effect for the use of NP (F(2, 39) = 30.56, p <.001) and for the use of φ (F(2, 39) = 94.36, p <.001). Post hoc analyses using Dunnett T3 post hoc criterion for significance indicate that the frequency of the use of NP does not show any difference between L1 Dutch and L1 Japanese (Table 5.3), but the use of φ is significantly lower in L1 Dutch than in L1 Japanese (Table 5.4).

| Table 5.3. Frequency of NPs used for re-introduced referents (Dunnett T3) |
|---|---|---|---|
|   | mean difference | std. error | sig. |
| L1 Dutch | L2 Japanese | -.279* | .049 | .001 |
| L1 Japanese | .062 | .049 | .628 (n.s.) |
| L2 Japanese | L1 Japanese | .342* | .046 | .001 |

| Table 5.4. Frequency of φ used for re-introduced referents (Dunnett T3) |
|---|---|---|---|
|   | mean difference | std. error | sig. |
| L1 Dutch | L2 Japanese | -.100* | .032 | .016 |
| L1 Japanese | -.435* | .025 | .000 |
| L2 Japanese | L1 Japanese | -.334* | .036 | .000 |

In comparison to previous findings, the use of attenuated forms to re-introduced referents is higher in the present data. For instance, Hickmann and Hendriks (1999) found that around 90% of the forms used for re-introduced referents were NPs in L1 German and French narratives. Clancy (1980) found that 28% of re-introduced referents in Japanese L1 data were denoted by φ. The higher frequencies of the attenuated forms in the present data may be due to the length of the stories used in the studies. Although the data used in Hickmann and Hendriks (1999) are also story-retellings of wordless cartoons, each of the stories consists of only five pictures, as
against the twenty-four in the present study. It is possible that with longer stories, the identities of the protagonists become more traceable with the help of context, which may in turn prompt speakers to use attenuated forms even for *re-introduced* referents. The reason for the discrepancy in the results between those by Clancy (1980) who used ‘Pair story’ video as stimuli and those by the present study is not clear.

5.1.4 Zero-marking (Ø) in reference tracking

Because the use of Ø in the re-introduction of referents is significantly different between L1 Dutch and Japanese, further analysis of this phenomenon was conducted. The zero-marking (Ø) used in tracking referents has been categorized into three types based on the conditions where it occurs: a) overtly coordinate; b) discoursally coordinate and c) situationally coordinate (cf. Williams 1988; Muñoz 1995). We will adopt these categories in illustrating the use of Ø in the current data. In the first condition, the identity of the Ø is recoverable from the syntactic antecedent. The succeeding utterances are connected with the previous utterance by conjunctions. Examples (10) and (11) are taken from the present data.

(10) en de kikker die sprong uit z’n pot en verdween.
   *and the frog, he jumped out of his pot and (Ø) disappeared*

(11) hachi ga detekite inu o okkakemawashite
    bees NOM exit-come:TE dog ACC chase-around:TE
    *The bees came out and (Ø) chased the dog around, and*

In (10), the identity of the Ø-marked subject is the same as the subject of the preceding clause, *de kikker* (‘the frog’). The two clauses are connected by a conjunction *en* (‘and’). In the Japanese example (11), the TE medial form is used to chain the clauses. In both Dutch and Japanese examples, the identity of the zero-marked subject is syntactically bound to the subject of the preceding clause.

In the ‘discoursally coordinate’ condition, there is a discourse antecedent. Unlike the previous condition, the clauses are not connected by a conjunction. However, the identity of the zero-marked subject is the same as the subject of the preceding utterance. For instance, the identities of the Ø-marked subject in (12) and (13) are the *boy* and the combination of the *boy* and the *dog*, respectively. The referents are not syntactically bound. However, the identities of the intended referents are clear from the flow of the discourse.

(12) en het jongetje vond het kikkertje wel aardig
dus met het kikkertje in z’n hand weer terug naar huis.
   *and the boy thought that the frog was very nice.*
   *So, with the frog on his hand, (Ø) back home again.*

(13) futari wa nechatta no
two-CLS TOP sleep-completely:PAST SE
sorede asa okitara
then morning wake up:COND

konna bin no naka ni kaeru wa inai no
like this jar GEN inside DAT frog TOP exist-NEG:NONPAST SE

The two went to bed. Then when (φ) woke up in the morning,
the frog is not inside the jar like this

In the ‘situationally coordinate’ condition, the referent may be separated by more
than one clause from the previous mention. In addition, there may be a switch of
referents in subject role since the previous mention of the referent. In (14) and (15),
the arrows show where the referents are re-introduced into the narrative with φ. In (14),
the referent, *het jochie* (‘the boy’), is re-introduced into the narrative after the
introduction of the *owl*. However, the re-introduction is denoted by φ. Similarly, in
(15), a chain of referent re-introduction is all performed with φ. In both examples, the
identities of the referents are recoverable not by syntactic rules but from the context.

(14) Nou het jochie zoekt verder en ziet een gat in een boom,
kiem in dat gat
Komt er een uil uit
→ Schrikt weer
*Then the boy searches further and sees a hole in a tree*
*(φ) looks in that hole*
*An owl comes out*
*(φ) is startled again*

(15) sagashita wake ne, inu to ningen wa ne
search:PAST SE PP dog and human TOP PP

→ kekyoku inakatta no
after all exist:NEG:PAST SE

→ de soto ni sagashiniitta no ne
then outside to search-go:PAST SE PP

→ inakatta kara
exist:NGT:PAST because

*(φ) searched for (φ), you see, the dog and the human, you see
After all (φ) wasn’t around
Then (φ) went outside to search for (φ), you see
because (φ) wasn’t around*

Table 5.5 shows the distribution of different types of zero-marking (φ) utilized in tracking
referents (both maintained and re-introduced) in L1 Dutch and Japanese.
### Table 5.5. Distribution of zero-marking (φ) in tracking referents

<table>
<thead>
<tr>
<th>Coordinate Type</th>
<th>L1 Dutch</th>
<th>L1 Japanese</th>
</tr>
</thead>
<tbody>
<tr>
<td>overtly coordinate</td>
<td>31</td>
<td>253</td>
</tr>
<tr>
<td>77.5%</td>
<td>51%</td>
<td></td>
</tr>
<tr>
<td>discoursally coordinate</td>
<td>5</td>
<td>50</td>
</tr>
<tr>
<td>12.5%</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>situationally coordinate</td>
<td>4</td>
<td>195</td>
</tr>
<tr>
<td>10%</td>
<td>39%</td>
<td></td>
</tr>
<tr>
<td>total</td>
<td>40</td>
<td>498</td>
</tr>
<tr>
<td>100%</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Most of zero-marking in L1 Dutch occur within the syntactic constraints. On the other hand, about half of φ in L1 Japanese occur in conditions that are not constrained by any syntactic rules.

As we have stated, the identities of the referents denoted by φ in ‘situationally coordinate’ condition are mostly recoverable from the context. However, in some cases, ambiguity may occur. Observe example (16).

(16) de sonomama sono futari wa nerudakedo
    and as is that two-CLS TOP sleep:NONPAST-SE-but
    neteru saichuu ni
    sleep-ASP:NONPAST during
    kaeru ga bin kara koo detekuru wake
    frog NOM jar from in this way exit-come:NONPAST

→ suto tsugi no hi okiru to
    then next GEN day wake up:COND
    and the two leave (things) as is
    and go to bed, but
    while (φ) are asleep
    the frog leaves his jar in this way
    then when (φ) wake up the next day

In (16), the arrow indicates the case where the identity of the zero-marked subject may be ambiguous. Syntactically, the closest NP to the φ is the frog which is the preceding subject. However, from the context, the act of sleeping is associated with the two referents, the boy and the dog. Since Japanese verbs do not mark number, the identities of the zero-marked subject can be either the boy, the dog or both. Given the various possible choices, the intended referent is not clear. The re-introduction of referents with φ as in (16) has been variously termed *elliptical switch* (Clancy 1980), *zero topic change* (Furuyama 2001), *return pop* (Huang 2000a) or *global coherence* (Zhou 1995). The phenomenon has been noted in the discourse production of speakers of Chinese (Hickman & Hendriks 1999; Huang 2000a, 2000b; Zhou 1995) and Japanese (Clancy 1980; Furuyama 2001).

Occasionally, speakers may reveal the identity of the zero-marked subject by placing the referent immediately afterwards using right-dislocated NPs.
In (17), the speaker first re-introduces the referents with ø. However, immediately afterwards, the identities of the zero-marked subject are supplied as *hitori to ippiki* (‘one person and one animal’). However, these rather ambiguous expressions are then followed by more explicit proper names assigned to the *boy* and the *dog*. Although not common, a similar structure is observed in the Dutch narratives.

(18) En het jongetje ziet dan in een holletje in de grond
    Maar daar komt dan een andere beestje uit, waarschijnlijk een mol of zo,
    en die bijt dan z’n neus,
→ en eh daarna gaat-ie in een holletje in de boom kijken, dat jongetje
    *And the boy then looks in a hole on the ground*
    *but, from there, another animal comes out, something like a mole*
    *and he bites his nose,*
    *and then afterwards, he goes to check in a hole in a tree, that boy*

In (18), the speaker first refers to the *boy* with a pronoun *ie* ‘he’ (shown by an arrow). However, at the end of the utterance, the identity of the referent is supplied by a dislocated NP as *dat jongetje* (‘that boy’). The reason for the explicit mention of the referent at the end may be because the pronoun *ie* (‘he’) is used to re-introduce the referent. Note that in the preceding clause, *die* (‘he’) refers to the *mole* not the *boy*. The seemingly unnecessary NP may have been added to avoid the possible ambiguity caused by the use of an attenuated referring form *die* (‘he’) for a re-introduced referent.

5.1.5 Referential importance and the use of attenuated forms
As it has been noted in the literature that the use of referential forms are not only related to the linear flow of clauses but also to the global perspective of the story such as the plot centrality of characters, we analyzed the association between the use of attenuated forms and referential importance. Figures 5.3a and 5.3b show the results.
According to these figures, attenuated forms are more likely to be associated with the primary character, the \textit{boy}, in both Dutch and Japanese narratives. With respect to \textit{maintained} referents, 59\% and 52\% of the attenuated forms are associated with the \textit{boy} in L1 Dutch and L1 Japanese narratives, respectively. The association between attenuated forms and other referents is comparatively weak in both L1 narratives. A slight difference is observed with the \textit{dog}. With respect to \textit{re-introduced} referents, 67\% and 60\% of the attenuated forms are used to denote the \textit{boy} in Dutch and Japanese narratives, respectively. The association between attenuated forms and other referents is relatively weak in both narratives.

5.2 Gestural tracking of animate referents in L1 Dutch and Japanese

There are a total of 104 gestures that accompanied the \textit{maintained} and the \textit{re-introduced} animate referents in the L1 narratives: 20 in L1 Dutch (four for the \textit{maintained} and 16 for the \textit{re-introduced} referents), and 84 in L1 Japanese (26 for the \textit{maintained} and 58 for the \textit{re-introduced} referents). All of the gestures that accompany the \textit{maintained} and \textit{re-introduced} referents occur on NPs. We will first analyse gestures accompanying the \textit{maintained} referents.

5.2.1 Quantitative analysis of gesture accompanying maintained referents

There were a total of four gestures that marked \textit{maintained} referents in L1 Dutch, while the number was 26 for L1 Japanese. Figure 5.4 shows the frequency (in percentage) of gesture accompanying the \textit{maintained} referents in L1 Dutch and Japanese. 2\% of the \textit{maintained} referents in L1 Dutch are gesturally marked. The extremely low frequency of gestures accompanying \textit{maintained} referents in L1 Dutch replicates previous findings about L1 speakers of English (Levy and McNeill 1992) and Swedish and French (Gullberg 1998, 2003). On the other hand, the figure for the Japanese narratives is 7\%. 

**Figure 5.3a.** The use of attenuated forms and referential importance for \textit{maintained} referents L1 Dutch and Japanese

**Figure 5.3b.** The use of attenuated forms and referential importance for \textit{re-introduced} referents in L1 Dutch and Japanese
Figure 5.4. Frequency of gesture accompanying the *maintained* referents in L1

An omnibus repeated measures analyses of variance with language group as a 3-level between-subjects factor and gestural accompaniment as one 2-level within-subjects factor revealed a significant group effect for the frequency of gestural accompaniment ($F(2, 39) = 5.88$, $p < .01$). Post hoc analyses using Dunnett T3 indicate that maintained-referents are more frequently marked by gesture in L1 Japanese than in L1 Dutch (Table 5.6).

Table 5.6. Frequency of gestural making of *maintained* referents in L1 and L2 (Dunnett T3)

<table>
<thead>
<tr>
<th></th>
<th>mean difference</th>
<th>std. error</th>
<th>sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1 Dutch</td>
<td>L2 Japanese</td>
<td>-.120*</td>
<td>.035</td>
</tr>
<tr>
<td></td>
<td>L1 Japanese</td>
<td>-.051*</td>
<td>.018</td>
</tr>
<tr>
<td>L2 Japanese</td>
<td>L1 Japanese</td>
<td>.069</td>
<td>.039</td>
</tr>
</tbody>
</table>

Given the low frequency of gestures in L1 Dutch, the following analysis will focus only on the gestures accompanying the *maintained* referents in L1.

5.2.2 Gestural reference maintenance in L1 Japanese

The analysis of the gestures on *maintained* referents focuses on the following three aspects of gesture: 1) contexts where gestures on the *maintained* referents occur, 2) the relationship between gesture and referential importance of characters in subject role 3) qualitative aspects of gestures marking *maintained* referents.

5.2.2.1 Contexts where gestures occur

For the analysis, gesturally marked *maintained* referents are coded according to the form of the co-referent in the preceding clause, in the same manner as in the analysis of the *maintained* NPs in speech. Three basic contexts are identified: a) newly introduced NP (NI), b) NP (NS) and c) zero anaphora (ØS). The last context is further divided into two subcategories as c-1) zero-marked *maintained* referent (ØSM) and c-2) zero-marked *re-introduced* referent (ØSR). Table 5.7 shows the results of the distribution of the 26 gestures that accompanied the *maintained* referents in L1 Japanese according to the four contexts:
Table 5.7. Distribution of contexts where gestures accompanying maintained referents occur

<table>
<thead>
<tr>
<th>contexts</th>
<th>maintained referents accompanied by gesture</th>
</tr>
</thead>
<tbody>
<tr>
<td>NI</td>
<td>8/26 31%</td>
</tr>
<tr>
<td>NS</td>
<td>4/26 16%</td>
</tr>
<tr>
<td>ØSM</td>
<td>6/26 23%</td>
</tr>
<tr>
<td>ØSR</td>
<td>8/26 30%</td>
</tr>
<tr>
<td>Total</td>
<td>26 100%</td>
</tr>
</tbody>
</table>

Table 5.7 shows that 47% of gestures accompanying the maintained referents occurs after clauses where co-referential referents are explicitly identified with NPs. 53% occur after clauses with zero-marked subjects. Given the small number of gestures in each cell, statistical analysis was not performed.

5.2.2.2 Referential importance and gesture

Figure 5.5 shows the association between gestures and referential importance.

![Figure 5.5](image)

**Figure 5.5.** The distribution of gestures accompanying the various maintained referents

71% of the gestures accompanying the maintained referents occur with the boy and the dog. 21% occur with the frog. The figure for the peripheral referents is 8%. In other words, the majority of the maintained gestures in L1 Japanese accompany the referents with primary or secondary importance.

5.2.2.3 Qualitative analysis of gesture accompanying maintained referents

In the following section, gestures accompanying maintained NPs are examined with respect to the physical aspects of gesture as well as their relationship to accompanying speech. Table 5.5 shows that 31% of the referential gestures on maintained referents occur on the second mention of the referent immediately after its introduction (NI condition) as in Figure 5.6.
there is a boy, a dog that the boy keeps, and Mr. Frog

and Mr. Frog, you see, is in a jar.

In Figure 5.6, the speaker introduces the three main characters in succession in speech. Each introduction is accompanied by a counting gesture. The introduction of the boy is accompanied by a counting gesture made with an index finger (Figure 5.6:1). The introduction of the dog is accompanied by a counting gesture made with the middle finger (Figure 5.6:2). When the frog in mentioned, the referent is accompanied by a counting movement with the ring finger (Figure 5.6:3). This is followed by the left hand pressing the right ring finger. In the immediately succeeding clause, the frog assumes subject role in speech. While referring to the frog, the speaker looks at her fingers and holds the right ring finger, which represented the frog in the preceding gesture (Figure 5.6:4).

16% of the maintained referential gestures (i.e. gestures synchronizing with the mention of maintained referents in speech) occur in the NS condition. In Figure 5.7, the speaker re-introduces the frog into the narrative more than twenty-five clauses after its last mention. The re-introduction of the referent is not accompanied by a gesture. Instead, a gesture accompanies the verb iru (‘exist’). The speaker moves her hand to the lower right periphery (Figure 5.7:1). In the immediately succeeding clause, the same referent is assigned subject role. This maintained referent is accompanied by a gesture (Figure 5.7:2).
Figure 5.7. Gestures accompanying the predicate of re-introduced referent and a **maintained** referent

The second gesture locates the referent in a position almost identical to the previous gesture. The hand movement, handedness and the hand orientation of the two gestures share similarities. In Figures 5.6 and 5.7, the anaphoric reference to the preceding referent is demonstrated not only in speech but also in gesture.

In contrast, some gestures occurring in the NI condition do not locate the referents in the same positions in the gesture space as the gestures in the preceding clauses. In the series of utterances in Figure 5.8, the speaker repeats his reference to the boy and the dog with NPs after their first introductions. Each mention of the referents is accompanied by a gesture. First, the boy and the dog are indicated by a counting gesture. The introduction of the boy is accompanied by a counting gesture with the thumb (Figure 5.8:1), and the dog with the forefinger (Figure 5.8:2). In the immediately succeeding clause, the boy and the dog are in subject role, thus establishing their informational status as **maintained**. However, the accompanying gestures locate the boy and the dog in the central gesture space. The boy is associated with the left hand, and the dog with the right hand (Figure 5.8:3 and 5.8:4).
Two clauses later, the *boy* and the *dog* are mentioned again. According to our working definition, since the preceding clause has only the *boy* in subject position, the informational status of the *boy* and the *dog* is re-introduced. Nevertheless, the hands associated with the *boy* and the *dog* are the opposite of the previous gesture. This time, the *boy* is associated with the right hand, and the *dog* with the left (Figure 5.8:5 and 5.8:6). This example points to the arbitrary assignment of the gestural loci to the *boy* and the *dog* at the very beginning of the narrative. The gestures on the maintained *boy* and *dog* in Figure 5.8 seems to support the view that the gestures which accompany the introduction of the *boy* and the *dog* in the L1 Japanese narratives may not be performed for anaphoric purposes. There may be two types of gestures that accompany the introduction of the referents in L1 Japanese: gestures to locate the referents and gestures to highlight the referents (see Chapter 4).

Table 5.5 shows that more than half of the gestural markings of maintained NPs succeed a clause with a zero-marked subject. The following is an example: The speaker in Figure 5.9 re-introduces the *boy* with Ø, which occurs four clauses after the last mention of the referent. When the speaker re-introduces the referent, the *boy*, with Ø (shown by an arrow), a gesture accompanies the verb *moratte* (‘receives’). As the verb is uttered, the hand moves from the right periphery to the central gesture space (Figure 5.9:1). In the immediately succeeding clause, reference to the *boy* is made with a NP which is accompanied by gesture. The right hand moves up and down at the position where the previous gesture ended (Figure 5.9:2). In short, the use of a NP disambiguates the identity of the re-introduced zero-marked subject of the previous clause. At the same time, the gesture accompanying the maintained referent also seems to indicate the anaphoric relationship between the NP and a zero-marked subject of the previous clause by occurring at the same place as the last gesture.

Figure 5.8. Gestures accompanying the introduction of referents and repeated mention of referent after their introduction
1 de kaeri ni sono jibun no then on the way back that self GEN
katteta kaeru no keep-ASP:PAST frog GEN
kekkon-shite kodomo unda-tte itta jan marry-ASP:TE child deliver QT say:PAST SE
→ 1 sono kodomo o ippiki [moratte] 1 that child ACC one-counter [receive:TE] And, on the way back, his frog’s
(ø) told you that (ø) was married and had children
(ø) received one of the frog’s children and

2 [sono otoko no ko wa] mata uchi e kaetta
2 [that male GEN child TOP] again home to return:PAST that boy went back home again

**Figure 5.9.** Gestures accompanying the maintained NP after elliptical re-introduction of referent

Following is another example. In Figure 5.10, the speaker performs a gesture on the verb as he utters the Japanese equivalent of ‘the two of them go to bed’. The gesture locates the referents in the right peripheral gesture space (Figure 5.10:1). Two clauses later, the *frog* is re-introduced into the narrative and his escape from the *jar* is mentioned (Figure 5.10:2 and 5.10:3). The *boy* and the *dog* are then re-introduced in the next clause. However, the subject is marked by ø. When the speaker mentions, ‘next day, ø wake up’, he points to the right periphery, as if to indicate the gestural locus associated with the zero-marked subject (Figure 5.10:4). In the immediately succeeding clause, the speaker repeats the same information with the *boy* and the *dog* linguistically supplied as subjects, thus distinguishing the identities of the zero-marked subjects in the preceding clause. The mention of the referents is accompanied by a
gesture which locates the boy and the dog in the positions that were assigned to the same referents three clauses before (Figure 5.10:5).

1 de sonomama sono futari wa
and as is that two TOP

1 [neru n dakedo neteru saichuu ni]
1 [sleep N but sleep-PRG while DAT]
and the two leave (things) as is
and go to bed but while (φ are) asleep

2 [kaeru ga bin kara koo]
2 [frog NOM jar from in this way]
the frog leaves his jar like this

3 [detekuru wake]
3 [exit-come:NONPAST]

4 suto de [tsugi no hi asa okiru to]
4 then then [next GEN day morning wake up COND]
then then the next day when (φ) get up in the morning

5 sono [otoko no ko to /otoko no o ko to inu ga]
5 that [male GEN child and /male GEN child and dog NOM]
koo yatte meosamashita tokini]
in this way do:TE wake up:PAST when ]
when the boy and /the boy and the dog wake up like this

Figure 5.10. Gestures accompanying referents

The function of the gesture in Figure 5.10: 5 seems to mirror the function of the maintained NP in speech. Just as the NP helps clarify the possible ambiguity of the identities of a preceding zero-marked subject, the gesture also visually helps clarify the ambiguity of the indexing gesture in the preceding clause by using recursive features such as hand-shape and the gestural locus associated with the boy and the dog three clauses earlier.

When the zero-marked subject is supplied immediately after the verb in right-dislocated NPs, the explicit mention of the subject may be accompanied by a gesture.
In Figure 5.11, the speaker first provides a clause with a zero-marked subject. When the speaker mentions *iwa ni* (‘a rock’), her left hand is placed in the centre gesture space with the palm facing downwards (Figure 5.11:1). The gesture is held in the same position while the verb *nobotta* (‘climbed up’) is uttered. Immediately afterwards, the speaker supplies the identity of φ with a NP. As soon as *shonen* (‘boy’) is mentioned, the speaker’s index finger traces the outline of the preceding gesture (Figure 5.11:2). The hand shape and the movement suggest that the gesture depicts the boy’s climbing the rock. However, the gesture synchronizes with the word *shonen ga* (‘the boy + nominal marker’). The gesture thus does not semantically synchronize with the content of speech. Instead, the similarities of the gestural locations and hand shape between the two gestures may help indicate the referent, *shonen* (‘boy’), as the identity of the zero-marked subject of the verb, *nobotta* (‘climbed up’).

### 5.2.3 Gestural reference re-introduction in L1 Dutch and Japanese

#### 5.2.3.1 Quantitative analysis of gesture accompanying maintained referents

In L1 Dutch, 16 re-introduced referents are accompanied by gesture. The figure for L1 Japanese was 42. Figure 5.12 shows the frequency of gesture accompanying re-introduced referents. The results of the frequency of gesture accompanying maintained referents are also added for the purpose of comparison. In the Dutch narratives, 9% of the re-introduced referents are accompanied by gesture. The corresponding figure for Japanese is 13%. An omnibus repeated measures analyses of variance with language group as a 3-level between-subjects factor and gestural accompaniment as a 2-level within-subjects factor shows that there is a group effect for the frequency of gestures accompanying the re-introduced referents (\(F(2, 39) = 7.49, p < .002\)). Post hoc analyses using Dunnnett T3 post hoc criterion for significance indicate that the average frequency of gestural marking between L1 Dutch and L1 Japanese is not significantly different (Table 5.8). The figure for the Dutch narratives in the present work is slightly lower than in previous findings. Gullberg (2003) found that 14% of re-introduced
referents were accompanied by gesture in L1 French and Swedish narratives. The reasons for the discrepancy between her findings and the current results for the L1 Dutch data are not clear.

![Graph showing frequency of gesture accompanying maintained and re-introduced referents](image)

**Figure 5.12.** Frequency of gesture accompanying *maintained* and *re-introduced* referents

<table>
<thead>
<tr>
<th></th>
<th>mean difference</th>
<th>std. error</th>
<th>sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1 Dutch</td>
<td>L2 Japanese</td>
<td>-.221*</td>
<td>.063</td>
</tr>
<tr>
<td>L1 Japanese</td>
<td>L1 Japanese</td>
<td>-.062</td>
<td>.034</td>
</tr>
<tr>
<td>L2 Japanese</td>
<td>L1 Japanese</td>
<td>.158</td>
<td>.064</td>
</tr>
</tbody>
</table>

**Table 5.8.** Frequency of gestures accompanying *re-introduced* referents (Dunnett T3)

### 5.2.3.2 Referential importance and gesture

Figure 5.13 shows the frequency of gestural marking of *re-introduced* referents in relation to the referential importance of the referents. 69% of the gestural markings of *re-introduced* referents in the Dutch narratives occur on the *boy*, the *dog* or both. The figure for the Japanese narratives is 66%. 31% and 22% of the gestures on *re-introduced* referents occur on mention of the *frog* in the Dutch and the Japanese narratives, respectively. No gestures accompany the re-introduction of peripheral characters in L1 Dutch. In L1 Japanese, 12% of the gestures accompanying the re-introduction of referents are associated with peripheral characters.

![Graph showing distribution of gestures accompanying re-introduced referents](image)

**Figure 5.13.** Distribution of gestures accompanying *re-introduced* referents in L1 Dutch, L1 Japanese and L2 Japanese narratives

Figure 5.13 shows that in both languages the majority of the gestures accompanying *re-introduced* referents are associated with the two main characters.
5.2.3.3 Qualitative analysis of gesture accompanying re-introduced referents
Unlike gestures that mark maintained reference, gestures that accompany re-introduced referents occur with some clauses in between their appearances. Consequently, qualitative analysis of gestures show that there are usually no recursive physical features observable between gestures accompanying the re-introduced referent and a gesture that accompanied the previous mention of the same referent. However, when multiple referents are involved in the scene description, recursive features are observed in gestures accompanying re-introduced referents.

![Image 1](image1.png)
![Image 2](image2.png)

1 [en steunt dus en een tak lijkt het om nog eens te kijken]
   And (s) grabs a branch-like thing to look around

Dat is een rendier]
That is a reindeer

Het rendier neemt het jochie mee
The reindeer take the boy with him

![Image 3](image3.png)

2 Nou die [hond loopt] [look mee], blaf blaf
   2 Well, the dog walks along too, woof woof

3 En [het ren eh het rendier smijt het jochie in het water]
   3 And the rein eh, the reindeer throws the boy into the water

**Figure 5.14.** Gestures accompanying the re-introduced referents

In Figure 5.14, the Dutch speaker clenches his fists when he refers to the boy grabbing a branch. When the reindeer is mentioned for the first time in the succeeding clause, a beat is superimposed on the hands, which have been held in the same position (Figure 5.14:1). In the following clause, the dog is re-introduced into the narrative. The accompanying wiggling movement by the left hand depicts the dog’s walk. As the left arm moves forward, the right hand continues the wiggling movements. As soon as the right fingers begin to wiggle, the left arm and fingers stop moving, as if the gestures describe the dog’s running on the left and then the right side of the speaker (Figure 5.14:2). When he makes barking noises, the speaker looks up, as if the dog is barking.
at the deer. In the succeeding clause, the deer is re-introduced in speech and accompanied by a gesture which mirrors the gesture that accompanied the same referent when it was last mentioned (Figure 5.14:3). Thus, the referent is not only referred to anaphorically in speech but also in the manual mode.

Similarly, in L1 Japanese, the re-introduced referents may be accompanied by a gesture that anaphorically refers to the previous gesture. In Figure 5.15, when the Japanese speaker mentions that the boy and the deer are going to the cliff, the verb is accompanied by a gesture where two hands are placed in parallel in the central gesture space (Figure 5.15:1). Then the speaker describes the deer’s sudden halt. When the boy is re-introduced into the narrative in the following clause, the re-introduced referent is accompanied by the right index finger pointing at the left hand/arm (Figure 5.15:2). This deictic gesture physically indicates that the boy is represented by her left hand. The speaker then describes the scene with the left hand sustained in mid air (Figure 5.15:3).

**Figure 5.15. Referential gestures accompanying re-introduced referents**

Two clauses later, the boy is re-introduced into the narrative. The mention of the boy is accompanied by a beat superimposed on the left hand, which has been associated with the referent previously (Figure 5.15:4). The left arm is held in the same position while the dog is re-introduced into the narrative (Figure 5.15:5). Throughout the series of utterances describing the scene involving multiple characters, the re-introduction of the boy is constantly associated with the same hand, which is maintained in the same position.
5.3 Summary and discussion of bi-modal animate reference tracking in L1

This section reported the results of the cross-linguistic examination of animate reference tracking in L1 Dutch and L1 Japanese speech and gesture production. The analyses show that certain factors influence the choices of referential form in tracking referents regardless of the language spoken. At the same time, cross-linguistic variations are observed due to language-specific factors. The analyses of speech show that the informational status (i.e. maintained vs. re-introduced) of the referent largely influences the choice of referential form in both language groups. Maintained referents are mostly identified by attenuated forms (pronominals and ə), while re-introduced referents tend to be associated more with NPs.

As expected from the literature, the Japanese speakers rarely used pronouns as attenuated forms in their narratives. The analyses show that the distribution of pronouns in the Dutch narratives resembles the distribution of ə in the Japanese narratives. The high reliance on ə for maintaining and re-introducing referents in Japanese indicates that greater tolerance of ambiguity may be expected of Japanese listeners than their Dutch counterparts. Nevertheless, the frequent use of ə may lead to ambiguity with respect to the identities of the intended referents. Subsequently, Japanese speakers tend to use NPs for maintained referents more frequently than their Dutch counterparts, seemingly in order to clarify the ambiguity of identities of the intended referents possibly caused by extensive use of zero-reference. We have presented three contexts where the identities of the intended referents can be ambiguous. One is a chain of ə where clauses with zero-marked subjects are connected without an explicit indication of the identity of the referent. The second is the insertion of non-narrative proper statements. The third is the re-introduction of referents with ə. Although Dutch speakers may use pronouns to re-introduce referents, because pronouns encode the number and gender of the subject, the identities of intended referents may be recoverable with less difficulty. The analyses thus suggest that the use of NPs for the maintained referents in Japanese narratives may be inter-related with the use of ə for tracking referents. The frequent use of ə in Japanese occurs because of the relatively relaxed constraints on its use in comparison to most European languages. Thus, the quantitative differences in the frequency of maintained NPs between the Dutch and Japanese narratives may occur as a result of qualitative differences in the constraints assigned to zero-marking by each language.

Furthermore, differences in the frequency of maintained NPs in Dutch and Japanese narratives seem to suggest cross-linguistic variation in the relationship between the information flow of discourse and the choice of referential forms. Unlike Givón’s (1985) quantitative universals, which predicts that the less predictable topic is more likely to be represented with more linguistic material, we have found cases where NPs are used for continuous topics (i.e. maintained NPs). Alternatively, we have also found cases where the most attenuated form of zero-marking (ə) is used to reintroduce referents. In short, although the focus is limited to referents in subject role, the present data indicate the possibility that mapping of the organization of information in discourse onto referential forms may in some contexts show cross-
linguistic variation. In fact, our findings about Japanese narrative are in agreement with Huang (2000) who explains the use of NPs for reference maintenance and zero-marking for reference re-introduction in speech as pragmatically motivated choices. Using Levinson’s (1991, 1995) pragmatically oriented Q-, I-, and M-principles, Huang (2000) explains that the repetition of NPs at the introduction is a manifestation of the fact that ‘I-implicated minimisation [is] being overridden by the M-implicated message of the establishment of a common topic’ (p.173). Similarly, Huang states that the zero-marked re-introduction can be explained as the manifestation of the I-principle (i.e. ‘Do not say more than is required’). He points to two techniques speakers may use to help indicate the intended referents. One is repetition of the key lexical items used in the previous utterance, and the other is the use of parallel syntactic constructions between the two utterances (p.172). In our data, Japanese speakers indeed use such linguistic devices. However, there seems to be another device seemingly used to help clarify the identity of intended referents, i.e. gesture.

The cross-linguistic analyses of the gestural tracking of animate referents show that certain factors such as the active use of pronominal forms and zero-marking affect gesture production in both languages. At the same time, some variations are observed between the two language groups due to language-specific factors. In the Dutch and Japanese narratives, the frequency of gestural marking of referents is generally associated with the their informational status. For instance, the re-introduction of referents is more marked by gesture than is maintenance in both languages. The analyses also show that gestural tracking of referents is related to the degree of referential importance in both L1 groups. Referents with high importance are more likely to be marked by gesture when tracked.

Some cross-linguistic variation is observed in the gestural tracking of referents. The extremely low frequency of gestures on the maintained referents in L1 Dutch confirms findings in the literature (Gullberg 1998, 2003; Levy & McNeill 1992; Marslen-Wilson et al. 1982; McNeill & Levy 1993). On the other hand, although the number of occurrences is relatively small, the Japanese speakers mark the maintained referents significantly more frequently than their Dutch counterparts. Further analyses of gesture indicate a possible association between context and the occurrence of gestural marking of the maintained referents in L1 Japanese, which is concentrated in contexts immediately succeeding the introduction of new referents and after a clause containing a zero-marked subject.

The contexts involved in the occurrence of gesture suggest some possible functions of gestures accompanying maintained referents in the Japanese native narratives. With respect to the clause immediately succeeding the introduction of new referents, gesturing may help establish the identities of such referents in the mind of the listener. The analyses of speech production in Chapter 4 show that Japanese speakers are more likely to attend to the establishment of referents using pragmatic means than their Dutch counterparts, most probably due to the absence of features such as an article systems or the active use of pronouns to note subtle changes in the informational status of referents. Accordingly, even on the second mention of a newly introduced referent, some Japanese speakers may feel to further establish the identity
of the referent. Gesture may function as a tool for such speakers to visually highlight the referent, either by repeating the gesture associated with the new referent or by simply accompanying the second mention of the referent with hand movements.

With respect to the gestural marking of referents succeeding zero-marked subjects, the recursive features of gesture (cf. the notion of ‘catchments’, McNeill 2000a) may help clarify the identities of referents in addition to the explicit provision of identity by NPs in speech. Thus, the data indicate that referential gestures may be motivated by the need to facilitate the effective delivery of discourse through the establishment and disambiguation of referent identity. In other words, the use of gesture may be highly pragmatically driven.

The literature has previously suggested that referential gestures in discourse made by native speakers are not associated with referents with predictable information (Gullberg 1998, 2003; Levy & McNeill 1992; Marslen-Wilson et al. 1982; McNeill & Levy 1993). The discrepancy between the previous findings in the literature and the results of the present analyses may be due to the characteristics of the languages concerned. The majority of the previous research has focused on gestures by native speakers of languages with actively used third-person pronouns and strict constraints on the use of 0. Thus, the quantitative differences in the frequency of gestural marking of the maintained referents between the Dutch and the Japanese narratives may be related to differences in the characteristics of the two languages. It is worth noting here the findings reported by Duncan (1996) about the gesture performance of Chinese speakers. In her Chinese data, Duncan found that there were some cases where the gesture accompanying the COMMENT in the TOPIC-COMMENT clause was repeated in synchrony with this COMMENT as it became TOPIC in the immediately succeeding utterance (Duncan 1996: 183-4). The study did not particularly focus on referential gestures, yet, it is worth noting that TOPIC, which represents old information, is here gesturally marked in narratives by speakers of a language typologically similar to Japanese in this respect.

Gestures accompanying the re-introduction of referents in both Dutch and Japanese show that the gesture’s unambiguous nature is most frequently utilized when the description of the scene involves competing characters.

Lastly, the analyses of linguistic and gestural tracking of referents in the Dutch and the Japanese narratives indicate a parallel between speech and gesture production. Note that where the Dutch and Japanese differ in the frequency of the use of NPs in speech is exactly where the two languages differ in the frequency of gesture production in tracking referents. The results thus indicate the integrated nature of speech and gesture at the level of discourse. Consequently, as with referential tracking in speech production, it seems that Givón’s principle (1983) of ‘more quantity of expression’ -- less predictable topic is accompanied by more coding material -- may not be entirely applicable to L1 referential gestures.
5.4 Linguistic tracking of referents in L2 Japanese

The same coding scheme as in the analysis of L1 production was adopted for the analysis of referent tracking in L2. Thus, the referents are analysed as either maintained or re-introduced. There are a total of 330 tracked referents found in the L2 data: 171 are maintained referents and 159 are re-introduced referents. We will first analyse the maintained referents.

5.4.1 Referential forms denoting maintained referents

The referential forms used to track referents in the L2 Japanese narratives are largely divided into NPs and attenuated forms, in the same way as their L1 counterparts. NPs consist of either bare nouns or nouns with demonstratives (e.g. sono kaeru ‘that frog’). Occasionally, L2 speakers may use a combination of a noun and an adjective (e.g. ooki dobutsu ‘big animal’). Attenuated forms consist of pronouns (e.g. kare ‘he’) and ø. Table 5.11 illustrates the distribution of the forms used for the maintained referents in L2 Japanese in comparison to its L1 counterparts.

Figure 5.16 shows the figurative representations of the frequencies of referential forms used by the Dutch learners of Japanese in comparison to the results for the L1 Dutch and Japanese narratives. The figure shows that 33% of the maintained referents in the L2 narratives are denoted by NPs. The figures for L1 Dutch and Japanese are 13% and 25%, respectively. As for ø, 63% of the maintained referents are so denoted in L2 Japanese. The figures for L1 Dutch and Japanese are 15% and 75%, respectively.

![Figure 5.16](image-url)

**Figure 5.16.** The frequency of referential forms used for maintained referents

As reported in 5.1.1, the results of a repeated measures analyses of variance showed that there is a group effect for the frequency of the use of NPs ($F(2, 39) = 12.57, p < .001$) and for ø ($F(2, 39) = 67.159, p < .001$). Post hoc analyses using Dunnett T3 post hoc criterion for significance show that the average ratio of NPs to refer to the maintained referents is significantly higher in L2 than in L1 Dutch but not than in L1 Japanese (Table 5.9). In addition, although learners use more ø to refer to the maintained referents in their L2, the use of ø as a referential form is significantly lower than in L1 Japanese (Table 5.10).
Table 5.9. Frequency of NP denoting \textit{maintained} referents (Dunnett T3)

<table>
<thead>
<tr>
<th></th>
<th>mean difference</th>
<th>Std. Error</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>L2 Japanese</td>
<td>L1 Japanese</td>
<td>.125</td>
<td>.049</td>
</tr>
<tr>
<td>L1 Dutch</td>
<td></td>
<td>.258*</td>
<td>.056</td>
</tr>
</tbody>
</table>

Table 5.10. Frequency of \(\emptyset\) denoting \textit{maintained} referents (Dunnett T3)

<table>
<thead>
<tr>
<th></th>
<th>mean difference</th>
<th>std. error</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>L2 Japanese</td>
<td>L1 Japanese</td>
<td>-.147*</td>
<td>.048</td>
</tr>
<tr>
<td>L1 Dutch</td>
<td></td>
<td>.432*</td>
<td>.051</td>
</tr>
</tbody>
</table>

5.4.2 NPs denoting \textit{maintained} referents

The \textit{maintained} NPs in L2 Japanese narrative production are analysed with respect to the contexts in which they occur. The contexts are identified with respect to the forms of the co-referential referent \textit{in the previous clause}. Four contexts are distinguished, as in the analysis of L1 discourse: a) newly introduced NP (IN), b) NP subject (NS), c) pronoun subject (PS) and d) zero-marking (\(\emptyset\)S). Table 5.11 shows the results:

Table 5.11. Forms of co-referents to \textit{maintained} NPs in L1 Dutch, Japanese and L2 Japanese

<table>
<thead>
<tr>
<th></th>
<th>L1 Dutch</th>
<th>L1 Japanese</th>
<th>L2 Japanese</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN</td>
<td>15</td>
<td>47%</td>
<td>22</td>
</tr>
<tr>
<td>NS</td>
<td>3</td>
<td>9%</td>
<td>28</td>
</tr>
<tr>
<td>PS</td>
<td>13</td>
<td>41%</td>
<td>0</td>
</tr>
<tr>
<td>(\emptyset)S</td>
<td>1</td>
<td>3%</td>
<td>53</td>
</tr>
<tr>
<td>total</td>
<td>32</td>
<td>100%</td>
<td>103</td>
</tr>
</tbody>
</table>

For the purpose of comparison, the results from L1 Dutch and Japanese narratives are also provided. 32% of the \textit{maintained} NPs in L2 Japanese narratives occur after the introduction of new referents, 36% after an NP, 3% after a pronoun and 29% of the \textit{maintained} referents occur after clauses with zero-marked subjects. Two-thirds (68%) of the \textit{maintained} NPs in the L2 Japanese narratives occur either after the introduction of new referents or after clauses with subjects denoted by NPs.

Given its relatively high frequency, analysis was conducted on the NS condition. A qualitative analysis shows that L2 speakers may use NPs to denote \textit{maintained} referents even when the identities of the intended referents are predictable. For instance, in (19) and (20) the speaker continues to use a NP to refer to the \textit{maintained} referent.

(19) demo kaeru wa mori ni sudeimashita
    but frog TOP forest DAT live-ASP:PAST

(20) kaeru wa garasu no kazoku wa amari sukijanai
    frog TOP glass GEN family TOP not much like:NEG
dakara kaeru wa garasu no kazoku o demashita
therefore frog top glass gen family acc exist:PAST

mori ni kaerimashita
forest to return:PAST
 but the frog used to live in the forest
the frog does not like the glass family* (home)
so the frog got out of the glass family* (home) \( \emptyset \) returned to the forest

(20) demo kono otoko no ko ga inu chiisai inu o ga mo imasu
but this male gen child nom dog small dog acc nom also exit:NONPAST

chiisai inu wa otoko no ko o tetsudatte-agemasu
small dog top male gen child acc help-give:NONPAST

chiisai inu wa mado kara ochimasu:NONPAST
small dog top window from fall
but this boy also has a small dog (lit: As for this boy, a small dog exists)
the small dog helps the boy
the small dog falls from the window

The speaker in (19) re-introduces the *frog* into the narrative with a NP. As shown by arrows, in the following two consecutive clauses, the referent is in subject role, denoted explicitly by a bare NP, *kaeru* (‘frog’). No demonstrative is used, nor does the speaker connect the clauses with the TE:medial form so that a \( \emptyset \)-chain can be used. After three consecutive uses of the bare NP, the referent is finally marked by \( \emptyset \) in the immediately following clause. In (20), the L2 speaker introduces the *dog* with an adjective *chiisai* (‘small’). In the following two consecutive clauses, the NP, *chiisai inu* (‘a small dog’), is used to refer to the same referent (shown by arrows). The speaker repeats the NP to denote the maintained referent when the use of the NP is unnecessary. This over-explicitness by the excessive use of NP is consistent with the data in many of the L2 studies.

A qualitative analysis of the maintained NPs in the \( \emptyset \)S condition shows that the majority of the maintained referents occur after a short chain of zero-marking. In (21), the speaker switches from using NP to \( \emptyset \) in denoting the co-referent. However, in the immediately succeeding clause, the speaker switches the referential form back to NP, although the status of the referent is maintained (shown by an arrow).

(21) kare wa kono kaeru motte itte
he top this frog take:TE-go:TE

kare no heya ni okimashita
he gen room dat place:Past

kare no tameni chiisai garasu botoru de kaeru no *kazoku (uchi)
he gen for small glass bottle with frog gen house
Taro san wa tottemo ureshii desu.
Taro mr. TOP very happy COP
He took his frog and (φ) placed (him) in his room. For him, (φ) tried making a frog house with a glass jar. Taro is very happy.

In (21), the speaker first uses a pronoun to refer to the boy. In the following two clauses, the boy assumes subject role, thus establishing both of the co-referents as maintained. The subject of both clauses is denoted by φ. However, in the succeeding clause, a proper name for the boy, Taro, is used to refer to the same referent. It seems that the switch to the NP occurs because using an attenuated form (either pronoun or φ) may cause an ambiguity as to the identity of the intended referent. Note that in the given context, both the frog and the boy can be happy.

5.4.3 Referential forms denoting re-introduced referents
Tale 5.15 shows the distribution of referential forms used to refer to the reintroduced referents in the L2 narratives in comparison to the data for the source and the target language groups. In L2, NPs either consist of bare nouns or with demonstratives (62%). The learners of Japanese virtually never use pronouns to re-introduce referents. The other form used to re-introduce referents is φ. A total of 159 re-introduced referents were found in the L2 narratives.

![Figure 5.17. Frequency of referential forms used to denote re-introduced referents in L1 and L2](image)

Figure 5.17 shows the distribution of referential forms denoting re-introduced referents in L1 Dutch and L1 and L2 Japanese. 87% of the referents in the L2 narratives are re-introduced into narratives with a NP. The figures for the L1 Dutch and Japanese are 62% and 55%, respectively. In the case of φ, 13% of the re-introduced referents are zero-marked in L2 Japanese. The figures for L1 Dutch and Japanese are 2% and 45%, respectively.

As reported in 5.1.3, an omnibus repeated measures analysis of variance shows that there is a group effect for the use of NP (F(2, 39)=30.56, p <.001) and for the use of φ (F(2, 39) =94.36, p < .001). Post hoc analyses using the Dunnett T3 post hoc
criterion for significance indicate that the average ratio for the use of NPs to denote the re-introduced referents is significantly higher than in L1 Dutch and L1 Japanese (Table 5.12). The use of ø to mark the re-introduced referents is significantly higher in L2 than in L1 Dutch but lower than in L1 Japanese (Table 5.13).

**Table 5.12.** Comparison of the frequency of NPs in re-introducing referents (Dunnett T3)

<table>
<thead>
<tr>
<th></th>
<th>mean difference</th>
<th>std. error</th>
<th>sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>L2 Japanese</td>
<td>.342*</td>
<td>.037</td>
<td>.000</td>
</tr>
<tr>
<td>L1 Japanese</td>
<td>.279*</td>
<td>.058</td>
<td>.000</td>
</tr>
</tbody>
</table>

**Table 5.13.** Comparison of the frequency of ø in re-introducing referents (Dunnett T3)

<table>
<thead>
<tr>
<th></th>
<th>mean difference</th>
<th>std. error</th>
<th>sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>L2 Japanese</td>
<td>-.334*</td>
<td>.036</td>
<td>.000</td>
</tr>
<tr>
<td>L1 Japanese</td>
<td>.100*</td>
<td>.032</td>
<td>.016</td>
</tr>
</tbody>
</table>

A comparative analysis of the L1 Dutch and the L2 Japanese narratives shows that what is expressed with a pronoun in L1 Dutch may be expressed with a NP in L2 Japanese. In (22) and (23), the same speaker describes a similar scene in L1 and L2.

(22) Nou dat was een verhaaltje over een jongetje met een hond  
En het jongetje heeft een kikker in een glazen potje  
Maar ‘s nachts ontsnapt de kikker  
→ En daar komen ze ‘s morgens achter  
   Well, it was a story about a boy with a dog  
   and the boy has a frog in a glass pot  
   but during the night, the frog escapes  
   and they realize it in the morning

(23) otoko no ko wa chiisai kaeru ga arimasu  
   male GEN child TOP small  frog NOM exist:NONPAST  
   demo neru *no toki, kodomo, otoko no ko ga neru toki  
   but sleep GEN when,  child,  male GEN child NOM sleep when

   kaeru wa uchi o dasu  
   frog  TOP house ACC leave:NONPAST  
→ sono tsugi no asa, otoko no ko wa totemo sabishii desu  
   that next GEN morning, male GEN child TOP very lonely COP:NONPAST  
   The boy has a frog (lit: For the boy, a frog exists)  
   but when (ø) goes to bed, when the child, the boy goes to bed  
   the frog leaves the house  
   Next morning, the boy is very lonely
In (22), the speaker in his L1 reintroduces the *boy* and the *dog* into the narrative with a pronoun *ze* (‘they’) (shown by an arrow). However, when the *boy* is re-introduced into the narrative in the speaker’s L2 in (23), a NP, *otoko no ko* (‘boy’), is used (shown by an arrow). The examples above indicate the difficulty learners have in using attenuated forms in L2.

### 5.4.4 Zero-marking (Ø) in tracking referents

Table 5.14 shows the distribution of different types of zero-marking utilized in tracking referents (*maintained* and *re-introduced*) in the L1 Dutch and Japanese and L2 Japanese narratives.

<table>
<thead>
<tr>
<th></th>
<th>L1 Dutch</th>
<th>L1 Japanese</th>
<th>L2 Japanese</th>
</tr>
</thead>
<tbody>
<tr>
<td>overtly coordinate</td>
<td>31</td>
<td>77.5%</td>
<td>41</td>
</tr>
<tr>
<td>discoursally coordinate</td>
<td>5</td>
<td>12.5%</td>
<td>67</td>
</tr>
<tr>
<td>situationally coordinate</td>
<td>4</td>
<td>10%</td>
<td>20</td>
</tr>
<tr>
<td>total</td>
<td>40</td>
<td>100%</td>
<td>128</td>
</tr>
</tbody>
</table>

Table 5.18 shows that 52% of *Ø* used by the L2 speakers belong to the ‘discoursally coordinate’ type. The figure is higher than the figures for its L1 Dutch and L1 Japanese counterparts, whose figures are 12.5% and 10%, respectively. 32% of the *Ø* in L2 occurs in the contexts where its use is syntactically bound. Example (24) illustrates the typical use of ‘discoursally coordinate’ zero-marking in L2 speech production.

(24) *eto ootoo wa mado no* , no, mado *de(kara) heya o* demashita
well brother TOP window GEN GEN window at(from) room ACC leave:PAST

*eto kaeru, kaeru o *sagaru (sagasu) tameni chotto sanpo o shimashita
well frog, frog ACC search for little walk ACC do:PAST

*inu inu to isshoni sanpo o shimashita*
dog dog with together walk ACC do:PAST

*Well, my little brother left the room at the window, window*

*Well to look for the frog, (Ø) went for a short walk*

*With the dog, dog, (Ø) went for a walk*

In a series of utterances in (24), the speaker first uses a NP, *otooto* (‘my little brother’), as the referential form for the subject. In the following two clauses, the referent is denoted by *Ø*. In both cases, the speaker begins a new clause with a zero-marked subject. One noticeable characteristic of the L2 data is the strong preference that learners have for using ‘discoursally coordinate’ over ‘syntactically coordinate zero-marking, which can be realized by connecting clauses with the TE-medial form or by using other connectives.
5.4.5 Referential importance and the use of attenuated forms
Figures 5.18a and 5.18b below show the association between the use of attenuated forms and referential importance in the L2 narratives, as compared to the results for the L1 Dutch and Japanese narratives. In all three groups, the referents with a higher degree of referential importance are more likely to be associated with attenuated forms when referents are tracked. In the L2 narratives, 64% of attenuated forms used to maintain referents are associated with the boy, while the corresponding figure for re-introduced referents is 75%. Attenuated forms for tracking other referents are relatively rare. In fact, the frequency of referential forms used for characters with various referential importance shows a similar pattern between L1 Dutch and L2 Japanese. In other words, the L2 speakers seem to be choosing referential forms based on hierarchical structure of narratives (primary vs. peripheral characters) in the same way as in their L1.

![Figures 5.18a](image1.png) ![Figures 5.18b](image2.png)

**Figures 5.18a.** Attenuated forms and referential importance for maintained referents in L1 Dutch, L1 and L2 Japanese

**Figures 5.18b.** Attenuated forms and referential importance for the re-introduced referents in L1 Dutch, L1 and L2 Japanese

5.5 Gestural tracking of referents in L2 Japanese

64 gestures accompanied the maintained and re-introduced referents in the L2 Japanese narratives: 22 for the maintained and 42 for the re-introduced referents. Most of the gestures that accompany tracked referents occur on NPs. We will first analyse gestures accompanying the maintained referents.

5.5.1 Quantitative analysis of gesture accompanying maintained referents
There were a total of 22 gestures that marked maintained referents in L2 Japanese. Figure 5.19 shows the frequency of gestures accompanying the maintained referents in the L2 narratives in comparison to the figures for the L1 Dutch and Japanese narratives.
Figure 5.19. The frequency of gesture accompanying the *maintained* referents in L1 and L2

As reported in 5.2.1, an omnibus repeated measures analysis of variance with language group as a 3-level between-subjects factor and gestural accompaniment as a 2-level within-subjects factor revealed a significant group effect for the frequency of gestural accompaniment ($F(2, 39) = 5.88, p < .01$). Post hoc analyses using the Dunnett T3 post hoc criterion for significance indicate that while the Dutch learners of Japanese gesturally marked the *maintained* referents more frequently in L2 than in their L1, the average frequency of gestural accompaniment for the *maintained* referents between L1 Japanese and L2 Japanese is not significantly different (Table 5.15).

Table 5.15. Frequency of gestural marking of *maintained* referents in L1 and L2 (Dunnett T3)

<table>
<thead>
<tr>
<th></th>
<th>mean difference</th>
<th>std. error</th>
<th>sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>L2 Dutch</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L1 Dutch</td>
<td>.1203*</td>
<td>.03552</td>
<td>.012</td>
</tr>
<tr>
<td>L1 Japanese</td>
<td>.0691</td>
<td>.03920</td>
<td>.246    (n.s.)</td>
</tr>
</tbody>
</table>

The fact that the Dutch learners produce more gestures accompanying *maintained* referents in L2 than in L1 is in accordance with previous findings. Gullberg (2003) found that Swedish learners of French and French learners of Swedish both gesturally mark *maintained* referents significantly more in L2 than in L1. However, the similarity of gestural frequency between the native speakers and learners of Japanese was not expected. Thus, further comparative analysis was conducted in order to examine whether the quantitative similarity between L1 and L2 Japanese is mirrored in qualitative aspects of gestural marking of *maintained* referents.

5.5.2 Gestural reference maintenance in L2 Japanese

Similar to the analysis of gesture in L1 narratives, the following conditions were analysed for the gestures accompanying the *maintained* referents in the L2 Japanese narratives: 1) contexts where gestures occur, 2) referential importance and 3) qualitative analysis of gestures.
5.5.2.1 Contexts where gestures occur
As with the L1 analysis, gestures accompanying maintained referents in L2 Japanese are coded according to the contexts they occur in. The contexts are distinguished based on the form of the co-referent in the preceding clause. Since there are some gestures that accompanied pronouns, five contexts are identified: a) newly introduced NP (NI), b) NP (NS), c) pronoun (PS), d) ø with maintained informational status (ØSM) and e) ø with re-introduced informational status (ØSR). Table 5.16 shows the results of the distribution of 22 gestures that accompanied maintained referents in the L2 narratives in comparison to their L1 Japanese counterparts.

<table>
<thead>
<tr>
<th>Form of co-referent</th>
<th>L1 Japanese</th>
<th>L2 Japanese</th>
</tr>
</thead>
<tbody>
<tr>
<td>NI</td>
<td>8/26 31%</td>
<td>9/22 41%</td>
</tr>
<tr>
<td>NS</td>
<td>4/26 16%</td>
<td>8/22 36%</td>
</tr>
<tr>
<td>PS</td>
<td></td>
<td>2/22 9%</td>
</tr>
<tr>
<td>ØSM</td>
<td>6/26 23%</td>
<td>3/22 14%</td>
</tr>
<tr>
<td>ØSR</td>
<td>8/26 30%</td>
<td></td>
</tr>
<tr>
<td>total</td>
<td>26 100%</td>
<td>22 100%</td>
</tr>
</tbody>
</table>

The table shows that 77% of the gestures accompanying the maintained referents in L2 Japanese occur after clauses where the co-referents are explicitly identified in speech with NPs. 14% occur after clauses with zero-marked subjects. No gesture occurs after the re-introduced referents with zero-marked subject in L2. The results contrast sharply with the figure for L1 Japanese, where 53% of the gestures accompanying the maintained referents occur after a clause with an zero-marked subject. The difference in distribution suggests some qualitative differences in the gestures accompanying maintained referents in L1 and L2 Japanese.

5.5.2.2 Referential importance and gesture
Figure 5.20 shows a comparison of the association between the distribution of the gestures that accompany maintained referents and the referential importance of the referents in the L1 and L2 Japanese narratives.

Figures 5.20. The distribution of gesture accompanying the various maintained referents in L1 and L2 Japanese
The gestures accompanying the maintained referents in the L2 are distributed almost equally among the referents regardless of their referential importance. 38% of gestures accompany the boy, the dog or both the boy and the dog. The corresponding figure for the frog is 33%, and for the peripheral characters 29%. In contrast, in the L1 Japanese narratives, gestural tracking occurs mostly with the referents with relatively high referential importance. 71% of the gestures accompany the boy, the dog or both, as compared to 21% for the frog and 8% for peripheral referents. This difference in distribution again suggests some qualitative differences in gestures accompanying maintained referents in the L1 and L2 Japanese narratives.

5.5.2.3 Qualitative analysis of gesture accompanying maintained referents
Table 5.15 showed that 41% of the gestures on maintained referents occur after the introduction of new referents. Following is an example from the L2 Japanese data.

![Image](image_url)

**Figure 5.21.** Gesture accompanying maintained referents

In Figure 5.22, the introduction of the frog is accompanied by a quick serpentine gesture which locates the referent in the central gesture space (Figure 5.21:1). In the following clause, the frog is mentioned in subject role, denoted by an NP with a demonstrative as, sono kaeru (‘that frog’). The explicit reference to the second mention of the frog is accompanied again by a quick serpentine movement. The maintained gesture locates the referent in more or less the same space as the gesture accompanying the introduction of the frog (Figure 5.21:2).

In her L1 narrative, the same speaker describes the same scene using a similar discourse construction. However, the second mention of the frog is denoted by a pronoun die (‘he’). In addition, the attenuated form is not accompanied by a gesture. In L1, the speaker performs a gesture only when she introduces the jar (Figure 5.22). The comparison of gestures in L1 and L2 discourse shows that the anaphoric reference to the frog with an explicit NP in speech in L2 is reflected in a visible manual movement.
Nou eh Jan had een had een had een eh kikkertje en die woonde in een [glazen pot] in z’n kamer

*Well, eh, Jan had a had a had a ehm frog, and he lived in a glass pot in his room*

**Figure 5.22.** Gesture accompanying the referents

Table 5.15 shows that 36% of the *maintained* gestures in the L2 Japanese narratives occur in the NS condition. These are the gestures that accompany the repeated explicit mention of the referent in subject role. The following is an example: In Figure 5.23, the learner struggles to introduce the *dog* and provides information about the referent in the following clauses. Before its introduction in speech, the speaker points to the direction where the picture-book is located (not shown here). When introduced, the *dog* is first referred to as *ini* (‘dog’), which is repaired immediately to *chiisai inu* (‘small dog’). The introduction of the referent is accompanied by a deictic gesture which is immediately changed to a two-handed gesture\(^1\) (Figure 5.23:1). The *dog* assumes subject role in the next clause, thus establishing its informational status as *maintained*. The speaker uses the same NP, *chiisai inu* (‘small dog’) to refer to the *maintained* referent without attenuating the form. The explicit mention of the referent is accompanied by a slight lift of the right hand (Figure 5.23:2). In the immediately succeeding clause, the *dog* remains in subject role. The same NP is repeated as the referential form to denote the *maintained* referent. No attenuated forms are used. The explicit reference to the *maintained* referent is accompanied by another gesture which locates the referent in the higher gesture space (Figure 5.23:3). The curved fingers seem to depict the animate entity.

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\(^1\) Although the speaker performs two different gestures, they are counted as one referential gesture that accompanies the introduction of the referent (see Chapter 3 for coding).
Figures 5.23. Gestures accompanying reference to the *dog*

In Figure 5.23, the *dog* is explicitly identified with an NP in the three consecutive clauses. The explicit mentions of the referent are all accompanied by gesture. The over-explicit nature of L2 speech is thus reflected in gesture production. This type of gesture production is not observed in the same speaker’s L1 narrative.

*At that time is [a dog],
and that dog in the story creates many small stories,
and that makes my story so interesting and also difficult
So, the dog he also looks into the vase, but at that moment
the vase gests stuck round his head*

Figure 5.24. Gesture accompanying the mention of the *dog*

Figure 5.24 shows the gesture produced by the speaker in L1 when describing the same scene as in Figure 5.23. The gradual change of the information status of the referent is reflected in the choice of referential forms. The speaker first introduces the *dog* with an indefinite article and an NP, as in *een hondje* (‘a dog’). In the following clause, the speaker uses a combination of a demonstrative and an NP, *dat hondje* (‘that
dog’), to refer to the same referent. When the dog is mentioned again, the speaker uses the left-dislocated NP, *het hondje die* (‘the dog he’), to refer to the referent. Unlike his performance in L2, the speaker produces a gesture only when the dog is first introduced into the narrative.

In Figure 5.25, the learner describes the fact that the *frog* used to live in a forest and does not like the glass *jar* that the boy provided him as his house. As the speaker mentions the referent, he produces a two-handed gesture which indicates an entity (Figure 5.25:1). In the immediately following clause, the frog is in subject role, thus establishing its *maintained* status. The mention of the *frog* is accompanied by a gesture that is similar to the one associated with the same referent (Figure 5.25:2).

![Figure 5.25. Gesture accompanying the mention of the frog](image)

**5.5.3 Gestural reference re-introduction in L2 Japanese**

**5.5.3.1 Quantitative analysis of gesture accompanying re-introduced referents**

There were 42 gestures accompanying *re-introduced* referents in L2 narratives. Figure 5.26 shows the frequency of gesture accompanying *re-introduced* referents in the L2 Japanese narratives compared to the L1 Dutch and Japanese narratives.

![Figure 5.26. Frequency of gesture accompanying maintained and re-introduced referents](image)
25% of the re-introduced referents are gesturally marked in L2. The figures for the L1 Dutch and Japanese narratives are 9% and 14% respectively.

Recall that that an omnibus repeated measures analysis of variance showed a group effect for the frequency of gesture accompanying the re-introduced referents ($F(2, 39) = 7.49, p < .002$). Post hoc analyses using the Dunnett T3 post hoc criterion for significance indicate that the frequency of gestural accompaniment of the re-introduced referents is significantly higher in L2 Japanese than in both L1 Dutch and in L1 Japanese (Table 5.17).

| Table 5.17. Frequency of gestures accompanying re-introduced referents (Dunnett T3) |
|-----------------------------------------------|----------------|----------------|
| L2 Japanese                                  | L1 Japanese    | .159*          | .057           | .024           |
| L1 Dutch                                     |                | .221*          | .060           | .002           |

5.5.3.2 Referential importance and gesture

![Figure 5.27. Association between gestures accompanying re-introduced referents and referential importance](image)

Figure 5.27 shows the association between gesture and referential importance for the gestures accompanying re-introduced referents. 53% of the re-introduced gestures in L2 accompany mention of the boy and the dog. The figure is 36% for the frog and 12% for the peripheral referents. In all three groups, the boy and the dog are the referents most likely to be accompanied by gesture.

5.5.3.3 Qualitative analysis of gesture accompanying re-introduced referents

Because gestures marking re-introduced referents occur with intervals, they do not generally share recursive features with a gesture that accompanied the last mention of the referent. However, some L2 speakers seem to designate a gestural locus for a particular referent and anaphorically use the locus when the referent is re-introduced into the narrative throughout the story.

![Figure 5.28. Illustration of a fixed gestural locus for the boy.](image)

Figure 5.28 illustrates that the speaker seems to designate a fixed gestural locus and hand-shape for the boy. When the boy is first re-introduced in his narrative, the speaker produces a single-handed gesture which locates the referent in the left periphery (Figure 5.28:1). Twenty-two clauses later, the re-introduced referent is accompanied by a gesture which locates the referent in extreme left periphery but with
a slightly curved hand (Figure 5.28:2). Sixteen clauses later, a similar gesture accompanies the re-introduction of the same referent (Figure 5.28:3). This type of gesture is not observed in either L1 Dutch or Japanese.

Figure 5.28. Gestures accompanying the re-introductions of the boy

One interesting phenomenon that we observed with some of the learners is that the repair of the referent in subject role is reflected in gesture. Figure 5.29 illustrates the point. In Figures 5.29:1, 5.29:2 and 5.29:3, the referent in subject role switches between the frog and the boy. The speaker mentions the frog’s going home with the referent as the topic of the clause (Figure 5.29:1). Two clauses later he begins his utterance with the frog as a topic which he repairs to the boy after a pause. The repair of the referent in subject role is not only made in speech, but the switch is also visually contrasted by gestures. For instance, in Figure 5.29:1 and at the beginning of the utterance in 5.29:2, the speaker localises the referent, kaeru (‘frog’) with the right hand on the right side of his gesture space. The utterance is then repaired and a different referent, kodomo (‘child’), assumes subject role. The change of referent in subject role is clearly marked by the use of different gesture space and handedness. In contrast to the gesture associated with the frog, the gesture accompanying the mention of the child localises it in the centre of the gesture space with two hands (Figure 5.29:2). The frog is re-introduced in the immediately succeeding clause accompanied by a gesture which locates the referent in the same position as before with the same handedness as in
Figure 5.28:1. When referents (in subject role) switch rapidly like this, the contrastive use of space and hands visually captures the switch.

Figure 5.29. Gestures reflecting the switch of referent in subject role

5.6 Summary and discussion of bi-modal animate reference tracking in L2

This section reported on the analyses of bi-modal animate reference tracking in L2. The results were compared with those obtained for the L1 source and target groups. L2 speakers in the data seem to choose referential forms taking into consideration the principles that govern linear and hierarchical marking of information. For instance, just as in L1 Dutch and Japanese, attenuated forms are more preferred than NPs for reference maintenance, while NPs are more preferred than attenuated forms for reference re-introduction. With respect to referential forms and referential importance, just as in L1 Dutch, L2 speakers use an attenuated form for characters with more referential importance. However, L2 and native narratives differ in the distribution of forms, which seem to be caused by difficulties learners encounter in linguistically encoding anaphoric linkages in narratives.

The quantitative analyses of referential forms in speech production indicate that L2 speakers use NPs more frequently than their L1 native counterparts in reference
maintenance, resulting in the over-explicit nature of learner discourse. The occurrence of NPs in L2 does not seem to be pragmatically driven as in L1 Japanese where they mostly occur either immediately after the introduction of referents or after clauses with zero-marked subjects. Learners use NPs even when explicit reference is not necessary. It has been suggested in the literature that over-explicitness in L2 narrative is mostly due to the complexity of pronominal forms where the mastery of attenuated forms poses a great challenge for learners. However, the target language for the L2 speakers in the present work does not actively use pronouns. Nonetheless, the results show that learners rely on NPs as the referential form to maintain reference. This phenomenon may at first glance seem puzzling. In contrast to the use of pronouns, which may be complex and error-prone, Ø seems superficially simple to use. After all, all one has to do is to drop the referential form. However, the data prove otherwise. Learning to use nothing (i.e. Ø) seems as hard as learning to use complex reference forms.

One of the reasons for the infrequent use of Ø by L2 speakers of Japanese is that the referential form does not capture the gradual change in the informational status of the referent. Faced with the extreme choices of Ø or NPs, learners seem to choose the latter to avoid any ambiguity Ø may cause with respect to the identity of the intended referent. The other possible reason may be related to the learners’ avoidance of certain complex grammatical constructions. Japanese is a language with a rich agglutinating verb morphology. Accordingly, it does not have a simple connective such as ‘and’ to join verbs. Instead, the connection is made by conjugating the verbs in the TE medial form. This form provides the condition for the use of Ø. In addition, native speakers often utilize passive constructions to create Ø chains. However, both forms are too complex for the learners in the present work. Thus, they avoid both constructions and, instead, utilize the strategy of dropping the subject of the succeeding clause without syntactically connecting the clauses as long as the identity of the zero-marked subject is recoverable from the context. This strategy seems to work, but only for a limited number of speakers. Even then, a long Ø chain is rarely observed. Not being able to create conditions that allow the use of Ø, learners have little choice but to use NPs to track referents. Consequently, their discourse is characteristically over-explicit.

As for the re-introduction of referents, the learners seem to show an even stronger preference for using NP and avoiding Ø. One of the reasons for their reluctance to use Ø may be related to the degree of reliance required of the listener to recover the identity of the zero-marked subject. In the Dutch narratives, it is rare for speakers to re-introduce referents with Ø. Even re-introduction of referents with pronouns supplies the number and the gender of the subject. Thus, during the L2 narratives, the learners may transfer the idea of how much information about the identities of the intended referents should be presented linguistically to the listener. In other words, re-introduction of referents with no linguistic information may pose a challenge for learners. Consequently, in L2 narratives, the referent in subject role constantly switches, reflecting characteristic ‘view-hopping’ where narratives are not provided from a fixed viewpoint. In short, the results indicate that unlike learners of European languages for whom the difficulty of organization of discourse lies in learning pronominal forms, the difficulty for learners of Japanese may lie not only in learning
how to maintain but also to re-introduce reference with ø (cf. Jung (2004) for difficulty of learning zero-marking for English learners of Korean).

The analyses of L2 gesture production show quantitative and qualitative differences in gestural tracking of referents between L1 Dutch and L2 Japanese and also between L1 Japanese and L2 Japanese. The results show that Dutch learners of Japanese gesturally track referents more frequently in L2 than in L1. Although no quantitative difference is observed in the frequency of gestures accompanying maintained referents between the L1 and L2 Japanese narratives, qualitative differences are observed between gestures made by the native speakers and learners of Japanese. The majority of gestures accompanying maintained referents in L2 mirror the over-explicit marking of referents in speech. This contrasts sharply with gestures accompanying maintained referents in L1 Japanese which seem to occur for the purpose of either firmly establishing identities of referents with referential importance or disambiguating the identity of zero-reference. The frequency of gestures placed on the peripheral characters suggests that the gestures in L2 may occur to distinguish referents in events description. When the scene involves multiple characters, the physical nature of gestures may help track referents more efficiently by distinguishing referents via the selection of distinct locations in the gesture space, hand-shape and hand-orientation.

The analyses of the gestures accompanying re-introduced referents show that some L2 speakers may use gesture to establish the anaphoric relationship between the multiple mentions of particular referents throughout the narratives. One of the reasons for the higher frequency of the gestures accompanying re-introduced referents in L2 may be that the speakers feel the need to distinguish between introduced and re-introduced. For instance, although re-introduced referents are sometimes accompanied by a demonstrative, sono (‘that’), many re-introduced referents in L2 are denoted by bare NPs. Given the fact that Japanese has no article system, a newly introduced NP and a re-introduced NP may be expressed in exactly the same way. In other words, there is nothing in speech that indicates the difference between reference introduction and re-introduction if both referents are expressed with bare NPs. This may be the reason why many of the gestures accompanying the re-introduced referents show anaphoric features performed in the same gesture space with a similar hand-shape and hand-orientation. Such recursive features of the gestures may physically indicate the fact that the NP in speech is not a completely new referent but an anaphor.

In summary, the linguistic introduction and tracking of animate referents in L2 narrative reflects that learners map the principles of information organization they already have from using L1 onto L2 narrative discourse. However, due to the differences in linguistic devices available in the TL for reference tracking, learners encounter encoding problems, which result in L2 specific characteristics of over-explicitness. Interestingly, this over-explicitness is also mirrored in gestural reference tracking which is uniquely L2-like. In the following chapter, we will shift our focus to inanimate referents with respect to how they are introduced and tracked in L1 Dutch and Japanese and L2 Japanese narratives.