Chapter 5
Mouth Actions in ISL – Sociolinguistic Factors

In this chapter, current findings on sociolinguistic factors influencing mouth actions in ISL with respect to the Signs of Ireland Corpus are discussed. Suggestions from earlier works such as Ó Baoill and Matthews (2000) will be considered for the analysis.

To this end, the chapter is subdivided into three subchapters. The first subchapter outlines research questions and hypotheses regarding the sociolinguistic factors gender and age. Afterwards, mouth actions with respect to gender are elaborated on and subsequently, in the last subchapter, the sociolinguistic factors gender and age are combined and the results of the whole chapter are discussed.

5.1. Research Questions and Hypotheses

The current study is the first to investigate mouth actions in ISL empirically and systematically. Although mouth actions are mentioned by most researchers, these claims are often based on their own language competence instead of empirical research. Thus, utterances remain rather vague as was already mentioned previously. The aim of the current study is hence to investigate whether mouth actions in ISL are used systematically and whether certain patterns with regard to linguistic and sociolinguistic factors can be observed.

The sociolinguistic factors that possibly play a role with respect to mouth actions are gender and age. Age is accredited as an important factor in the literature as well, as Ó Baoill and Matthews (2000:10) claim: “Older deaf people [...] use no lip-patterns [mouthings] to accompany their meanings [...]” and “Younger deaf people in Ireland [...] articulate these meanings [...] with the addition of English influenced lip-patterns [mouthings]”. A signer’s age might especially influence his/her mouthing behaviour, as this is largely language contact induced (cf. chapter 3.2.3). This language contact was enforced in deaf schools, to which the oralist method (cf. chapter 2.2) was introduced at different times. Consequently, I hypothesize that a signer’s age has an impact on his/her mouth action behavior in that older signers who were educated before the introduction of oralism use less mouthings than younger signers who were educated in the oralist method. Gender, as
mentioned in chapters 2.1 and 2.2, is an important factor not only concerning the lexical level but also other linguistic levels such as that of discourse in ISL. Therefore, I hypothesize a signer’s sex to have a considerable impact on his/her mouth action behavior, especially because oralism was introduced at different times to the boys' and girls' school. With respect to mouth gestures, age and gender are not expected to have any effect.

5.2. Mouth Actions and Gender

As was already mentioned previously, gender variation plays an important role in ISL not only on the lexical level. Other researchers like Ó Baoill and Matthews (2000) already anticipated that gender variation has to exist with respect to mouth actions in ISL. In the following, this claim will be investigated empirically for the SOI data, drawing on preliminary results that were presented in Mohr (2012). A detailed qualitative analysis of mouth actions was provided in chapter 4, the discussion in the next sections will be mainly quantitative. I will start with an evaluation of mouth actions in women, followed by an analysis for the men. The last section provides a summary of the obtained results in the form of a comparison of the two groups.

5.2.1. Mouth Actions in Women

Irrespective of age groups, the category mouthings is the largest category concerning the women’s mouth actions. In 62% (606) of the cases, a mouthing accompanies their manual signs. Mouth gestures occur less frequently, only 17.9% (175) of their manual signs are accompanied by a mouth gesture. 20.1% (197) of all manual signs are not accompanied by any mouth action at all. The use of mouthings varies between individual signers. Hence, the frequency of mouthings amounts to 86.8% (99) in one woman, while it is considerably lower in another one 36.6% (83). This is shown in more detail in table 5.1.

Regarding the different types of mouthings in the women, TYPE 1 (formally and semantically congruent) mouthings were the most frequent type in all women. However, with respect to the other types of mouthings that occur in individual signers, the female group is quite heterogeneous. This is exemplified by TYPE 4 (inflected English) mouthings. While some women make extensive use of inflected English mouthings, others rarely use them at all. This might be due to differences in oral training that the signers received.
Concerning the spreading behaviour of mouthings in the women’s signing (TYPE 6b, spread mouthings), both directions, i.e. rightward and leftward spreading, occur. However, although both directions are possible, rightward spreading is more frequent in the data than leftward spreading. The ratio is 58% (29) rightward to 42% (21) leftward.

Another issue refers to TYPE 6 mouthings. Generally, they (TYPEs 6a-c mouthings) occur relatively frequently in one signer while they do not occur at all in others. Thus, these mouthings are by no means a phenomenon that is conventionalized in any way. An interesting case is one particular signer who produced extraordinarily many mouthings that did not fit the manual sign. In her case, the manual signs of both concepts were indeed phonologically related (ladder and bike which are distinguished by different handshapes and slightly different movements), however, she produced the mouthing mistakes deliberately. Her personal story was about a misunderstanding between her and her daughter who continually produced the sign ladder while actually meaning bike and using the mouthing “bike”, too. Apparently, the daughter’s mouthings did not disambiguate the situation.59

The use of mouthings in this way has also been reported by Boyes Braem (2001) who referred to it as “constructed speaking”, i.e. the imitation of hearing people’s speech. An example of this mismatch between sign and mouthing in the SOI can be seen in figure 5.1.

Finally, instances of mouthings occurring without a sign that have been reported by other researchers for other sign languages, could also be found in the ISL data. However, these instances were extremely rare and are definitely an exception from the normal pattern of matching manual signs and mouthings.

Table 5.1 Mouthings in women

<table>
<thead>
<tr>
<th></th>
<th>No. of signs</th>
<th>No. of mouthings</th>
<th>No. of mouth gestures</th>
<th>No mouth action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caroline</td>
<td>114</td>
<td>99 (86.8%)</td>
<td>5 (4.4%)</td>
<td>10 (8.8%)</td>
</tr>
<tr>
<td>Eilish</td>
<td>103</td>
<td>59 (57.3%)</td>
<td>25 (24.3%)</td>
<td>19 (18.4%)</td>
</tr>
<tr>
<td>Marian</td>
<td>294</td>
<td>211 (71.8%)</td>
<td>79 (26.9%)</td>
<td>4 (1.4%)</td>
</tr>
<tr>
<td>Michelle</td>
<td>227</td>
<td>83 (36.6%)</td>
<td>29 (12.8%)</td>
<td>115 (50.7%)</td>
</tr>
<tr>
<td>Noeleen</td>
<td>136</td>
<td>91 (66.9%)</td>
<td>7 (5.1%)</td>
<td>38 (27.9%)</td>
</tr>
<tr>
<td>Sarah Jane</td>
<td>104</td>
<td>63 (60.6%)</td>
<td>30 (28.8%)</td>
<td>11 (10.6%)</td>
</tr>
<tr>
<td>Total</td>
<td>978</td>
<td>606 (62.0%)</td>
<td>175 (17.9%)</td>
<td>197 (20.1%)</td>
</tr>
</tbody>
</table>
For the second part of this discussion, I now want to turn to mouth gestures. Just as the frequency of mouthing varies between individual signers, it varies with respect to mouth gestures. Thus, one woman uses 28.8% (30) mouth gestures while another one uses only 4.4% (5) with her signing. This difference will also be discussed in detail in section 5.2.3.

All three different kinds of mouth gestures occurred in the women’s signing. As examples of the types of mouth gestures were provided in section 4.2.2, I only want to mention some often recurring mouth gestures which would need to be classified as different types of mouth gestures according to the manual sign they accompany. Examples of these mouth gestures are “closed, stretched up/down” and “open, stretched up/down”. The signs they occurred with varied a lot, thus they accompanied verbs, adjectives and indexical signs alike. This implies that they are not limited to certain signs or even constitute an obligatory part of certain signs. However, it is striking that they occurred even in those women who used very few mouth gestures in general. Hence these mouth gestures might be part of the core inventory of mouth gestures of ISL.

With respect to the different types of mouth gestures, TYPE 3 (enacting mouth gestures) was less frequent than TYPEs 1 (adverbial mouth gestures) and 2 (semantically empty mouth gestures) but not significantly so.

After having discussed the occurrence of mouth actions in women, the next section analyses mouth actions in men.

5.2.2. Mouth Actions in Men

In contrast to the women’s mouth actions investigated in the preceding section, mouthings do not constitute the largest category in the men’s
signing. Irrespective of age groups, mouthings are used with a frequency of 33.3% (458), mouth gestures are used less with 19.8% (272) while 46.9% (645) of all manual signs were not accompanied by any mouth action at all. It is striking that “nothing” is the largest category in the men while it is the smallest category in the women. However, these differences will be discussed in detail in section 5.2.3.

Moreover, it was mentioned that the mouth actions of the women varied considerably from signer to signer, no matter if mouthings or mouth gestures were concerned. This is a feature that is even more noticeable in the men. Thus, one signer used 76.7% (46) of mouthings with his signs, while another used only 1.3% (3). With respect to mouth gestures, one man used 39.6% (74) mouth gestures with his signs, while another only used 9.0% (21). These differences seem to be caused by age differences, which is why they will be elaborated on in section 5.3. The exact frequencies of the different kinds of mouth actions in the men are shown in table 5.2 below.

Table 5.2 Mouthings in men

<table>
<thead>
<tr>
<th></th>
<th>No. of signs</th>
<th>No. of mouthings</th>
<th>No. of mouth gestures</th>
<th>No mouth action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fergus D.</td>
<td>523</td>
<td>297 (56.8%)</td>
<td>48 (9.2%)</td>
<td>178 (34.0%)</td>
</tr>
<tr>
<td>Fergus M.</td>
<td>233</td>
<td>3 (1.3%)</td>
<td>21 (9.0%)</td>
<td>209 (89.7%)</td>
</tr>
<tr>
<td>Kevin</td>
<td>212</td>
<td>41 (19.3%)</td>
<td>60 (28.3%)</td>
<td>111 (52.4%)</td>
</tr>
<tr>
<td>Laurence</td>
<td>187</td>
<td>67 (35.8%)</td>
<td>74 (39.6%)</td>
<td>46 (24.6%)</td>
</tr>
<tr>
<td>Peter</td>
<td>160</td>
<td>4 (2.5%)</td>
<td>59 (36.9%)</td>
<td>97 (60.6%)</td>
</tr>
<tr>
<td>Sean</td>
<td>60</td>
<td>46 (76.7%)</td>
<td>10 (16.7%)</td>
<td>4 (6.7%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,375</strong></td>
<td><strong>458 (33.3%)</strong></td>
<td><strong>272 (19.8%)</strong></td>
<td><strong>645 (46.9%)</strong></td>
</tr>
</tbody>
</table>

With respect to the different types of mouthings, the diversity of the different types is not as big as that observed in women. Hence, only three of the six men show a considerable variety of mouthings while the other three mainly show TYPE 1 (formally and semantically congruent) and 6b mouthings. Also, TYPES 2 and 5 are generally rather rare in the men’s signing. Nevertheless, reduced mouthings (TYPE 5) seem to be more frequent in men than in women. This is an issue to be taken up in 5.2.3.

Regarding TYPE 6b, spread mouthings, the direction of spreading is an interesting point. Both directions, i.e. rightward and leftward spreading are possible. Similar to the women, progressive spreading is more frequent...
than regressive spreading, however, the difference is not as pronounced as in women. In the men the ratio is 51.7% (15) progressive and 48.3% (14) regressive spreading.

Finally, it is noteworthy that isolated mouthings, i.e. mouthings not accompanying a manual sign, which were attested for the women, could also be found in male signing. However, these instances are rather rare.

After having provided a description of the mouthing behavior of the men, I will now discuss their mouth gestures. All three types of mouth gestures that were established in 4.2.2 could be observed for the men. Concerning mouth gestures, the male and the female group seem to be much more similar than with respect to mouthings.

The same often recurring mouth gestures that were mentioned for the women could also be found in the men. Examples of these mouth gestures are “closed, stretched up/down” and “open, stretched up/down”. Just as reported for the women, the signs they occurred with varied a lot and they accompanied different lexical classes. Moreover, they occurred even in those men who used very few mouth gestures in general. This emphasizes the claim made in section 5.2.1 that these mouth gestures might be part of the core inventory of mouth gestures of ISL.

Similar to the mouth gestures described in 5.2.1, TYPE 3 (enacting) mouth gestures were generally less frequent than the other mouth gesture types.

In the following chapter, the results from 5.2.1 concerning the mouth action of the women and 5.2.2 concerning the mouth actions of the men will be summarized and compared.

5.2.3. Comparison of Mouth Actions in Men and Women

After a detailed analysis of both types of mouth actions in women and men separately, this section provides a short summary of the preceding ones in form of a comparison of mouth actions concerning both sexes. As was already mentioned briefly in the previous sections, mouth actions differ between men and women. This can be seen in figure 5.2.

As becomes apparent, mouth actions in men and women differ especially concerning the use of mouthings with their signs and with respect to those signs that are not accompanied by any mouth action. The category mouthing is thus almost twice as large in women as in men, while the picture is reversed for the category nothing (it is twice as large in men than in women). This shows that men use less mouth actions (irrespective of their type) in general. Furthermore, they use especially few English-related mouthings.
It should be kept in mind, however, that the percentages for this overall comparison are not always mirrored within the two groups. Thus, there are considerable differences in mouth behaviour between individual signers, which, given the relative size of the sample, may distort the average. This is a feature that is especially prominent in the male group.

When further examining the quality of the mouth actions in men and women, both similarities and differences can be found. With respect to mouthings, all types of mouthings found in women were also found in men. The overall combinations found were: one mouthing+one manual sign, two (or more) mouthings+one manual sign, a reduced mouthing+one manual sign, one mouthing+no manual sign.

When comparing the individual types that were established in 4.2.1, it becomes clear that the men show less variety in their manual + mouthing combinations in general. A fact that becomes especially apparent is the rarity of TYPEs 4 (inflected English mouthings), 6a (simultaneous compounds/modifiers) and c (relating to the overall story). The rarity of these types of mouthings seems interrelated as all types are concerned with mismatches of manual signs and mouthings. The discrepancies between manual and mouthing are stronger in TYPEs 6a and c, but they are still (formally) visible in TYPE 4 (inflected English) mouthings. With respect to the TYPE 4 mouthings in particular, it is logical that men show them less frequently than women, as they require a very profound knowledge of English grammar. As oralism was introduced later at the boys’ school, the rarer use of “correct” English forms in mouthings seems logical. Moreover, this might be a reflection of

![Figure 5.2 Comparison of mouth actions in men and women](chart.png)
differences in everyday use of mouthings as the social contexts in which men and women use sign language might differ. Concerning the spreading behaviour of mouthings, it has already been mentioned that it is similar in men and women. Both genders show more progressive than regressive spreading, although the difference between spreading directions is larger in the women than it is in the men. This is illustrated in figure 5.3 below.

![Figure 5.3 Spreading directions in men and women](image)

In section 4.2.1 it was already mentioned that spread mouthings from content word to content word could be observed in the data. While this phenomenon occurred in both genders, it is considerably more frequent in men than it is in women: 55.2% of all spreading cases in men involved two lexical items, while it was only 18.0% in all women.

With respect to mouth gestures, men and women do not behave very differently. All three types of mouth gestures from chapter 4.2.2 are found in the men’s and women’s signing alike. Similarly, TYPE 3 mouth gestures were least frequent in men and women.

The coincidence of the semantically empty mouth gestures found with the manual sign good in both men and women hints at a shared inventory of mouth gestures for ISL. Moreover, the recurrence of certain mouth gestures like “closed, stretched up/down” or “open, stretched up/down” emphasizes this claim. Thus, in comparison to the use of mouthings, the use of mouth gestures seems to be more regular, homogeneous and more regulated within the linguistic system.

Summarizing, it can be stated that there are gender differences in mouth action behaviour in ISL, however, these only exist concerning English-based
mouthings and not with respect to mouth gestures. The latter type of mouth actions seems to be fairly regulated.

5.3. Combining Two Sociolinguistic Factors – Gender and Age

As was already hinted at briefly in section 5.1, age differences play an important role with regard to mouth actions in ISL, too. These differences have been accredited in the literature (e.g. Ó Baoill & Matthews 2000), stating that older signers use less English influenced mouthings than younger signers. Although general tendencies for both sociolinguistic factors investigated could be found, the individual groups of women, men, age group 1 (younger signers), age group 2 (middle-aged signers) and age group 3 (older signers), turned out to be rather heterogeneous. A possible reason for this could be that both factors, gender and age, are interrelated and thus mutually influence each other. In order to test this, I will combine both factors in the following and analyze whether this explains some of the inconsistencies in the results obtained so far. The current chapter will thus also serve as a discussion of the previous ones.

Before elaborating on the interplay of the sociolinguistic factors gender and age, I will briefly comment on the differences in quantity and quality of the different mouth actions across the three age groups introduced in chapter 4.1. Starting with a quantitative evaluation, percentages for the different kinds of mouth movements for all three age groups are given in the below figure.

![Figure 5.4 Comparison of mouth actions across age groups](#)
The general tendency that can be inferred from this figure is that mouthings become more frequent in younger signers (age group 1) while the frequency of mouth gestures seems to decrease over the three generations. More explicitly, figure 5.4 shows that the use of mouthings increases from 37.7% in the elder signers, to 40.4% in the second age group (middle-aged signers), to 65.0% in the youngest signers. The frequency of mouth gestures however, first decreases from 29.1% in age group 3 (older signers) to 9.0% in age group 2 (middle-aged signers), only to increase to 22.4% in age group 1 (younger signers) again. It is not completely clear why the frequency of mouth gestures first decreases and then increases again. One explanation might be that the use of mouthings and the use of mouth gestures is in complementary distribution so that the increasing use of mouthings in age group 2 (middle-aged signers) causes a decrease in mouth gestures in that age group. However, an analysis of an even younger generation than the youngest signers from the SOI might shed more light on the situation. This is beyond the scope of this book and might be an issue for future researchers to tackle with new sets of data.

Finally, it can be stated that signers generally accompany more and more manual signs by some kind of mouth action as the category “nothing” first increases from age groups 3 (older signers) (33.2%) to age group 2 (middle-aged signers) (50.6%) and then reduces by more than half to 12.7% in age group 1 (younger signers).

Regarding the quality of the mouth actions, the groups are very similar, however, there are some combinations of manual sign and mouth action that occur in one group and not in another or vice versa. Generally, however, the same combinations of mouthings and manual signs that were found in men and women were found for all three age groups. Thus, the observed combinations were: one mouthing+one manual sign, two (or more) mouthings+one manual sign, a reduced mouthing+one manual sign, one mouthing+no manual sign. While the age groups behave similarly concerning certain types of mouthings, as for example TYPE 1 (formally and semantically congruent) mouthings, other types appear more interesting as the mouthing behaviour of the groups is divergent. These are TYPE 2 (semantically similar but formally different) mouthings and especially TYPE 5 (reduced) mouthings. Hence, compared to age groups 1 (younger signers) and 3 (older signers), TYPE 2 (semantically similar but formally different) mouthings occur rarely in age group 2 (middle-aged signers). In the 36–50 year-olds’ signing, the manual signs were usually combined with a mouthing that completely matches the manual sign (TYPE 1). If not, the mouthing did not match the manual sign at all; TYPE 2 (semantically similar but formally different) cases which are sort
of intermediate cases thus occurred only rarely. Interestingly, the frequency of TYPE 5 (reduced) mouthings is also very divergent concerning the different age groups. They do not occur at all in the second age group (middle-aged signers), while they are relatively frequent in the third. It seems rather logical that when a certain age group uses many reduced mouthings consisting of incomplete English words, it is not very likely for them to use mouthings that contain even more information than necessarily required. This holds true for age group 3 (older signers), while it is exactly the other way around with age group 2 (middle-aged signers). They frequently express more information than necessary in their mouthings, hence reduced mouthings containing less than the complete English word are rare.

The spreading behaviour of the different age groups, although similar at a first glance, shows certain differences as well. Regarding the direction of spreading age groups 1 (younger signers) and 2 (middle-aged signers) show more progressive than regressive spreading. In contrast, age group 3 (older signers) shows more regressive spreading. Looking at the items involved in the spreading, similarities between age groups 2 (middle-aged signers) and 3 (older signers) become apparent. In these two groups, the majority of spreading cases are concerned with content to function word spreading as only one third of all cases involve content to content word spreading. In opposition to that, almost half of all spreading cases in age group 1 (younger signers) involve content to content word spreading. One possible explanation for this may be the fact that the percentage of mouthings is highest in this group which means that there are more possibilities for spreading in general.

When combining age and gender for age group 1 (younger signers) and thus breaking the age group down into a male and a female group, considerable differences especially for the category “mouthings” become apparent. While the men use 56.2% of mouthings with their signs, the women use 73.7% of mouthings. The category of “mouth gestures” also differs considerably between the men and women of the youngest generation. Hence the men use considerably more mouth gestures (28.2%) than the women (16.6%). The category “nothing” also shows noticeable differences for men and women (15.6% in men and 9.7% in women). A summary of these figures can be seen in figure 5.5.

In the second age group (middle-aged signers), differences are visible concerning all categories of mouth actions. The differences concerning the category of “mouthings” are even more pronounced than in age group 1 (younger signers). While the men use only 29.1% of mouthings with their signs, the women use 51.7%. Contrastingly, the mouth behaviour of men and
women in this age group is very homogeneous with respect to the category of “mouth gestures”. Both men and women use roughly 9% of mouth gestures with their signs. The category “nothing” shows a very different picture as the men do not use any mouth action with their signs in 61.8% of the cases while this figure only amounts to 39.3% in the women. A summary of this is shown in figure 5.6 below.

Finally, differences in mouth behaviour can also be observed in the third age group’s (older signers) signing. The differences concerning the category
“mouthing”s are most pronounced in this age group: the men use only 10.9% of mouthing with their signs while the women use 64.5%. The category of “mouth gestures” however, shows rather similar numbers for both sexes (32.6% in men and 25.6% in women). When observing the number of signs that are not accompanied by any mouth action at all, striking differences become visible. The men do not use any mouth action at all with 56.5% of their signs which means that more than half of their signing is not accompanied by any mouth action at all. In the women, only 9.9% of all signs are not accompanied by any mouth action, so that a large part of the sign stream is accompanied by some kind of movement of the mouth. A comparison of these figures is shown in figure 5.7.

![Comparison of mouth actions in men and women in age group 3](image)

**Figure 5.7** Comparison of mouth actions in men and women in age group 3

After having looked at the figures for all three age groups separately, certain trends concerning the mouth behaviour of the groups become apparent when looking at them in sum. While a general tendency towards a more frequent use of mouthing in the younger signers was already visible for the three age groups irrespective of the signers’ sex, it is also visible when looking at the men’s data only. However, figures are lower for the men only, starting at 10.9% in age group 3 (older signers) and ending at 56.2% in age group 1 (younger signers). Surprisingly, this upwards trend with respect to mouthing turns out to be less pronounced in the women. Figures are rather stable when comparing the three different age groups. Hence, figures start at 64.5% in age group 3 (older signers), fall to 51.7% in age group 2 (middle-aged signers) and rise again to 73.7% in age group 1 (younger signers). The women’s use
of mouthings is thus much more stable across apparent time, as measured by age groups than the men’s concerning the category of mouthings.

Regarding the category of mouth gestures, figures for men and women are also different across the three age groups. They fall from 32.6% to 9.1% only to rise again to 28.2% in the men. In the women they fall from 25.6% to 9% and rise to 16.6% again. However, there seems to be a general downwards trend concerning the use of mouth gestures in women which is not apparent in men. A similarity of the developments is the decrease of mouth gestures in the second age group (middle-aged signers) in both sexes. This could be due to the fact that the use of mouthings and mouth gestures is inter-related, i.e. that when the use of one category is increased the use of the other category decreases.

The general trend for the use of mouth gestures across generations is slightly different from what was observed for women and men separately. The general development observed for mouth gestures across age groups irrespective of the signers’ sex was a slight downward trend with an even more pronounced decrease from age group 3 (older signers) to 2 (middle-aged signers) (29.1% to 9% to 22.4%). This sudden decrease of mouth gestures in age group 2 (middle-aged signers) does not seem logical as mouth gestures are a sign language inherent feature with grammatical function and are thus necessary for the system. It might be the case that this decrease is due to the kind of stories the signers were telling. It was already mentioned that enacting mouth gestures only rarely occurred in the stories of age group 2 (middle-aged signers). This might be a possible influence on the figures.

The category “nothing” seems to be the outcome of the interplay of mouthings and mouth gestures. Naturally, the category grows or diminishes influenced by the developments in the other two categories. Thus, with the increasing use of mouthings and a more or less stable use of mouth gestures in men, the occurrence of no mouthings decreases from 56.5% in age group 3 (older signers) to 15.6% in age group 1 (younger signers). The development is similar to that observed for all signers across age groups, however, figures start higher and decrease more slowly than in all signers.

The development detected for the women across the age groups is very curious. In their signing, less signs are not accompanied by any mouth action: figures increase from 9.9% in younger signers to 39.3% and rapidly decrease to 15.6% in the oldest signers again. The development is thus neither similar to the general development of the age groups nor to the development in men. This trend is however related to the figures observed for the different kinds of mouth actions. While the use of mouthings only slightly increases in the women, their use of mouth gestures decreases which results in an increase
of the figures for the category nothing. A summary of the developments concerning all three categories and combining gender and age can be seen below.

![Graph showing mouth actions for all sociolinguistic factors](image)

**Figure 5.8** Comparison of mouth actions for all sociolinguistic factors

There are several possible reasons for the different developments concerning men and women across generations. The most plausible reason seems to be the difference in educational methods at the Cabra schools. Thus, the women who attended St. Mary’s School for Deaf Girls were subjected to the oralist education method (using spoken English as the medium of instruction) much earlier than the men who attended St. Joseph’s School for Deaf Boys. This is most visible in the more frequent use of language contact induced English mouthings by the women of all age groups. Even the women in the elder signers’ age group already use a considerable amount of mouthings when the men only use these very infrequently. Furthermore, it is clearly observable that those younger male signers that were also subjected to the oralist education method at school use more English mouthings than the signers of the third age group (older signers). This development was also commented on in detail in Mohr (2012).

The general upwards trend towards a more frequent use of mouthings in both sexes would thus be related to the oralist education method being firmly established at both Cabra schools. The only thing that cannot be accounted for by this explanation is the difference between men and women in age group 1 (younger signers). Despite the fact that the current language policy at both
schools is an oralist one, there are differences concerning the use of mouthings in male and female signers. In order to further investigate this issue, real life teaching situations and communication situations between teachers and students would have to be observed. This is beyond the scope of this book and remains a matter to be investigated by future analyses. However, it was mentioned in chapter 5.2.3 that other social factors like the social contexts in which men and women interact in their daily lives as well as differences in values men and women place on speech skills might be another influential factor.

The altogether rather stable use of mouth gestures across age groups is probably due to the fact that mouth gestures are sign language inherent. Therefore, they are a linguistic feature that is a stable (except for slight changes) part of the linguistic system. The category of mouth gestures thus seems to be the more stable of the categories of mouth actions.

This finally leads to the developments observed for the category “nothing”. A cross generations a downwards trend was visible which could be explained by the increasing use of mouthings across age groups. The same development holds true for the male signers, the only difference being a more pronounced development in the men. In the women, the development is the opposite: fewer signs are accompanied by any mouth action from age group 3 (older signers) to age group 1 (younger signers). This, however, could be explained by the observations made for the other categories just described.

Summing up, an account for the differences between age groups and sexes in use of the different kinds of mouth actions would entail several things. Firstly, it would mean that language contact has a major influence on sign languages and some parts of their lexicon. This can be seen in the increasing use of mouthings in ISL. Mouthings enter a sign language as cross-modal borrowings from the surrounding spoken language and might ultimately acquire other, additional functions as was shown in chapter 4. They gradually become more and more established in the vocabulary of the sign language concerned. However, this fact is no particularity of sign languages but can be observed in spoken languages, too. It is merely the cross-modal component that is unique to this language contact situation.

Generally, contact phenomena range from language shift or switch to another language, integration of loan vocabulary to language change on the diachronic level (Plaza Pust 2005). In spoken languages, lexical material from another language is often borrowed as new techniques, inventions or items are borrowed from the other culture. Hence, German borrowed words such as Toaster and Computer from English and Espresso from Italian together with the items. English borrowed excessively from French
after the Norman Conquest in 1066 when French was the language of the court. Pork, mutton, veal or beef were borrowed during that period and are nowadays completely integrated into the English language as can be seen in their spelling (Moessner 2003). Sometimes, sounds may be borrowed as well. An example of this is the /!/ sound represented orthographically by <x> in Xhosa (a Bantu language) that was borrowed from the neighbouring Khoisan languages (e.g. uXolo = ‘excuse me’). Moreover, idioms or structures larger than one word may be borrowed. This can be seen in current German expressions such as am Ende des Tages = engl. ‘at the end of the day’, nicht wirklich = ‘not really’, ich erinnere das = ‘I remember this’ and the declining use of the definite article with the countries Iran and Iraq that used to have one in German.

Similar to the change of the borrowed material and its functions in the source language, material borrowed from spoken into sign languages is also changed formally and functionally. In terms of formal change, mouthings are no longer voiced as they would be as spoken language items and might become reduced as in TYPE 5 mouthings. Their function is obviously adapted to the visual-gestural modality.

Secondly, mouth gestures certainly seem to be sign language inherent and are only peripherally affected by language contact. This is shown by the fact that the frequency of mouth gestures – although not completely stable – does not change as dramatically as the other categories across age groups. Although a downward trend is visible in the data, I do not think that this kind of mouth action is ever going to disappear altogether, due to the importance of mouth gestures for the lexical and grammatical level of sign languages.

Thirdly and finally, the decrease in the category “no mouth action” entails an increase in the use of mouth actions in general. Thus, it can be inferred that younger signers use more mouth actions than older signers. Moreover, the great discrepancy between the general use of mouth actions in men and women in the oldest age group has almost been levelled in the youngest age groups. This also shows that signers nowadays tend to use more mouth actions than they used in older generations. This fact seems to be related to the increasing use of mouthings in both sexes and would thus ultimately be related to cross-modal language contact.

Before closing this chapter, I would like to address two alternative reasons for the developments of mouthings outlined in this section. They were first proposed in Mohr (2012).

The first proposal is that children might be copying their mothers which might lead to an increased use of English mouthings. In research on code-switching and code-blending in sign languages, the influence of the input to
the children from their mothers on their output has been investigated (e.g. Baker & van den Bogaerde 2008). It has been shown that, although the input certainly does play a role for the output of the children (and later on, adults), it is not the only factor that influences the deaf children’s language. In the NGT-Dutch study it was shown that deaf children produce less NGT/Dutch code-blended utterances than their mothers and a considerable amount of NGT. This shows that they emancipated themselves from the language use of their mothers which is also shown in the overall finding of the study, stating that three factors influence a child’s language use: the child’s ability in both languages, the input from the mothers and their own language choice. This language choice probably becomes more important as the children grow into adults which could then account for the results obtained in the current study on ISL. The fact that sign language is the natural language choice of Deaf communities despite its critical status at the level of traditional transmission (Plaza Pust 2005) emphasizes this fact. Moreover, this is also in line with the statistics. It is clearly visible that the use of mouthings increases (sometimes dramatically) from one generation to the next which could not be explained by a theory of simply copying the mothers. In that case, figures would have to stay the same for all age groups and they could not be different for men and women of the same age group. Men and women would be copying their mothers in the same way so this argument does not seem very plausible. Furthermore, the fact whether a mother or parent is deaf and uses sign language does not seem to play a role in this case either. Hence, signers from D/deaf families use the same amount of mouthings or even more than signers from hearing families. This is shown in table 5.3 below (the table is a modified version of Table 3 from Mohr 2012:196).

Table 5.3 Correlation of mouthings and language of family communication during childhood

<table>
<thead>
<tr>
<th>Language of communication at home</th>
<th>ISL</th>
<th>English</th>
<th>Home sign</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 30% mouthings</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>30–70% mouthings</td>
<td>2</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>&lt; 70% mouthings</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

As can be seen, there is no direct correlation between mouthings and the language of family communication during childhood. Thus, only one signer who uses more than 70% mouthings with his signs used English to
communicate with his family, a figure that should have been higher if the copying hypothesis held true. Altogether, the argument that children might copy their mothers and thus use more mouthings seems not to be applicable to the ISL data.

The second proposal is that signers might be more bilingual now than they used to be several years ago. This argument cannot as easily be discarded with as the last one. Actually, this claim could be in line with the finding that language contact might be the reason for the increasing use of mouthings. The enforced language contact due to oralist education policies might indeed have caused a higher degree of ISL-English bilingualism in signers. In Mohr (2012) I also discuss the possibility that the concept of mono- and bilingualism has to be reformulated for sign languages as even in a potentially monolingual sign situation involving only native signers, both the signed and the spoken language seem to be “on” (Emmorey et al. 2005). This is emphasized by findings from Grosjean (2008) who mentions that signers rarely find themselves towards the monolingual end (“monolingual” being defined the traditional way) of the language mode continuum.

Moreover, studies on deaf communities and their developments and structures (Woll & Ladd 2003) mention that the socializing patterns of middle-aged and young deaf people in Western societies have changed radically during the past 30 years. There has been a general shift from deaf clubs, traditionally one of the two cornerstones of deaf communities to more public settings which might ultimately lead to a change from an “oppositional community” to an “integrated” one. This greater integration of young Deaf people into the hearing community might indeed lead to them having a more considerable knowledge of the ambient spoken language or showing an increased degree of bilingualism. However, I think that this is not the only reason for the developments shown in the statistics. A higher degree of bilingualism in signers seems not to be the first and foremost reason for the increasing use of mouthings but rather an accompanying language contact phenomenon. Consequently, the main reason for the developments outlined so far seems to be the different education policies at the Cabra schools.

As a conclusion to this chapter it can be stated that the hypotheses set up in section 4.1 were all proven by the analysis of the corpus data: the use of mouth actions in ISL is influenced by a signer’s sex and women use more mouthings than men. Moreover, the use of mouth actions in ISL is influenced by a signer’s age and older signers use less mouthings than younger ones. The considerable differences between individual signers hint at the fact that mouthings entered ISL as foreign language, borrowed material. These differences become smaller in younger generations so that it can be inferred that
mouthing has become firmly integrated into ISL and that language change took place within the past 50–60 years.

These findings also confirm earlier claims that a) differences between male and female signing permeate the lexical level and extend to discourse or non-manual features (Leeson & Grehan 2004) and b) older signers use less mouthing than younger ones (Ó Baoill & Matthews 2000).