Chapter 2
The Linguistic Setup of Sign Languages – The Case of Irish Sign Language (ISL)

ISL is a primary sign language and the native language of the approximately 6,500 deaf people living in the Republic and Northern Ireland, although British Sign Language (BSL) is used frequently in the latter. ISL is genetically closely related to French Sign Language (LSF), although BSL has had a major impact on the language due to televised BSL programmes, the migration of deaf people to the UK and co-operations of Deaf organizations in Ireland and the UK (Leeson & Grehan 2004). The exact origin of ISL is unknown, as the grammar of the language remains undocumented prior to the establishment of deaf schools in Ireland, starting around 1814 (Matthews 1996).

Although the above reads like a short sketch of any other (spoken) language in the world that is more or less well documented and whose language family and linguistic typology have been analyzed, it is rather exceptional in the fields of sign linguistics and sign language typology. Actually, only a minority of the world’s (sign) languages has been documented so far and even fewer works have treated the typology of signed languages (Wilkinson 2009). The fact that Zeshan in 2008 still discusses the novelty of the field of sign language typology as well as possible methods, emphasizes the paucity of studies and knowledge about sign language typology. However, this is not surprising given that only a few sign languages have been documented so far and, even for those sign languages that have been studied, an imbalance towards Western sign languages persists. Most studies in sign linguistics focus on ASL and Western European sign languages. Other types, such as non-Western urban sign languages and village sign languages, have been rarely studied and only came to the attention of the sign linguistic community in recent works like Nyst (2007; 2012), Schwager and Zeshan (2008). Studies like these have revealed the falsity of some claims about the universality of certain linguistic features of signed languages. The use of space and spatial time lines that were believed to exist in all sign languages and have been proven not to, is only one example. A broader knowledge of the genealogy of signed languages (of which only little is known) or the different types of sign languages in the world might help to solve typological questions related to sign languages, which remain very controversial to date.
Central issues of sign language typology refer to two different domains: general linguistics and sign linguistics. Neither a sub-classification nor a typology of the “sign language family”, nor a typological classification of sign languages on morphological grounds as either isolating, fusional, agglutinating or polysynthetic has yet been achieved. Apparently, a curious mix of grammatical phenomena prevents a clear morphological categorization of signed languages into one of the established types of spoken languages. This clearly shows that more research on sign language grammar is necessary, even more so given that new insights into sign language typology will further linguists’ knowledge of linguistic structures in general.

Having experienced that most spoken language linguists are not acquainted with sign language structures, subsequent sections will provide an overview of the grammar of sign languages, tackling some of the issues in sign language typology. All sections especially focus on ISL. The first part of the chapter provides an introduction to the language: it concentrates on the sociolinguistic situation and the status of ISL in Ireland. A description of deaf education and its history in Ireland will also be provided, as it is crucial for the analysis of the data from the Signs of Ireland Corpus. In the second part, grammatical features that have been found for all sign language systems studied so far will be discussed. This outline includes a sketch of non-manual features in ISL, of which mouth actions are a part.

2.1. The Sociolinguistics of ISL

ISL, although Ireland’s second native language along with Irish, still has no official status in Irish legislation despite EU resolutions (e.g. 1998) and the Council of Europe Parliamentary Assembly (2003) (Leeson 2008). Just like other minority languages in Ireland, such as Gammon or Cant, spoken by the Irish Travellers, it has no legal status in the constitution, perhaps due to the fact that Ireland is not a traditionally multilingual country. Attempts at raising the official status of ISL as well as that of other sign languages are constantly being made but only very few of them are successful. To date, Sweden, South Africa and Brazil remain some of the few countries to have officially acknowledged their national sign languages as one of the official languages of the country (Reagan 2010).

As minority languages, sign languages around the world are subject to problems similar to spoken minority languages. Moreover, the fact that only 5% of all deaf children are born to deaf parents and thus acquire a sign language in a family environment instead of a school, adds to the array
of obstacles these languages have to overcome. Traditional transmission, or rather the lack thereof, is often mentioned as one of the main criteria that lead to language endangerment (e.g. Brenzinger 2007; Drossard 2009). Furthermore, almost all of the nine UNESCO criteria that have a major impact on language endangerment apply to sign languages and their environment. Plaza Pust (2005) mentions that in the case of deaf communities, language planning and language policies are particularly critical because the minority language and the majority language do not represent equal codes for deaf individuals.

Generally, there is no standard way by which the legal recognition of a sign language is realized. Thus, it could be acknowledged as one of the official languages of a country in the country’s constitution. Sometimes, sign languages have a special status in education, a fact that is apparent in the use of the national sign language in schools for the deaf. Hence, DGS or LBG² are used in most German deaf schools as the medium of instruction. Plaza Pust (2005) also mentions that deaf education in Europe is in a transitional stage characterized by a diversification of educational methods. This hints at the fact that to date, there is no consistency concerning the methods and especially the languages used in deaf education. While in many countries there are only a few schools with bilingual programmes for deaf children, such schools have been institutionalized in Scandinavia.

In Ireland, ISL is minimally present in the media through special ISL programmes such as “Hands On” on RTÉ One. However, there are quite a number of deaf organizations such as the Irish Deaf Society or the Irish Deaf Youth Association. Moreover, ISL can be studied at the Centre for Deaf Studies at Trinity College Dublin where different courses at undergraduate and postgraduate levels are available. These include courses such as ISL/English Interpreting, ISL teaching or Deaf Studies all of which are available to hearing and deaf students alike. Also, a project realizing the “neighbour method” proposed for endangered languages by Tsunoda (2006), e.g., is currently being carried out. The method suggests the establishment of settlements (villages, towns, cities) in which all members of a speech community live side by side and exclusively communicate in the endangered language. Hence, “Deaf Village Ireland” was opened in August 2012 in Cabra, Dublin. Several facilities as well as organizations can be found in the village, such as a sports centre, a chapel, offices for Deaf Sports Ireland, the Deaf Scouts, etc. To date, older Deaf people do not visit the village very often, as it is less conveniently located than Drumcondra, the part of Dublin that used to be the centre of Deaf activities (Gilchrist, pers. comm.). However, it is quite
popular with younger Deaf people, so it remains to be seen whether older people will accept the village as a new Deaf centre as well.

As in most other deaf societies, deaf people in Ireland usually grow up bilingual (English/ISL). Often, ISL is not a signer’s native language because s/he is born to hearing parents who do not know any ISL so that the child’s first language is English. Only later in life (in school, for example) do they learn ISL. There are only very few deaf societies in the world in which the situation is the other way around. An example of this is Kata Kolok, the sign language of a village community in Bali, Indonesia, where a high incidence of hereditary deafness has led to the whole village knowing the sign language and being bilingual. In this case, deaf people in Kata Kolok are monolingual only, so the hearing people have to know the sign language alongside their spoken languages (Schwager & Zeshan 2008).4

Linguistic variation is a prominent feature of ISL, however, this can mostly be observed along gender lines due to traditional segregation in schooling, as will be discussed in section 2.2. The most important thing to remember for the moment is that distinct male-female varieties existed in ISL which were similar to distinct varieties found in some spoken languages such as Bambara (a Manding language of the Niger-Congo phylum), for instance.5 Traces of these distinct varieties are still found in current signers’ vocabularies (Ó Baoill & Matthews 2000; Leeson & Grehan 2004), especially in women’s language use as the former male variety developed into standard ISL. Particularly, Le Master has investigated the differences between male and female ISL in numerous publications which focus mainly on the lexicon of ISL. Thus, according to Le Master (1990), there are related and unrelated sign groups in male and female signs. The related signs share certain formative features like handshapes or movement patterns, e.g., whereas the unrelated signs do not resemble each other in form. The terms “related” and “unrelated” signs usually refer to signs of different sign languages. Relation can thus be established on the basis of the formal properties of handshape, location and movement. Cognates are identical in all three features; related or similar signs overlap in two features and different signs are diverging in two or more features (Wilkinson 2009). These criteria are also applied when signs are compared on the basis of the modified Swadesh list for sign languages (Woodward 1978).6 With respect to ISL, Le Master also mentions that the female variety was less initialized than the male one, i.e. that in the female variety there were less signs that were formed with a handshape taken from the manual alphabet of this sign language and representing the first letter of the corresponding English word.7 Moreover, she mentions that the
varieties were mutually unintelligible and that men and women had to learn the variety of the opposite sex. This issue is rather controversial, however, as other researchers mention, the different varieties never hampered communication among deaf people themselves.

Today, male and female varieties cannot be distinguished anymore. The male variety developed into present day ISL which is learnt by men and women alike. Many women, however, still use distinct lexical signs (cf. chapter 4). Recent publications, such as Leeson and Grehan (2004) mention gender differences on other linguistic levels such as the discourse level, for example. They investigated the form of topic-comment structures in ISL as well as the use of certain simultaneous constructions which turned out to be used differently by men and women (Leeson & Grehan 2004:68). Ó Baoill and Matthews (2000:14) mention that the style of female signing is dependent on the interlocutor’s sex. Hence, women use a reduced signing space, the length or duration of signs is reduced and lexical choices differ from the ones made when communicating with a male signer. When signing in a mixed group, women tend to adjust their lexical choices to the male variety while men do not accommodate the female signs. Thus, gender differences have been found to exist in present day ISL and to permeate the lexical level.

There are also different registers of ISL, i.e. that a signer adjusts his language to different situations (Ó Baoill & Matthews 2000). The male variety is generally considered to be more formal and more standard by both sexes. This might be due to the fact that the former male variety developed into standard ISL, while it does in no way entail that male ISL signers use a more formal speech style in all situations of everyday life. Regional variation has not been reported yet and has also been claimed to be inexistent (Ó Baoill & Matthews 2000). However, more recent publications such as Leeson and Grehan (2004:39) mention that a) there might be a distinct Northern Irish variety of ISL which has however not been researched yet and b) regional variation might develop due to more and more deaf children being sent to partially deaf units at local schools instead of being sent to one of the deaf schools in Dublin. This has not been researched so far either.

In summary, ISL is a minority language that has not been acknowledged officially in the constitution, despite several attempts at promoting the language by national deaf organizations, for instance. Consequently, most deaf children in Ireland grow up bilingual and must have at least some knowledge of English. Sociolinguistic variation in ISL exists especially concerning gender, while situational variation is present, too, and regional variation between Northern Ireland and the Republic is assumed to be existent but has never been researched thus far.
2.2. The Educational System and Oralism

Formal deaf education in Ireland, as mentioned earlier, started at the beginning of the 19th century, with the establishment of the first schools (Matthews 1996). In 1814, Dr. Charles Orpen, a medical doctor, became aware of the lack of any educational institution for the deaf when he returned from England, where this kind of institution had just been founded in Birmingham. Starting with only one student whom he took from an orphanage in Dublin, he began to research and publish on the matter of deaf education, leading ultimately to the establishment of a school in the Smithfield Penitentiary, Dublin, in 1816. In the beginning, six to eight boys attended; this number rose to 16, of which the majority were boarders. The school moved several times until its headmaster became head of the Claremont school (established in 1819) which, due to its large dimensions, became known as the “Irish National Institution for the Deaf and Dumb”.

Several other schools were founded around the country, but many of them had to close after a few years due to falling numbers of students. A big problem in Catholic Ireland was the fact that Claremont was a Protestant co-educational school that taught its (mostly Catholic students) in the Protestant faith. Thus, in 1822, St. Mary’s School in Cork was established by the physician Dr. Kehoe. This took place after Reverend Thomas McNamara had founded the Catholic Committee, a committee established due to his fear for the souls of the Catholic deaf children. As a co-educational school, St. Mary’s had a total of 73 pupils until it closed down in 1846 due to lack of funding.

In 1845, Reverend Monsignor Yore established the first committee of the Catholic Institution for the Deaf, which subsequently succeeded in establishing St. Mary’s School for Deaf Girls in Cabra, Dublin, with the help of the Dominican sisters in Cabra. Two of the nuns received training in Caen in the spirit of Abbé de l’Epée using sign language in order to educate deaf children with a minimal amount of speech. In 1846, the first year of the school’s existence, 15 deaf girls were admitted (Figure 2.1 taken from Matthews 1996:649).

This, however, did not accommodate the need for a school for deaf boys, which was established, after long negotiations, in 1849 in Dublin. The school was called St. Joseph’s Prospect, Glasnevin, Dublin, and 35 boys were enrolled by 1851. However, the number of pupils increased rapidly, soon exceeding the number of pupils that could be accommodated on the grounds. In 1856, the Christian Brothers in Cabra took on the responsibility for the deaf school and St. Joseph’s School for Deaf Boys was established in Cabra, Dublin. To date, St. Joseph’s and St. Mary’s remain the only national...
schools dedicated to deaf education in Ireland (Figure 2.2 is taken from Matthews 1996:66).

The strict segregation of boys and girls, who were also discouraged from mixing socially outside school (Le Master & Dwyer 1991), led to the development of distinct male and female varieties of ISL described in section 2.1. The ISL variety of the opposite sex had to be learnt after graduation or when signers started dating signers of the opposite sex. As gender variation is still a feature of present day ISL, this segregation had a profound

Figure 2.1 St. Mary's School for Deaf Girls, Cabra

Figure 2.2 St. Joseph's School for Deaf Boys, Cabra
impact on the development of the language. Similar situations can also be found in other sign languages, such as LSQ, the sign language used in Québec.

A final factor worth mentioning in the context of deaf education in Ireland is oralism, which was introduced to Ireland in the 20th century. Due to the Milan Congress in 1880, sign language was banned from schools across Europe and replaced by a wave of oral teaching methods using only spoken languages as medium of instruction. Oralism came to Ireland comparatively late. It was introduced to the Protestant school around 1918, to St. Mary’s in 1946, and to St. Joseph’s in 1957. It is essential that this time difference of 10 years between the girls’ and the boys’ schools be kept in mind as it will be crucial for the later analysis of mouthings. Today, the schools’ current language policy states that teachers should communicate with the children in whatever language is most suitable to their needs, be it Irish Sign Language, Signed English or spoken English (D.E.S. Inspectors’ Report 2004 for St. Mary’s). Also, more and more children attend local, mainstream schools in partially deaf units as their parents refrain from sending them to a boarding school in Dublin or moving to the capital. This probably has a major impact on the language of these children, as they lack adult Deaf role models who competently use ISL. Instead, they might be more influenced by hearing adults and the English language.

As was shown here, many factors have influenced deaf education in Ireland since the 19th century. The most important ones are a strict segregation of deaf boys and girls at school which led to the development of distinct varieties of ISL, and the introduction of oralism to the two Dublin schools at different periods.

2.3. Structural Issues: The Use of Space

For communication, signed languages, as opposed to spoken languages, make use of the visual-gestural modality instead of the oral-aural modality. They especially use this different modality as well as space for their grammar in similar ways. Without a description of the use of space, it would be impossible to provide a full account of the grammar of a sign language (Keller 1998). In the following, some of the most important features linked to the visual-gestural modality and the use of space will be outlined.

Firstly, a few general issues should be mentioned. The most basic but also most important notion referring to the use of space in sign languages is that of the signing space. This is a particular space extending from the waist outwards...
and including the face and shoulders, in which all signs of a sign language have to be articulated (Ó Baoill & Matthews 2000). The signing space of ISL (taken from Ó Baoill & Matthews 2000:40) is shown in figure 2.3.

All linguistic information is expressed visually in this signing space. In order to ensure grammatical clarity, this space is sub-divided as morphemes are articulated at given loci in relation to the signer or from the signer’s perspective in pronominal reference, for example (Ó Baoill & Matthews 2000). Pronominal reference and verb agreement are discussed in more detail at the end of this section. Firstly and more generally, it should be mentioned that most lexical signs in Western sign languages are confined to the signing space. Its limits are dictated by ease of articulation and are only rarely exceeded.

The use of this sign space was claimed to be a universal feature of all signed languages in the world. The study of shared sign languages that are completely different from most European urban sign languages, however, has revealed that they make very different use of space. “Shared” sign languages (Nyst 2012) are found throughout the whole world and are usually confined to small speech communities, often in agricultural communities or fishing towns (Nonaka 2004). As opposed to the sign languages of the Western hemisphere, which are mostly minority languages spoken by the deaf population of a country, these languages are shared, i.e. they are used by hearing and deaf people alike. The signing space of these languages is much larger, some movements (like walking, for example) are acted out, and absolute spatial reference is used (Zeshan 2008).

Space is very important for all linguistic levels of sign languages. For instance, the location of a sign is a phonological parameter that can be
meaning distinguishing in minimal pairs. In the following, two phenomena related to the use of space in sign languages will be outlined: verb agreement and pronominal reference. Both are crucial for the investigation of the ISL data in chapters 5 and 6.

Traditionally, a tripartite classification of verbs is assumed for signed languages (Padden 1988). This distinction is based on Padden’s (1988) study of ASL syntax. According to this classification, which is based on the spatiomorphological properties of sign language verbs, there are plain verbs, spatial verbs and inflecting verbs. Applying this distinction to other sign languages and other data sets, terminology varies considerably depending on different authors. The category of inflecting verbs has been re-named “directional verbs” (Prillwitz 1985) or “agreement verbs” (Liddel & Johnson 1987), while spatial verbs were re-named as “spatial-locative verbs” (Liddel & Johnson 1987). The literature on ISL refers to two main categories of verbs only: morphologically unmarked and morphologically marked verbs (Ó Baoill & Matthews 2000). Other researchers have questioned a tripartite division of sign language verbs on morphological grounds, categorizing it as a semantic classification (Keller 1998; Meir 2002). Nevertheless, in order to give a full account of the sign linguistic literature, the traditional tripartite division is described briefly below.

Plain verbs are not very relevant when analyzing the use of space in signed languages. They are defined as having a fixed or constant place of articulation in space and do not take agreement for person, for instance. Examples of this type of verb are love or hate in ISL (Ó Baoill & Matthews 2000:124).

In contrast to plain verbs, morphologically marked verbs use spatial loci in order to realize inflection for person. These spatial loci have already been mentioned in the context of the use of space in general. Spatial loci may either refer to loci associated with locative arguments (locative agreement) or to loci linked to certain referents of the discourse (subject and object agreement) (de Quadros & Quer 2008). The morphological realization of agreement is the movement between two points associated with the arguments of certain verbs (de Quadros & Quer 2008). The differentiation that is generally made between agreement verbs and spatial verbs refers to the different kinds of inflection (either inflecting for location or for certain referents) that are shown. However, this distinction is questioned by certain researchers (Keller 1998). In his study on the use of space in DGS, Keller found that there is no basic (morphological) difference between the referential loci of spatial verbs and the referential loci of agreement verbs. This claim is in line with the literature on ISL arguing that the verb category is subdivided into two different classes only.
The movement of morphologically marked verbs may express inflection for person, objects, location and manner in ISL (Ó Baoill & Matthews 2000). Person and location agreement is expressed by movement between two pre-established loci in the signing space. Object inflection may also be realized in this way, or by the use of a handling classifier. Manner inflections are usually expressed by a modification of the movement patterns of the citation form of a sign. WALKING-IN-A-STRAINED-MANNER, e.g., would require a slower movement pattern than simply WALKING. The literature on ISL has so far subsumed both categories of verb marking (spatial and agreement) under the heading of “deictic verbs” (Ó Baoill & Matthews 2000:126).

A typical example of an agreement verb in sign languages is the ditransitive verb to give. It also exemplifies the workings of person agreement in sign languages very well. A picture of the locations of singular person agreement for the ISL verb GIVE can be seen below (figure adapted from Prillwitz 1985).

![Figure 2.4 Locations of singular person agreement in the signing space](image-url)
As can be seen in the picture above, the first person singular locus (I/me) is in the bottom circle of the picture. The second person singular locus (addressed person) is right in front of the signer. A third person singular locus (non-addressed person) might either be located to a signer’s left or right. These locations are approximate and by no means absolute, especially referring to non-addressed participants. These might be located at any point that is not directly opposite the signer, which creates an ultimately infinite choice of locations for third person loci, a fact that has led to huge controversies between different sign linguists. This controversy is elaborated on in more detail in section 6.1.4.

Along with these conventionalized locations of personal pronouns in the signing space, the context of an utterance often determines the path of the movement of a verb. Sandler and Lillo-Martin (2006:479, f.) provide a good example of this from ASL:

[...] Once a referent (say, Kim) has been associated with a location in space (say, on the right), then this pronoun [locus] will be used when a pronoun picks out a referent – in this case, by pointing towards the location associated with Kim on the right. Similarly, agreeing verbs taking Kim as an argument will move with respect to this location.

An interesting case is verbs that inflect for person, except for the first person singular as an object. This leads Ó Baoill and Matthews (2000) to call them “restricted verbs”. Examples of this verb type are ASK and TELL. ASK in two different forms is depicted below (taken from Ó Baoill & Matthews 2000:135, f.).
As can be seen, in the second sentence the verb does not inflect for the 1SG object but expresses this periphrastically by using an index (me). This is contrary to the first sentence in which the 2SG object is inflected on the verb by using the 2SG locus as the end point of the verb.

Ó Baoill and Matthews (2000) mention another interesting phenomenon in the context of morphologically marked verbs, namely items that would be considered predicative adjectives in English. They may function as predicates in ISL which is (similar to other sign languages) a copula-less language. They also seem to belong to the lexical class of verbs, however, this issue will be treated in detail in section 6.2. **RIGHT** and **WRONG** are examples of verbs that can inflect for person (Ó Baoill & Matthews 2000:138).

*Figure 2.6  Person inflections in ISL*
This phenomenon seems to be restricted to certain signs of this kind as sick in constructions like YOU (PRO₂) SICK cannot inflect for person (Ó Baoill & Matthews 2000:126).

Morphologically marked verbs may also inflect for a combination of person and number. This can be seen in the example of the ISL verb MOCK which would be reduplicated with a reversed direction of movement in order to express ‘They mock me’. Below, the citation form of the sign MOCK is shown (Ó Baoill & Matthews 2000:128).

![Figure 2.7 The ISL sign MOCK](image)

Finally, a typical example of a verb of motion should be mentioned. This is the verb FLY shown below (Ó Baoill & Matthews 2000:145).

![Figure 2.8 The ISL sign FLY](image)
According to the distinction set up by Padden (1988) and made by many other researchers, this should be a completely different type of verb as compared to agreement verbs like give. However, as previously mentioned, this distinction is not so much a morphological as a semantic one. While agreement verbs usually denote transfer in space, spatial verbs denote motion in space (Aronoff et al. 2005). In line with Ó Baoill and Matthews’ (2000) account of the verb class in ISL, Padden’s distinction is not considered applicable.

2.4. Structural Issues: Iconicity

Iconicity (generally referring either to the reflection of the extra-linguistic world in linguistic structures or the influence of human cognition on language) in sign languages has been a rather controversial topic ever since the beginnings of signed language research in the 1960s. The development of the formal linguistics framework at the time and during later decades, complicated research in the domain of motivatedness of signs considerably. Formal linguistic theories denied a link between language generation and cognition or extra-linguistic reality. Consequently, “proper” linguistic structures had to be arbitrary, which had already been a point in linguistics since its formulation in Saussure’s lectures at the beginning of the 20th century (Saussure 1989). The issue of arbitrariness has been taken up very readily for theories of linguistic universals (e.g. Hockett 1960) and the like. However, the communication systems of the deaf around the world show a greater or more obvious amount of iconicity, especially on the lexical level, than spoken languages. It is thus not surprising that most studies on iconicity in sign languages tried to explain it away: Frishberg (1976) observed that iconicity diminishes in signs over time and Bellugi and Siple (1975) argued that it does not play a role for memorizing signs, as did Poizner et al. (1981), while Thompson et al. (2006) similarly showed that it is not decisive in “tip of the finger phenomena”.

Recently, the importance of iconicity for sign linguistic systems has been emphasized. As iconicity was rediscovered as a crucial concept in functional approaches to linguistics, many researchers focused on iconicity in sign languages (Wilcox & Wilcox 1995, Pizzuto & Volterra 2000, Taub 2001, Pietrandrea 2002). Within the framework of cognitive linguistics or cognitive grammar as developed by Langacker (1991), Wilcox (2004) introduced the concept of cognitive iconicity as a special case of iconic motivation. He proposes that “the phonological and semantic poles of a symbolic structure reside in the same region of conceptual space”. Other researchers have
argued that the linguistic principle of arbitrariness has to be modified for sign languages and their different modality (Kutscher 2010), introducing new categories to the traditional semiotic model by Peirce, for instance. Van der Kooij (2002), Brentari (2007), Wilbur (2010) and Brentari (2012) have also stressed the importance of iconicity in sign phonology. For mouth actions in sign languages it is a rather important phenomenon, as will be discussed in relation to echo phonology in 3.2.2 and mouth gestures as ideophones in 6.2.4.

Further, it should be mentioned that mainly lexical iconicity was criticized and discussed controversially. Diagrammatical iconicity that is also observed in spoken language structures such as serial verb constructions, e.g. (cf. also Nanny & Fischer 1999), were not picked up as a topic in the controversy. The feature of lexical iconicity contributes in a unique way to similarities between sign languages around the world, resulting in higher mutual intelligibility between all languages of a supposed sign language family (Guerra Curie et al. 2002; Russo 2005). Lexical similarity is higher in sign languages than in spoken languages (Wilkinson 2009) which is due to a “shared symbolism” after Guerra Curie et al. (2002). Many studies have investigated this issue, hence Kyle and Woll (1985) compared approximately 250 lexical items from 15 sign languages and found a lexical overlap of 35–40%. It is now an undisputable fact that sign languages exploit iconicity as extremely productive constructions since the visual modality is especially well suited for this.

It should be mentioned, however, that despite the view expressed by some researchers in the field (Sandler & Lillo-Martin 2006), iconicity is not self-evident but interpreted on the basis of the language user’s perception of the construal between a sign and its referent. This means that signs are by no means transparent and thus easily understood by people outside the speech community. Supporting this statement, Adam et al. (2007) conducted a study for which signers of different nationalities had to judge the iconicity of signs. They report that signers perceived their own signs to be more iconic than the foreign signs. In Mohr (2007) I conducted a study on the transparency of DGS signs. In a sub-study, another test with native speakers of DGS was conducted in order to determine the degree of iconicity and transparency of ASL signs. The foreign language signs were not perceived as iconic and were not transparent.

From the results obtained in the studies described above, it has become clear that despite the high degree of lexical iconicity that can be observed in all sign languages around the world, this phenomenon is strongly culturally determined and does by no means lead to completely identical sign languages.
The choice of a sign's iconic feature is arbitrary which adds to the arbitrary face of the sign: Wilkinson (2009) also states that arbitrariness and iconicity are not mutually exclusive but are both realized in a sign. This mechanism might be compared to occurrences of onomatopoeia in spoken languages that are language and culture specific, although all are iconic in their own way.

Naturally, the lexicon of ISL also contains items that can be perceived as being iconic, such as drink, telephone or key. The sign key is depicted below (taken from Ó Baoill & Matthews 2000:145).

Apart from iconicity on the lexical level, iconic constructions can be found in morphosyntax. Having outlined the mechanisms of verb marking in section 2.3, another phenomenon shall be mentioned in the context of iconicity. Besides inflecting for person (subject), ditransitive verbs like give also show object agreement. Thus, the picture below shows the ISL sentence \( \text{PRO}_1\text{-GIVE-CYLINDRICAL-OBJECT (glass)-PRO}_2 \) meaning ‘I give a glass to you’ (taken from Ó Baoill & Matthews 2000:127).

In the above sentence, a classifier handshape is used. In this case, it is the classifier for cylindrical objects. If the signer gave another object, like a piece of paper, to the interlocutor, the classifier for a flat, thin object would be used. The type of handling classifier which is relevant for examples such as figure 2.10 represents the shape of a hand or any other object handling or gripping the referent. The iconic character of the classifier is clearly evident in examples like these. Classifier constructions in general, as well as in the context of
iconicity, are a rather controversial topic in sign linguistics. In the early days of sign linguistics they were considered to be “mimetic” and “pantomime” (e.g. Klima & Bellugi 1979) and hence rather neglected by researchers in the field. Consequently, they were only accredited very late in the literature. The first systematic analysis of their properties (in ASL) was conducted by Supalla (1982; 1986). His original categorization mentioned Size and Shape Specifiers (SASSes) and semantic classifiers which are sometimes referred to as entity classifiers for ASL (Sandler & Lillo-Martin 2006). A third type of classifier has been introduced, namely handling classifiers (cf. Figure 2.10). However, other categorizations of classifiers exist. Hence, Meir (2001) postulates theme and instrumental classifiers.

Generally, classifiers in sign languages are “complex predicates in which movement, handshape, and location are meaningful elements” (Brentari 2012). This is in line with Ó Baoill and Matthews (2000), who mention that classifiers in ISL are largely used predicatively while they are mostly used in arguments in spoken languages. Despite the fact that classifiers are attested for all European and North American (urban) sign languages and show striking similarities concerning their form, function and use, there are cross-linguistic differences with respect to the inventory of classifiers. For ISL, Ó Baoill and Matthews (2000) mention that classifiers can be subdivided into two major categories, namely classifiers for animate and inanimate entities.

Benedicto and Brentari (2004) and Brentari (2012) make another interesting claim about the iconicity of classifier constructions. Referring to Engberg-Pedersen’s four-way distinction of classifiers, i.e. whole entity, surface, limb/body part, handling, they found that only limb/body part and handling classifiers can use orientation in a morphological way (changing the orientation of a handling classifier is grammatical while changing it in a surface classifier is not). An even distribution of the expression of orientation across classifier types would be more iconic according to them (Brentari 2012:44) but grammar functions as a constraining factor in this case.

After this short outline of iconicity in sign languages, we will now turn to simultaneous constructions. These are described briefly in the following section.

2.5. Structural Issues: Simultaneity

In spoken languages, most linguistic material is ordered sequentially, i.e. morphemes are put in strings in order to convey meaning, phonemes form strings to form morphemes. The only areas in spoken languages in which
information is ordered simultaneously are intonation and prosody. Here, the
stress of a word, voice pitch or different intonational contours are uttered
simultaneously with a syllable, a word or a sentence. In sign languages,
unique simultaneous constructions can be observed, due to the different
modality they use. Sign phonology largely operates simultaneously, which is
represented in several different phonological models (e.g. Stokoe 1960; van
der Hulst 1993; Brentari 1998). Moreover, sign language morphology can
be analyzed as using simultaneous constructions (e.g. Klima & Bellugi 1979;
Zwitserlood 2003; Schwager 2004; A runoff et al. 2005; Schuit 2007). Finally,
the use of non-manual features often results in simultaneous constructions.
As this phenomenon is discussed in detail in chapter 3, I will focus on a few
examples of simultaneous phonological and morphological structures here.

Stokoe (1960) was the first to acknowledge that the signs of ASL are not
holistic entities but rather consist of a relatively small number of meaning-
less units that can be combined to form meaningful signs. In his cheremic
model, he showed that the features of handshape, location and movement are
meaning-distinguishing and minimal pairs can be found. Besides these three
parameters, two more features are now usually included in the list of meaning-
distinguishing features in sign languages. Those are non-manual features and
hand/palm orientation. As the sub-lexical structure of non-manuals has not
been worked out sufficiently in any sign phonological model (Brentari 2012)
and their uses and functions are discussed at length in chapter 3, they are not
outlined here. The inclusion of orientation as an independent parameter
in sign phonology was proposed by Battison (1978). It remains controver-
sial as there are only very few minimal pairs distinguished by orientation
which is why several phonological models include it as a derivable feature
(cf. e.g. Crasborn & van der Kooij 1997; Sandler & Lillo-Martin 2006;
Brentari 2012). All distinguishing features, i.e. handshape, location, move-
ment, orientation (and non-manual features) are combined simultaneously
in order to form a sign. Thus, the hand has a certain handshape which has
a certain orientation. The hand is moved from a certain location to another
one, while the whole action is accompanied by certain non-manual features
in most cases.

After the short outline of simultaneous processes in sign phonology, I will
now turn to simultaneous morphology in sign languages. Several issues of
simultaneous or non-concatenative morphology were tackled in the previous
section already. Hence, it was shown that verbs in ISL can inflect for person,
object, location and manner. This agreement is usually realized as a simul-
taneous morphological process which results in polycomponential signs.
These constructions present a serious difficulty with respect to the linguistic
description of the items. Phonology and morphology are not easily distinguished in these forms, just as morpheme boundaries cannot easily be identified. This is perhaps one of the reasons why sign morphology remains an under-researched topic.

An issue to be mentioned in the context of non-concatenative morphology in sign languages is aktionsart. This will be highly important for the distinction of different word classes in ISL in chapter 6. As a simultaneous feature, in ASL certain aktionsart morphology changes the straight movement path of a verb to a circular movement (Klima & Bellugi 1979; Sandler 2003). In ISL, aktionsart marking is usually indicated sequentially by movement repetition, role-shifting, the completion marker, the accomplishment marker, the about-to marker or the left to right time line. Non-manual features constitute the only exception (Ó Baoill & Matthews 2000).

It also seems noteworthy that the simultaneous affixation of an “aspect morpheme” or rather the general existence of simultaneous morphology is not restricted to sign languages only. Several phenomena found in tone languages are consequently analyzed as suprasegmental affixes that e.g. have aspectual value (Gilley 2004). Two examples (taken from Gilley 2004:5) from an African tonal language of the Nilotic branch of the Nilo-Saharan language phylum are given in (1) and (2).

1. \(\text{ānéy ùcwōtt} \kī \text{dhánh} \) [Shilluk]
   Aney NE:IMP:BEN-call IND person
   ‘Someone is calling a person for Aney.’

2. \(\text{ānéy ùc’wōtt} \kī \text{dhánh} \) [Shilluk]
   Aney NE:PF:BEN-call IND person
   ‘Someone called a person for Aney.’

As can be seen, the tone change from a low level tone to a high level tone causes a change from imperfective to perfective aspect. The morphological process that is used in this case is apparently also a simultaneous one.

Before concluding this section, I want to turn to a very unique morphological feature of sign languages that is due to the different modality as compared to spoken languages. In ISL, simultaneous compounds can be formed from two free morphemes. These formations are most comparable to blends in spoken languages in which two free morphemes “blend” into a new monomorphemic word from which neither the first nor the second morpheme is distinguishable. An example of this is the English word smog, formed from smoke and fog. In ISL, the combination of the signs TELEPHONE
The Linguistic Setup of Sign Languages

(with the normal place of articulation next to the signer's head) and typing (which is normally a double-handed sign) results in the compound MINICOM. The sign is shown below (taken from Ó Baoill & Matthews 2000:245).

Figure 2.11 The ISL sign MINICOM

The difference between formations like these and blends from spoken languages is probably that both free morphemes are still distinguishable in the sign whereas they are not in a blend. As is apparent, the possibility of a formation like this derives from the use of the visual-gestural modality.

2.6. Structural issues: Non-manual Features

All sign languages of the world use non-manual features beside purely manual signs. Thus, ISL also uses certain non-manual features on different linguistic levels. This section will provide a brief overview of the non-manual features used in ISL. While mouth actions form an integral part of non-manuals, they are discussed in detail in chapters 5 and 6. Only a few examples will be mentioned in the current section.
The non-manual features mentioned by Ó Baoill and Matthews (2000) are: eyebrow movement, movement of the eyes, mouth patterns, blowing of the cheeks, tilting of the head and shoulder movements. They mention that non-manuals are especially used in order to express syntactic relations or lexical distinctions. Moreover, certain morphological functions such as the marking of the comparative and superlative by adding certain facial expressions to the manual sign are noted. An example of a comparative can be seen in the example of COLD - COLDER in figure 2.12 (taken from Ó Baoill & Matthews 2000:179).

![Figure 2.12 The ISL sign COLD and COLDER](image)

On the phonological level, non-manual features serve to distinguish minimal pairs. Thus, a change in facial expression distinguishes the signs DISBELIEF/WARY/UNSURE on the one hand and FALSE on the other (Ó Baoill & Matthews 2000:50).

![Figure 2.13 The ISL signs DISBELIEF/WARY/UNSURE and FALSE](image)
Besides examples such as those mentioned above, a sign may acquire a different meaning by adding different non-manual features (especially facial expressions). In this case, the non-manual feature is not an inherent formal feature of the sign itself but rather a pragmatic means comparable to the use of suprasegmentals and especially intonation in spoken languages. An example of this can be seen below. The pictures show the manual sign who accompanied by different non-manual features and thus meaning ‘Who?’, ‘Who!’ and ‘You are not who I think you are, are you!’ (taken from Ó Baoill & Matthews 2000:174). The last sign is also accompanied by a side-to-side headshake.

*Figure 2.14* The ISL signs for 'Who?', 'Who!' and 'You are not who I think you are!'
Moreover, non-manuals may also serve to fulfill adverbial function when combined with verbs. Ó Baoill and Matthews (2000:180) mention five manners or degrees of actions that are often expressed in ISL:

1. Degree of difficulty
2. (Objects being handled are) Thin and delicate
3. (Action performed) With clumsiness
4. Relaxed manner
5. Non-existence of a previous existing entity

An example of “degree of difficulty”, (Ó Baoill and Matthews 2000:180) can be seen in figure 2.15 below.

In this case, the non-manual marker accompanying ME-MOVE-THROUGH-THEM expresses “degree of difficulty”. This emphasizes the fact that non-manual markers which look very similar (e.g. furrowed brows seen in several
of the previous pictures), operate on different linguistic levels, serve different linguistic functions and modify meanings in different ways.

Finally, turning to the syntactic level, non-manual features are important for question formation, topic-comment structures and conditional sentences in ISL. Facial expression is often the only distinguishing feature between declarative sentences, questions and negations. More precisely, the non-manual features accompanying WH-questions in ISL are a forward tilt of the head and a slight downward movement, a lowering of the eyebrows and a narrowing of the eyes (Ó Baoill & Matthews 2000). This can be seen in the pictures of who, when and where below (taken from Ó Baoill & Matthews 2000:182).

This is in line with findings from other sign languages and indeed substantiates Pfau and Quer’s (2010) claim that lowered eyebrows usually accompany WH-constructions in the world’s sign languages. The only difference is that Pfau and Quer mention a backward head tilt accompanying most WH-constructions while in ISL a forward head tilt is used.

Yes/no questions are accompanied by raised eyebrows, wide eyes and a forward movement of the head (Ó Baoill & Matthews 2000) which reflects cross-linguistic tendencies for this sentence structure mentioned by Pfau and Quer (2010). In ISL, too, the word order of a declarative sentence is kept, the non-manual features are thus the only indication of a question.

As far as negation is concerned, ISL forms part of the group of sign languages that might use a non-manual feature without using a manual negation particle in order to negate a sentence. In ISL, a side-to-side headshake is used in order to negate a sentence. However, negation particles such as no, never, nothing, etc. may be used as well. Thus, the sentence 'I do not understand' could be expressed in two different ways displayed in the examples below (both taken from Ó Baoill & Matthews 2000:186).
The signer in figure 2.17 shows the negation of the sign UNDERSTAND including a negative particle (NOT) while the signer in figure 2.18 uses the side-to-side headshake only.

Topic-comment structures are very common in present-day ISL which is in line with the claim that sign languages are topic-prominent languages, such as Chinese, for example (cf. chapter 3.2.2). While there is no universally accepted definition of the term “topic”, most definitions mention topics as the “sentence subject” and comments as the “predicate” (Bußmann 2002). One of the tests that can be applied in order to identify the topic of a sentence is asking the question “What about X?” (Gundel 1977). A topic provides the answer to this question.

The main non-manual features that are used in order to mark these constructions in ISL are a slight backward tilt of the head, raised eyebrows
accompanying the topic and a slight headnod afterwards (Ó Baoill & Matthews 2000). An example of a topic-comment structure can be seen in the sentence ‘That camera is mine’ below (taken from Ó Baoill & Matthews 2000:188).

![Image of sign language gesture: camera index mine]

Figure 2.19 CAMERCA INDEX MINE - 'That camera is mine'

The transition from lowered to relaxed eyebrows between the topic (camera) and the comment (mine) is obvious in this example. Leeson and Grehan (2004) empirically researched topic-comment constructions in ISL and found that female signers often omit the tilting of the head used to mark a topic. This shows that gender differences permeate the lexical level in ISL. Moreover, they found that some signers use eye blinks to mark the offset of a topic. This, however, seems not to be obligatory.

Finally, conditional clauses are marked in a way similar to that of topic comment constructions. Ó Baoill and Matthews (2000) mention a raising of the head, raised eyebrows and wide open eyes as the non-manual features used to mark conditionals. Moreover, they observed that in case a negative ‘if’ is involved or some doubt is attached to the conditional, the sentence is usually accompanied by a squint. This is similar to the findings of Dachkovsky and Sandler (2007) for Israeli Sign Language (IsSL) discussed in chapter 3.2.2.

As was shown in this section, non-manual features are commonly used in ISL for different linguistic functions. On the phonological level, for instance, they distinguish minimal pairs. Further, they are also used for some morphological and various syntactical functions. A few differences between male and female non-manuals, such as the omission of the head-tilt as a topic marker in women, were also mentioned here. The use of mouth actions was rarely mentioned as it has not been systematically researched so far. Thus, chapters 5 and 6 will provide some insight into the system of mouth actions in ISL. The analysis in chapter 5 will especially shed some light on gender differences concerning non-manuals.