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Contents

Sex differences in Irish Sign Language

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1. Introduction

It is likely that some form of sex difference exists in every language (Graddol—Swann 1989: 42). It is unlikely that the sex difference would be so great as to constitute separate languages. The only widely reported case in which men and women were said to use wholly different languages was the Carib language (Rochefort in Jespersen 1922: 238). Yet upon an examination of the original data, Otto Jespersen observed these differences in only about one-tenth of the data collected (Jespersen 1922: 238). Because of this, and because Jespersen found plurality to be marked in identical ways by men and women he concluded that these differences did not constitute separate languages.

Until recently there had been no accounts of sex differences in language as extreme or more extreme than those found in the Carib language (cf. Bodine 1975), including reports of male/female usage patterns in Yana (Sapir 1929), Koasati (Haas 1944), and elsewhere (Furfey 1944, Trudgill 1974). Most recent publications have reported stylistic sex differences in language (e.g., Brown 1980, Coates 1988, Fishman 1978, Gal 1978, Goodwin 1980, Goodwin—Goodwin 1987, Harding 1975, Keenan 1974, Maltz—Borker 1982, Tannen 1990, West—Zimmerman 1983) rather than the kinds of differences that may suggest different languages used by women and men.

There is one language situation, however, in which the most striking difference between men and women is their nearly mutually-exclusive vocabularies. In one segment of the Dublin deaf community in the Republic of Ireland, the vocabularies used by men and women were so different that they impaired communication on the most mundane of topics. For example, men and women had completely different signs for simple everyday terms such as 'cat', 'Monday', 'night', 'red', 'carry', and so on. (See Figure 1.) These gender differences were not associated with ritual or specialized uses of language as, for example, is found among Australian aboriginal women in mourning (Kendon 1988). Nor were they associated with gender-specific semantic domains as found in the Kaluli situation (Scheffelin 1987) or as described by Lakoff (1975) for the American situation. Nor were the differences limited to only a small percentage of vocabulary items as in the Carib language (Jespersen 1922). Instead, one segment of the Dublin deaf community had largely different signs for the majority of items examined (LeMaster 1990). Similar to the Carib language situation, however, men and women do not appear to use wholly separate languages. Instead, they seem to rely on the same grammar. Taking the case of plurality for

instance, men and women may employ different phonological forms in some cases, but the way in which plurality is added appears to be identical for both sexes.

This paper provides an overview of this unusual language situation. The first section provides a brief explanation of reasons for the emergence of these sign differences. The second section describes the linguistic differences between men and women's signs, and provides a brief analysis of their distribution across semantic domains. The last part of the paper attempts to describe what these differences mean to the community itself. Following Gal's (1991) heuristic, this section explores how men and women's ways of speaking are viewed by the community; how practices reproduce gender images and relations; and how standard practices are challenged and resisted within the community.

2. Emergence of separate male and female vocabularies

Understanding how the vocabularies emerged requires an historical understanding of language and other policies at the residential schools for the deaf in Dublin, Ireland. From 1846 until recently, regardless of religious background, nearly all deaf children from throughout the Republic of Ireland and many deaf Catholic children from Northern Ireland were educated in sign language at two Catholic-run schools in the Cabra section of Dublin. These schools were known colloquially as "The Cabra Schools". Saint Joseph's School for Deaf Boys was administered by Christian Brothers; Saint Mary's School for Deaf Girls was run by Dominican Sisters. Because the majority of deaf children were born to non-deaf parents the centralized schools became the primary vehicles for deaf socialization, furthering the opportunity for standardized language socialization.[1] Standardization of language, however, occurred in sex-segregated schools leading to the acquisition of very different vocabularies by girls and boys.

Exactly how the two schools developed separate and distinct vocabularies is not entirely clear. However, some probable factors are known through extensive ethnographic and linguistic research conducted in the community in the 1980s (LeMaster 1990: 53–90). First, although each school began using the same corpus of pedagogical signs, it is possible that establishing the boys' school approximately ten years after the girls' school could have contributed to the development of different vocabularies. The original corpus of pedagogical signs was taken from a deaf school in France by Dominican Sisters, who recorded them in a hand-made dictionary. Upon their return to Ireland a priest modified many of the signs to better accommodate the morphology of English. The Dominican Sisters claim to have feminized some of the signs for use with the girls, but did not record these changes in the dictionary. When the boys' school

opened, the Dominican Sisters shared the hand-made dictionary with the Christian Brothers. This is the corpus of signs that both schools began with. But, since the girls' school had been operating for ten years, it is probable that their local signs had already begun to change from those found in the hand-made dictionary.

A second probable reason that two distinct vocabularies emerged from these schools is that there was very little interaction between the students or faculty. The schools were within walking distance from each other, but not within sight. Because they were residential schools, the boys and girls had very little access to each other. Part of the explanation for this lies in the fact that the Dominican Sisters were sequestered until the 1960s, and could not leave the grounds of the convent and school without special dispensation from the Church. Another partial explanation may be that the two administrative orders, the Dominican Sisters and Christian Brothers, had very different philosophies about education.[2] The Dominican Sisters typically were charged with educating the elite populations in society, whereas the Christian Brothers were responsible for educating the masses. Once the schools were established, the two orders may have felt little reason to have their schools interact in a formal way.

The only frequent visitor to both schools were hearing priests. Apparently only some of the priests knew sign language, and it was typically the male form of signing. If a priest did not know sign language, the hearing teachers would have interpreted for him as they did for any non-signing visitor who entered their campus. It is unclear, however, what the Dominican Sisters would have done if the priests were able to sign. If the priests signed, they would have used male signs. Presumably in these cases the sisters would have interpreted the male signs into female signs for the girls' benefit.

A third possible explanation for the emergence of sex-marked signs is that the children had very little opportunity to socialize outside of the school setting. Because of financial limitations, the children typically only went home to visit their families during the summers. It is likely that the children saw each other on their trips home from school, but it appears that this exposure was insufficient to ensure mutual intelligibility of the signs upon graduation from the schools.

Some may wonder whether deaf families would have increased the opportunity for children to learn the signs of the opposite sex. We know from residential school experiences in other countries that deaf children who are non-native signers often learn sign language from other deaf children who are native signers.[3] Yet there were so few deaf parents with deaf children that it is unclear what effect this might have had on the cross-gender transmission of signs in this case. During my research in the 1980s, I had identified only one family with deaf children in which the mother and father learned the gendered signs at school. However the "children" in this family were already adults at the time of my research. As adults, the children already followed community conventions regarding appropriate use of male and female signs by age and gender. Therefore

it was not possible during the time of my research to determine the adult children's early cross-sign knowledge or the influence these children may have had on other children when they had attended school. Another factor affecting their language use concerns the modality of language they used in school. As was the convention for all deaf children attending the Dublin schools during their school years, these deaf children were educated orally. They were educated orally even though their parents were not oral and only signed, and even though the whole family used fluent Irish Sign Language in their communications with each other.

A fourth consideration of how these signs emerged lies with the contact between the borrowed French pedagogical signs and the indigenous Irish Sign Language.[4] Each of the schools undoubtedly integrated these two languages in different ways, since the language users of the schools had little contact with each other.

In short, the Cabra schools functioned as though they were separate islands. Although people began with the same language corpus, they were left to develop them independently from each other. The unusual aspect of this situation is that males and females of this population were separated at an early age and consequently grew up signing in very different ways. Once they graduated from school, deaf men and women typically dated and married each other. However, they initially had to find a way to deal with distinctively different sign vocabularies which they did not understand. The next section briefly describes the differences between these vocabularies.

3. Differences between male and female signs

During fieldwork conducted in the late 1980s, community members graciously allowed me to videotape their male and female signs. In the initial taping session, I asked the men and women to show me signs that clearly differed. I took the signs in the original taping session and expanded the semantic domains represented there to include signs that were not provided in the initial taping session. I also expanded the list to include signs in other semantic domains. I wanted to see whether the sign differences could be limited to particular semantic domains or particular items within semantic domains.[5] I call this list the "semantic domain list". The list contained 153 words.

Following the format shown to me by community members themselves in the first taping session, I elicited the 153 words on my semantic domain list in subsequent sessions. In the sessions I first finger spelled each word using the Irish sign alphabet, then asked deaf women to provide the female sign and deaf men to provide the male sign. The analyses presented in this paper are based on the signs provided by eight men and eight women.[6]

Of the 153 words on the list, there were distinct male and female signs for 106 of them. Twenty of the words produced variations that could not be attributed to gender.[7] Twenty-seven of the words on the list elicited signs that were identical for both men and women. See Table 1 for a summary of these findings. Appendix 1 provides a listing of the glosses for signs that elicited this distribution of sign variation.

Table 1. Total variation found in the semantic domain word list

% same signs	27 signs (17%)
% different signs	106 signs (69%)
% non-sex variation	20 signs (13%)

Of the 106 signs that were different, a qualitative difference was noticed. This noticeable qualitative difference was analyzed by looking at the "relatedness" of sign forms. The signs that shared one or more of the sub-lexical parameters, point of articulation (PA), hand configuration (HC), or movement (MOV), were categorized as "related signs". An example of related signs would be the male and female signs for EASTER. These two signs share a hand configuration, but have different points of articulation and movements, as illustrated in Figure 1.

male sign EASTER

	PA	HC	MOV
MALE	∅	ED⊥E<⊥	ω • >

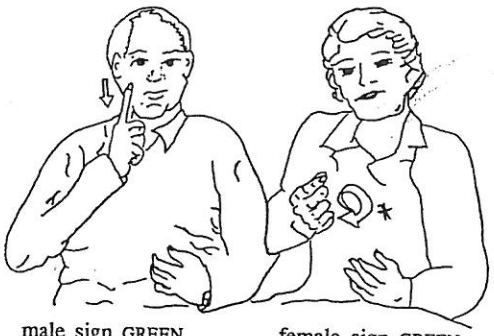
female sign EASTER

	PA	HC	MOV
FEMALE	*	E>⊥ED<	e [x] ⊥ <

(Appendix 2 provides a description of the symbols used to represent the signs illustrated in this paper.)

Figure 1.

Signs that did not share any of the sub-lexical sign parameters, PA, HC, or MOV, were categorized as "unrelated signs". For example, the male and female signs for the English gloss GREEN are unrelated in form, as Figure 2 clearly demonstrates.



male sign GREEN

	PA	HC	MOV
MALE	,3	1< ∧	x v

female sign GREEN

	PA	HC	MOV
FEMALE	∅	G'<⊥	No•

Figure 2

Signs that shared all three features (yet did not vary by palm orientation) were considered to be the "same sign".

Of the 106 different male and female signs, 37% were unrelated, and 63% were related signs. (See Table 2.) Even though a higher percentage of signs were related in form, the signs were still mutually unintelligible to men and women upon leaving the residential schools.

Table 2. Intersex variation in signs: related and unrelated signs

Total number of different signs	106 signs (100%)
% intersex variation—unrelated signs	39 signs (37%)
% intersex variation—related signs	67 signs (63%)

Later analyses (LeMaster 1990: 187–197; LeMaster—Dwyer 1991) revealed that in addition to differences in linguistic form, some of the problems with intelligibility of sign forms were due to signs that looked similar but had different meanings. Some of the male and female signs were identical in form, but had different meanings. For example, the male sign for BROWN is identical to the female sign for RED in that both signs use an index finger that strokes the lips. During a task in which men were asked to provide the meaning for a number of signs, I discovered that there were similar male and female sign forms that had different

meanings. For example, when the men saw the female sign for SOLDIER they interpreted it as meaning SISTER. Both signs look similar. The female sign for SOLDIER takes a cupped hand and moves it from shoulder to shoulder, palm facing the body. The male sign for SISTER takes the same cupped handshape with the palm facing the body, but instead of moving it from shoulder to shoulder, both hands are placed simultaneously just under both shoulders.

One of the initial concerns of the research was that the sex-marked differences might be restricted to certain semantic domains, or to certain items within semantic domains. However, it became clear from the data collected that these sex-marked vocabulary differences were overwhelmingly present in all of the semantic domains investigated. Table 3 provides a listing of the semantic domains explored. The number of signs used by men and women that were either identical in form or distinctly different are enumerated. The table also provides information about the number of different signs in each domain that were either related or unrelated in form.

Generally, the majority of the words elicited different male and female signs, regardless of the semantic category. Given that the same priests visited both schools, it is not unusual to have eight unisex signs among the twenty religious terms elicited. It is not altogether surprising that a relatively large number of unisex signs were found for the category "other nouns and pronouns". This number could be due to a conflated category, or due, in part, to the indexical nature of some pronouns (e.g., pointing to oneself to indicate 'me'). (See Appendix 3 for a listing of the signs included in each of these semantic domains.)

Table 3. Signs by semantic domain

Domain	Same sign	Different signs	Related/Unrelated
Kinship	1	12	11/1
Food and drink	2	6	4/2
Calendar and time of day	3	12	9/3
People	0	6	2/4
Religion	8	12	6/6
Animals	0	14	5/9
Color	0	8	1/7
Grammatical functions (e.g., question words, verbs, descriptors, prepositions)	5	22	19/3
Other nouns and pronouns	8	14	10/4
Totals	27	106	67/39

4. Social meaning of male and female signs

Deciphering the meanings of sex-differentiated language is perhaps the area of greatest contestation in gender language research. Even though the differences found in Irish Sign Language are strong, and seemingly attributable to gender, it is important to accurately describe these variations in culturally situated and relevant terms. Using Gal's (1991) heuristic, this section explores the social meanings of these language differences through an examination of how they are viewed by members of the community, a look at the practices that reproduce gender images and relations, and a discussion of the challenges and resistances to existing standard practices.

4.1. Community folk beliefs about sex differences in signs

Linguistic anthropologists are aware that the folk-view people hold about their language does not always correspond to actual linguistic behavior. At the same time, we understand that the "folk-view is itself a part of the sociolinguistic situation, and worthy of study in its own right" (Bright 1966: 13). There are a number of ways that the Dublin deaf community talked about the sex differentiated vocabulary differences. They referred to the sex-differentiated vocabularies as "school signs" which were both "proper" and "old". They were considered to be "old" because the schools stopped teaching sign language in the mid-1900s. The girls' school discontinued the signs around 1946, with the boys following them in approximately 1957. Since then the schools have educated the children through oralism—a method of speaking and lip-reading.[8] Therefore, the male and female signs are most likely to be known today by men over 50 years of age and women over 60.

The general folk belief, by both men and women, was that women gave up their female signs entirely when they acquired the male form of signing. The reasons that were often given for abandoning the female signs included claims by both men and women that they were "old-fashioned", "unnecessary", and "not as nice" as the male signs. Men also considered the female signs to be effeminate and the source of ridicule when used by a man in the community. It was commonly believed that men could not, and did not, want to understand female signs.

At the time of this research in the 1980s it appeared that younger people were often not even aware that male and female signs existed. Because the younger people did not acquire signs formally from the residential schools, having been educated through oralism (speaking and lip-reading), their covertly-acquired signs were often very different from the signs used by the older generation. Consequently, it was often very difficult for older and younger members of this com-

munity to understand each other. Of course some of the younger people were aware of the male and female sign differences but did not believe that they were used outside of the school setting. This claim has even been made by a hearing daughter of deaf parents whose parents had attended the signing Cabra schools.[9]

4.2. Practices that reproduce gender images and relations

Predominantly the male Cabra signs are being maintained within the community today. There are a number of practices that promote the male form of signing, including the use of male signs by both men and women. The women who have acquired the male form of signing typically have married a deaf Cabra-signing man or interact frequently in mixed-gender social groups that employ the Cabra signs.

Male signs are generally used in public settings. During the time of this research, the majority of leaders in the community were deaf men who used the Cabra-school sign language. There were a few female leaders, but typically these leaders either used speech and lip-reading or the male Cabra signs. Therefore, most public speeches, announcements, and other public acts were predominantly carried out in male signs. In 1988, Irish Sign Language was used on Irish television for the first time in a program designed specifically for deaf people. The two hosts were male and female yet both used male signs. The female host had attended the Cabra deaf school at the time oralism had been taught, but later married a deaf man who communicated through the male Cabra signs. Consequently she acquired the male signs for her own personal use.

At the time of this research the few qualified interpreters of Irish Sign Language also used predominantly male Cabra signs. The only interpreters seemingly competent to interpret into female signs were former teachers of Saint Mary's School for Deaf Girls.

Similar to the Carib language situation but opposite from what is found in Chiquita and Yana (Bodine 1975: 143, Sapir 1929), female signs are used exclusively by women, either by mono-dialectal women, or by women interacting with these mono-dialectal women. Typically mono-dialectal women have never married and rarely interact in mixed social groups. Bi-dialectal women will generally revert to using female signs at all-female functions, at religious retreats, or during visits to mono-dialectal women's residences. See Table 4 for a description of male/female sign usage patterns.

Table 4. Female and male sign usage by women and men

		ADDRESSEE		
SIGNER		WOMEN	MEN	WOMEN AND MEN
	WOMEN	Form 1 Form 2	Form 2	Form 2
	MEN	Form 2	Form 2	Form 2

Form 1 = female signs
Form 2 = male signs

4.3. Challenging and resisting standard practices

Although predominantly male signs are continuing in the community today, female signs have not been abandoned altogether. Certain collective, historical, and individual acts are serving to preserve these female signs. The distribution of male and female signs, though, is clearly changing among the younger generations.

Occasionally women would employ their female signs when they did not want men to know what they were talking about. More often, however, the female signs were used with mono-dialectal women who did not have a good command of the male signs. One of the clear situations in which this usually happens is during religious retreats where two interpreters attend. One provides interpretation into female signs, while the other interprets into male signs.

Women did not give up their female signs as the folk beliefs suggest, but have retained them for use in a variety of situations. Few of the women, however, employed female signs in inappropriate situations. As Table 4 depicts, female signs were used exclusively by women with other women. All other situations required code-switching to male signs. Yet, there was one prominent example in the community of a married woman[10] who was hailed as a competent and admired signer, yet was admittedly difficult for many people in the community to understand. Upon examination of her sign lexicon it became clear that her sign repertoire included a relatively static mixture of female and male signs. She had certain signs from each of the lexicons that she employed for her personal use. What was apparently unusual about her signing was that she was unwilling to code-switch from one form to the other in various situations. She retained certain female signs in her repertoire for use in all situations, even when those situations involved male interlocutors. This woman disclosed during an interview that she felt others should accommodate her rather than her having to give up her particular way of signing.

Similarly, there was one married man in the community who was often ridiculed by other men for his "effeminate" way of signing. This man openly admitted that he found some of the female signs to be more aesthetically pleasing than

the male signs, and therefore chose to use them. He was not bothered by the teasing of other men. Similar to his female counterpart, he signed to please himself, rather than others. He was also interested in promoting female signs since he found some of them to be more appealing than the male signs.

Men are quite reluctant to admit that they know any of the female signs for fear of being labeled effeminate. However, a study by LeMaster—Dwyer (1991) revealed that although the men do not know how to produce the signs, they did understand 60% of the signs shown to them in isolation. This finding suggests that the men have more access to the female signs than they are willing to admit.

During the time of my fieldwork in the 1980s, younger people did not appear to be very aware of the sex-differentiated vocabulary used by older people in their community. In fact, the signs that they were able to acquire were often different from those used by the more senior members of the community. Because of this, several male and female leaders in the community produced a dictionary of signs for the young people in 1979. These leaders felt that because signs were not being taught in school that the younger people needed a resource of "proper" signs. These leaders talked about not wanting to burden the younger people with their male/female sign differences, so they neutralized the signs in the dictionary by voting on which signs to include. Predominantly male signs were chosen, but a few female signs appeared in the dictionary as well. As a result, young men use some female signs today, but are completely unaware of their origins. They refer to the signs they use as "dictionary signs" rather than as formerly "male" or "female" signs.

5. Final comments

The sex-marked signs are diminishing in use among younger members of the Dublin deaf community today, and are being replaced by a greater number of sign variations. This increased variation is due to a number of factors. Learning to sign covertly while attending oral schools often produces variants of sign language according to variable access along social networks. Typical of oral situations anywhere, deaf children may find access to existing sign languages, or invent a system for use among themselves, or do some of both. In this community some children may gain access to either male or female signs, or both, or perhaps neither. Another factor influencing the sign variations present in the community today is the proliferation of deaf schools in Ireland. The Cabra schools are no longer THE centralized place of language socialization. Instead, there are schools in Cork, Limerick, Galway, and elsewhere. Some of these schools, e.g., Cork, offer sign language. Some of the families with deaf children are opting for day programs, rather than residential schooling. And graduates from the deaf

schools no longer reside in Dublin for its rich social life, but may choose to live near a number of deaf communities throughout the Republic of Ireland. All of these factors are having an affect on the types of sign variations emerging in the community today.

Although the sex-marked signs are diminishing in use in the community today and the folk belief of the community is that the female signs have been given up in favor of the male signs, this has clearly not happened. The women have retained female signs for occasional secretive communication among themselves, or for use with, or as, mono-dialectal women, or in some cases, as a static part of their repertoire. Senior men also seem to have access to these signs, either through the 1979 dictionary, interpreters at religious retreats, or other types of exposures. Certainly recognition of the female signs is necessary in order to ridicule a man for using them.[11] But what seems to be most interesting about the continuation of these signs in the community today is how younger people are incorporating them into their own linguistic repertoires. Because these signs are losing their history as either "male" or "female" signs, younger people are simply mixing the two vocabularies as the neutralized dictionary had intended.

As in many other situations of literacy, recording linguistic forms often preserves them when they may have otherwise been lost to future generations (Bright 1964: 50). Over the last few years, deaf people in Ireland have become much more aware of the variations present in their own language. The National Association of the Deaf recently produced another dictionary of Irish Sign Language that included variations of signs. The dictionary listed male and female variants for some entries. More recently the Linguistic Institute in Ireland has begun an intensive linguistic investigation called the I.S.L. [Irish Sign Language] National Survey & Research Project. So far this has been a broad-sweeping investigation into grammatical aspects of Irish Sign Language, but they are hoping for continued funding that will allow them to conduct more detailed research.

Of course it is fascinating to explore how the various social and community structure changes may be affecting language variation in this community, but many of these changes are due to language policy changes from education in sign language to oral education (LeMaster 1990: 217–247). This is not unique to Ireland as these kinds of changes have been experienced in the United States and elsewhere. Instead, what makes this language community so fascinating is its centralized, sex-segregated education that produced distinctively different ways of signing for men and women. In many cases, men and women wanted to be able to communicate, even marry and reproduce. It is fascinating to look at how the extreme sex language differences were handled not only by men and women who used different sign lexicons, but also by men who signed and women who were oral. What continues to be interesting about this community is how these sex-marked signs are being used in the community today, both by more senior and

younger members of the community. Because these differences were once present but are loosing reference to their historical origins, might they be incorporated into the language as gender forms that appear in Romance languages such as French and Spanish? Might there be a revival of the forms for ritualized, or secretive communications among one or the other sex? Exactly how these signs are used today and how they will be incorporated into future generations of signers is a rich area for future research.

Notes

1. See Johnson—Erting (1989) for a discussion of similar socialization practices in residential deaf schools in the United States.
2. A Sister from another Catholic order in Ireland provided me with this explanation.
3. At religious retreats today, two interpreters are provided for the hearing speakers—one who interprets into female signs, and the other who interprets into male signs.
4. See Woodward (1978) and Woodward—Erting (1975) for a discussion of a similar phenomenon in the United States.
5. Additionally, I used 100 and 200 word Swadesh lists to elicit more signs. I have only analyzed signs from the semantic domain list so far, and will report on those findings here.
6. Many more people were interviewed, but not all of them provided examples of each of the signs. I am using these data because they are the most complete and comprehensive, and enable me to examine each of the 153 items on the list. I also had different kinds of data in addition to the lexical elicitations. During these sessions I taped free-flowing conversation between the participants. I also provided each with a series of pictures on postcards and asked each to describe their picture to the other. (I had wanted to see whether they would use male or female signs with each other in their descriptions.) In addition to elicitation sessions, I have many videotapes of family dinners, and of people interacting naturally at various events held within the deaf community.
7. It is unclear what these variations were. Some were due to free variation, others to borrowings from Britain and elsewhere which undoubtedly have specific meaning for use within this community (cf. Bright 1966: 11). The origin of other variations is unclear. Since the research focused on the meanings of sex differences in language, this aspect of variation was not investigated further.
8. For an in-depth discussion of this situation, see LeMaster (1990).
9. Most of signers from the Cabra schools chose to reside in Dublin after their graduation. As such, they continue to be in a network of people who use the Cabra signs. This hearing daughter is from a family that chose to reside outside of the Dublin area, and it may be true that her parents have adopted a uniform way of signing with their family and the community in which they currently reside.
10. She had at least one deaf child. I cannot give more information than this without revealing her identity.

11. Not all deviations from male signs are ridiculed. The borrowing of signs from Britain, or elsewhere, is generally accepted among males, but not the borrowing of female signs.

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Appendix 1. 153-item semantic domain word list

Related signs (67 of 153):
AM, APPLE, ASS, AUNT, BAPTISM, BREAD, BROTHER, BUILD, BUY, CARDINAL, CARRY, CHAIR, COFFEE, COME, COUSIN, CRUEL, DAUGHTER, DOWN, DUCK, EASTER, EVENING, EXCITE, FALL, FAST, FATHER, FLOWERS, FRIDAY, GIRL, GO, GOSPEL, GRAND, GREAT, HEAD, HOW, KITCHEN, KNIFE, MASS, MONDAY, MONTH, MOTHER, NUN, NEPHEW, NIECE, NIGHT, RED, SHE, SIGN, SISTER, SIT, SUCCESS, RABBIT, TEA, THEM, THEY, THURSDAY, TIGER, TUESDAY, TURKEY, UNCLE, UP, WEDNESDAY, WEEK, WHICH, WHY, WOMAN, WORK, YOU.

Unrelated signs (39 of 153):
AFTERNOON, ANGRY, BIRD, BISHOP, BLACK, BLUE, BOY, BROWN, CAT, CHAPEL, CHRISTMAS, CHURCH, CLEAN, COCK, COLOUR, DAY, EXAMPLE, GOAT, GREEN, HEN, HOUSE, MAN, MEAT, MILK, MONKEY, MORNING, MOUSE, PAPER, PIG, POLICE, POOR, POPE, RAT, ROSARY, SOLDIER/ARMY, SON, TOILET, WHITE, YELLOW.

Same signs (27 of 153):
ARRIVE, BED, BUTTER, COMMUNION, FAMILY, FOOD, FORK, HE, HEAR, HEDGES, HOLY, LANGUAGE, LORD, MATRIMONY, ME, NOW, PRAY, PRIEST, PROTESTANT, SATURDAY, SERMON, TABLE, THOSE, TRUE, WHERE, WHO, YEAR.

Non-sex-related variations in signs (20 of 153):
CATHOLIC, BIBLE, DEAF, FRUIT, GARDEN, ORANGE, ROAD, ROOM, ROSARY, SPOON, SUGAR, SUNDAY, THESE, AMERICAN, FINE, IRISH, IT, JAM, SENTENCE, ELEPHANT.

Appendix 2. A description of the symbols used to represent signs in this paper (cf. Figures 1–2).

Point of articulation (PA) symbols:

- ∅ neutral signing space in front of body.
- 3 touch cheek(s)
- * touch hand(s)

Hand configuration (HC) symbols:

Handshapes:

- 1 extend index finger
- G' same as finger spelled letter "G" without three fingers extended
- E same as finger spelled "E"

Palm orientations:

- ᗡ palm down
- < toward the left of the body
- > toward the right of the body

Finger orientations (direction of finger determined by where fingers would be pointed if they were extended):

- ∧ upwards
- ⊥ away from the body
- < to the left of the body

Movement (MOV) symbols:

- X touching
- N up and down movement
- o short movement
- • sharp movement
- ∨ downward movement
- ω twisting movement
- > movement toward the right of the body
- e, ⊥, < } circle away from the body and to the left
- [X] touch at the end of movement

Appendix 3. Signs analyzed for each semantic domain (cf. Table 3).

Kinship
Same sign: FAMILY
Different related signs: AUNT, BROTHER, COUSIN, DAUGHTER, FATHER, GIRL, MOTHER, NEPHEW, NIECE, SISTER, UNCLE.
Different unrelated signs: SON.

Food and drink
Same signs: BUTTER, FOOD.
Different related signs: APPLE, BREAD, COFFEE, TEA.
Different unrelated signs: MEAT, MILK.

Calendar and time of day
Same signs: SATURDAY, YEAR.
Different related signs: EVENING, FRIDAY, MONDAY, MONTH, NIGHT, THURSDAY, TUESDAY, WEDNESDAY, WEEK.
Different unrelated signs: AFTERNOON, DAY, MORNING.

People
Same signs: 0
Different related signs: GIRL, WOMAN.
Different unrelated signs: BOY, MAN, POLICE, SOLDIER/ARMY.

Religion
Same signs: COMMUNION, HOLY, LORD, MATRIMONY, PRAY, PRIEST, PROTESTANT, SERMON.
Different related signs: BAPTISM, CARDINAL, EASTER, GOSPEL, MASS, NUN.
Different unrelated signs: BISHOP, CHAPEL, CHRISTMAS, CHURCH, POPE, ROSARY.

Animals
Same signs: 0
Different related signs: ASS, DUCK, RABBIT, TIGER, TURKEY.
Different unrelated signs: BIRD, CAT, COCK, GOAT, HEN, MONKEY, MOUSE, PIG, RAT.

Color
Same signs: 0
Different related signs: RED.
Different unrelated signs: BLACK, BLUE, BROWN, COLOR, GREEN, WHITE, YELLOW.

Grammatical functions (e.g., question words, verbs, descriptors, prepositions)

Same signs: ARRIVE, HEAR, TRUE, WHERE, WHO.
Different related signs: AM, BUILD, BUY, CARRY, COME, CRUEL, DOWN, EXCITE, FALL, FAST, GO, GRAND, GREAT, HOW, SIGN, SIT, SUCCESS, UP, WHICH.
Different unrelated signs: ANGRY, CLEAN, POOR.

Other nouns and pronouns
Same signs: BED, FORK, HE, HEDGES, LANGUAGE, ME, TABLE, THOSE.
Different related signs: CHAIR, FLOWERS, HEAD, KITCHEN, KNIFE, SHE, THEM, THEY, WORK, YOU.
Different unrelated signs: EXAMPLE, HOUSE, PAPER, TOILET.

Studies in language change, historical linguistics, and the history of linguistics

Studies in text and discourse

Studies in language structure