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MA Linguistics: Language Diversity of Africa, Asia and Native America



# Body metaphors of anger in GSL

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### **Abstract**

This thesis is a contribution to descriptive work on emotion expression in sign languages. The main purpose is providing a detailed description of anger expression in Ghanaian Sign Language (GSL), as well as placing this description within the framework of anger expression in the languages of the world. Anger is considered a basic emotion, resulting in a discussion about the universality of anger expression. This thesis aims to include sign languages in this discussion, by analysing anger expression in GSL in the context of proposed universals. Multiple data collection methods were applied, among which the usage of movie- and picture stimuli, scenarios containing different types of anger, and storytelling. Six signers of GSL were provided with these stimuli and asked to either narrate the movie, identify emotions, create a story containing expression of anger or act out scenarios. Results showed that GSL has a division, phonologically as well as semantically, between signs at the head and signs at the chest area. Furthermore, anger expression is largely iconic and metaphorical. GSL confirms existing theories about universals, such as the embodiment of anger expression and the universality of anger metaphors. However, GSL does distinguish itself from earlier research on anger expression in its usage of intensifiers. Furthermore, although GSL is based in American Sign Language (ASL), many of the signs belonging to the anger lexicon are unique to GSL. Nonetheless, the two signs most frequently used to express anger are the same in both languages.

**Keywords:** Sign language, Ghanaian sign language, semantics, emotion domain, anger expression, anger language, body metaphors, iconicity

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## **LIST OF ABBREVIATIONS**

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ASL American Sign Language

CMT Conceptual Metaphor Theory

GSL Ghanaian Sign Language

JSH Junior High School

NEG Negation

NOM Nominative

PAST Past tense

PL Plural

POSS Possessive

SG Singular

SHS Senior High School

## 1.1 INTRODUCTION

This thesis focusses on body metaphors of anger in Ghanaian Sign Language (GSL). In order to provide a framework, I will first introduce GSL (section 1.2), whereupon the literature on emotion and anger expression in spoken languages will be discussed. Literature on body metaphors of emotions and universal patterns are illustrated first (section 1.3). Section 1.4 focusses on anger expression in spoken languages (1.4.1) and anger expression in sign languages (1.4.2). Furthermore, I will zoom in on anger expression in two languages that have possibly had an influence on anger expression in GSL, namely American Sign Language and Akan (section 1.4.3). Finally, the goals and research questions of this thesis are presented in section 1.5.

The data presented in this thesis was collected during linguistic fieldwork in Ghana. Anger expression in GSL was researched among youth at the Technical Senior High School for the Deaf in Mampong, Ghana. In chapter two the methods of this research are explained, including a description of the participants (section 2.1), the research materials (section 2.2), and the procedure of the research and the analysis of the data (2.3). Furthermore, the pitfalls of this research are discussed in section 2.4. In chapter three, the results of this research are presented. Firstly, general signs for anger expression are discussed (section 3.1). Secondly, specific signs for anger are provided, organised accordingly to their location of articulation: on the chest (section 3.2.1) and at the head or face (section 3.2.2). For each sign discussed in this thesis the form (handshape, location, movement, path and speaker variation) is provided. Furthermore, its meaning and usage are explained on the basis of definitions and example sentences provided by participants. GSL is not only rich in signs for different types of anger, but it also has many signs referring to dissipating anger. These signs will be discussed in section 3.3.

The data presented in section 3 will be further discussed in the discussion. Firstly, patterns that can be established in the linguistic expression of anger in GSL are described (section 4.1). Secondly, the metaphors and the iconicity of this anger signs will be discussed, with extra focus on body metaphors (section 4.2). Subsequently, these patterns and metaphors will be put in the context of existing research and universal patterns within anger expression (section 4.3). Finally, the linguistic expression of anger in GSL is compared to that of ASL (section 4.4) and that of GSL (4.5). The results will be summarized in the conclusion (section 5).

## 1.2 HISTORY AND PREVIOUS WORK ON GSL

GSL is the biggest sign language of Ghana. Nyst (2007:31) describes GSL as a “Ghanaian version of American sign language”. GSL finds its origin in the efforts of Andrew Jack Foster, a deaf African American who went to Ghana in 1957. At the time the deaf people of Ghana were hidden by their families, since deafness was often seen as a curse that disgraced the family. Foster united the deaf and inspired some recognition. He started teaching the deaf community ASL (Deutch & McGuire 2015). Although GLS still has many signs that originate in ASL, it also contains many signs that are unique to GSL, mainly due to cultural differences. Furthermore, it developed separately from ASL. Therefore, it has been recognised as a separate language. According to an ASL speaker who worked at the same Ghanaian deaf school as I, GSL and ASL are not mutually intelligible.

Ghana now has thirteen primary schools for the deaf (Junior High School or JHS): one in every region, except for the central region, which has two JHS’s and the Eastern region, which has three JHSs. There is only one high school (Senior High School or SHS) for the deaf: Mampong High School for the Deaf. All JHS’s teach a slightly different variety of GSL. When students enter high school, they first enlist in PRESHS: a preparatory year, which is meant to teach the students the Eastern variety of GSL. This variety has become “standardized” to a certain extent, since it is taught at the only high school for the Deaf in Ghana. Since I have only worked with deaf people at the Mampong high school for the deaf, this thesis focuses on the Eastern variety of GSL.

The first dictionary of GSL was created by the Ghana National Association for the Deaf (GNAD) and the Special Education Division, however this work remains unpublished. Since the 2001 GSL dictionary, also by the Ghana National Association of the Deaf, more initiatives to document the

languages followed. Deutch and Mcguire (2015) is a concise dictionary, created with the help of Peace Corps volunteers in Deaf school in Ghana. It is divided into themes such as “food” and “people”. Furthermore, an online dictionary has been created by the Ayele Foundation as well as the dictionary App *Ghanaian Sign Language* by HANDS!lab. Linguistic contributions on GSL are Edward (2014), a morphology and phonology on the language, and MacHadjah (2016), a Master thesis on number marking in GSL.

### 1.3 LINGUISTIC EXPRESSION OF EMOTIONS

Broadly speaking, research on the linguistic expression of anger is a contribution to research on emotion expression in languages of the world. Therefore, research on the expression of emotions in spoken languages will be discussed first (section 1.3.1), as well as the linguistic universalities in emotion expression (section 1.3.2) before zooming in on anger expression in the spoken languages of the world (section 1.4).

#### 1.3.1 Previous research on emotions

The expression of emotions in different languages is a topic that has long been overlooked. Emotion language often largely consists of metaphorical expressions, which were regarded as uninteresting by the academic world in the past (Kövecses 2000). With the empirical psychological emotion research of James (1884; 1890) researchers from other fields started to show interest in the topic as well, for example anthropologist Rosch (1975) and linguists Lakoff and Johnson (1980). Rosch (1975) suggested that the basic emotions happiness, sadness, anger, fear, and love might be universal. It was not until the late 1990’s that the topic started to be researched on a greater scale by linguists. The concept of emotions is challenging to define. Emotions have a lot in common with “feelings”, however many scholars have argued that emotions cannot be reduced to feelings, for example Ryle (1949; 1951), Sayre (1963), Pitcher (1965), Alston (1967a), Bedford (1956-57), Lyons (1980), Wierzbicka (1992) and Prince (2005). Wierzbicka (1992) stressed the importance of a search for lexical universals, since more than one language (English) should be considered when defining a concept that is possibly (partly) universal. She established semantic primitives such as “feeling”, “good”, “bad”, “think” and “know” to categorise emotions (p. 542). Her “scripts” (sets of semantic primitives) mainly focus on the experience of emotions as something “bad” or “good” for example. It should be noted that different languages might categorize the same emotion differently. Other scholars have suggested many definitions since, which can be summarised roughly as: emotions can be described as states of being, or feelings that optionally lead to physiological changes in the body, which may trigger the person to act on the feelings, in order to express them (based on Lyons (1980), Wierzbicka (1992) Oatley and Jenkins (1996) and Ansah (2011).

Lakoff and Johnson created the Conceptual Metaphor Theory (CMT) (1980, 1999), which has since been implemented in research on metaphorical expressions of emotions in different language families (Barcelona 1986; Lakoff & Kövecses 1987; Kövecses 1990; Apresyan & Apresyan 1993; Emanatian 1995; Matsuki 1995; McVeigh 1996; Yu 1998; Soriano 2005; Sirvyde 2006; Chand 2008; Ansah 2011; Mashak et al. 2012; Ogarkova & Soriano 2014). This theory states that metaphors are a result of the mapping of concrete knowledge onto abstract experiences (Lakoff and Johnson 1980). This cross-cultural tendency is meant to help people understand abstract concepts in terms of concrete concepts. Kraska-Szlenk (2014) suggests that frequency of concrete concepts plays a large role in the creation of metaphors: frequently used words, or concepts that people are frequently exposed to, are often a source for metaphors. Naturally, the body is something people have a large amount of exposure and experience with. Lakoff & Johnson (1980; 1999) explained this large role of the body in metaphorical expressions as the *embodied cognition principle*. This principle states that the human cognition is determined by sensory, motor, and affectionate experiences, i.e., the way the human body interacts with the environment dictates how people cognitively perceive and map worldly and human experiences.

Ogarkova & Soriano (2014) summarize and categorize results of earlier research on the expression of emotions. First of all, they note that non-European languages often have less linguistic distinctions between physiological terms and emotion terms. Thus, they might directly apply body part terms or bodily functions and their syntax to expressions of emotion. The Fante term *atsinka*, for example, can refer to emotional states, such as happiness and sadness, as well as to physiological states such as ‘hunger’ and ‘thirst’ (Dzokoto & Okazaki 2006). Secondly, they discuss the division between languages that can express emotions through abstract, “arbitrary” emotion terms and languages that rely solely on physiological or metaphorical phrases for emotion expression. Examples of abstract terms are the English terms ‘angry’ and ‘happy’. Languages without such terms usually map emotions on the body. For example, they use different states of an organ, such as the liver, to express emotion. This example also shows that languages differ in the amount of specificity in the emotion lexicon as well. In Fante, *atsinka* can refer to a variety of emotions, whereas European languages, for example, have specific lexical items for each emotion. Throughout the world languages assign different emotions to different body parts. For example, in European countries the heart is considered to be the centre of emotions, whereas in many other parts of the world emotions are often assigned to the liver (Heelas 1996), such as in Chewong (Howell 1981); Chinese (Yu 2002); Japanese (McVeigh 1996); Kambera (Klamer 1998); Malay (Goddard 2001) Indonesian (Siahaan 2008) and Dogon (McPherson & Prokhorov 2011). Other languages have the abdomen as locus of emotions, for example Nipissing (Chamberlain 1895), Tigre (Littmann and Hoeffner 1962), Nigerian English (Bauer 1973), Tahitian (Lemaître 1995), Kuot (Lindström 2002) and Thaayorre (Gaby 2008). Some languages have a specific location for all emotions, while other languages assign negative emotions to one body part and positive (and negative) emotions to another body part (such as Basque (Ibarretxe–Antuñano 2008)). For the full overview see Ogarkova & Soriano (2014: 149).

### 1.3.2 Universality in linguistic emotion expression

A book of collected works on emotion expression in different languages was published in 1998 (Athanasidou et al.). Wierzbicka (1999) discussed the universality of the expression of emotions, including the tendency to link emotions to certain body parts. This crosslinguistic observation was further examined by Enfield & Wierzbicka (2002) and Ogarkova & Soriano (2014). They observed that many languages apply body part terms for emotion expression in the literal sense, for example *she blushed* in English, as well as metaphorically, such as *my heart sank* (Ogarkova & Soriano 2014: 148). This observation is in line with the claim that languages universally show embodiment of worldly and human experiences.

The universality of emotion concept has long been a topic of interest in cognitive linguistics and social anthropology (Kövecses 1995, 2003; Lakoff 1987; Lakoff & Johnson 1980; Lutz 1988; Maalej 2004). Although many aspects of emotions are universal, languages show variation in the way they express emotions as well. If we accept that language is a representation or reflection of cognitive structures, linguistic diversity suggests people of different cultures vary in underlying cognitive structures (Evans & Green 2006). This discussion dates back to the Whorfian linguistic relativity thesis – the principle that the language you speak influences how you see the world (Whorf 1956). Hupka et al. (1996) support the notion that emotion experiences are partly universal and partly culture dependent. Their comparative analysis of emotions in the nations Germany, Mexico, Poland, Russia, and the United States led them to conclude that although the nations described a similar distribution of bodily activities over the emotions under research, they identified different body parts as sources or locations of anger or jealousy. This study will be further discussed in section 1.4.1.

## 1.4 THE LINGUISTIC EXPRESSION OF ANGER

In this chapter previous research on linguistic anger expression is discussed. Firstly, literature on anger expression in spoken languages is presented, after which I touch on anger in sign languages (1.4.2). Finally, anger expression in ASL and Akan will be discussed (section 1.4.3). These languages have had the most intensive contact with GSL in the past.

### 1.4.1 Previous research on anger in spoken languages

With the emergence of linguistic research on emotions, anger expression gained attention as well. Wierzbicka (1992) noted that the attitude towards anger has been known to vary vastly among languages. Some cultures regard anger as something that should be held in, this is often the case in Asian cultures (Matsuki 1995), while many other cultures regard anger as something that should be let out, or expressed, after which a feeling of relief is experienced. This second attitude towards anger focusses more on the positive aspects of anger. A culture's attitude towards anger is reflected through languages, particularly through metaphorical expressions. According to the Conceptual Metaphor Theory described in the previous section anger is likely to be expressed through metaphors, since anger is an abstract concept. Although the exact (metaphorical) localisation of the source of anger differs among languages, anger is, at least partly, experienced inside the body. Therefore, embodiment of anger expression is common in languages of the world. Anger metaphors have been documented for Chinese (King 1989; Yu 1995), Wolof (Munro, 1991), Japanese (Matsuki 1995), Zulu (Tailor and Mbense 1998), Polish (Mikolajczuk, 1998), American Sign Language (Holtemann 1990; Grushkin 1998), Hungarian (Kövecses 1995), Spanish (Barcelona 2001), Old-English (Geeraerts & Gevaert 2008), Akan (Ansah 2011), and Persian, Kurdish and Guilaki (Rouhi et al. 2018).

Metaphors in the emotion domain, anger included, are often experiential in essence (Cairns 2016). That is to say: they are based on human interaction with the environment, as well as on personal experiences of feelings that occur alongside emotions. Kövecses (2010) discusses universalities in anger expression with a focus on embodiment of anger expression and anger metaphors. Embodiment of anger expression refers to the tendency to use the body part lexicon as a source for anger vocabulary. Examples of embodiment in of anger expressions can mainly be found in metaphors referring to experiences in the angry person's body, such as *he makes my blood boil* (Ogarkova & Soriano 2014: 148), or *smoke poured out of his ears* (Grushkin 1998: 149).

According to Kövecses (2010) the underlying anger metaphors that exist in many languages are:

1. ANGER IS PRESSURE INSIDE A PERSON
2. ANGER IS HEAT (INSIDE A PERSON)
3. ANGER IS A WILD ANIMAL.

The first two are often combined into ANGER IS A HOT FLUID IN A CONTAINER. Besides these general metaphors, Kövecses proposes four metaphors for intensity of anger, namely HEAT, QUANTITY, SPEED and PHYSICAL STRENGTH (2010:161).

Kövecses is one of the main contributors to comparative research on anger expression. His first work on anger expression (Kövecses 2000) is a typological approach to anger expression. Kövecses' analysis is based on a description of anger in English, Chinese, Japanese, Hungarian, Zulu and Wolof. Except for data on Polish (Mikolajczuk 1998) and ASL (Grushkin 1998), these were the only descriptions available at the time. Although these languages all represent a different language family, the scope of this research is very small, making it difficult to draw reliable conclusions. Nonetheless, based on the results of the comparison Kövecses (2000) analyses two contradicting hypotheses: on the one hand that "anger is conceptualized in the same way universally" and on the other hand that "anger is a social construction and thus varies considerably from culture to culture." (p. 159). Although they are contradicting, both hypotheses could be true to a certain extent: certain aspects of anger might be universal, while other aspects are culture specific. Hupka et al. (1996) reported results that fortify this theory. They researched where on the body anger, fear, jealousy, and envy were experienced by speakers from four different cultures (see section 1.3.4). Aside from a striking amount of overlap between the responses, they also found cultural differences. They noted that in Russia and Poland anger is experienced in the eyes and in the fingers, while in all nations (included in their research) except Russia it was (also) experienced in the stomach (p. 254). Many participants from all nations reported their face, breath, head, and heart as a location of anger (p. 255).



The linguistic overlap found by Kövecses (2000) and Hupka et al. (1996) is no coincidence. The universal conceptualisation of anger is (partly) the result of universal physical reactions to anger. Earlier research suggested that anger is often related to objectively measurable bodily changes, such as a body temperature rise, intensified breathing, and a faster pulse (Ekman, Levenson, & Friesen 1983; Levenson, Ekman, & Friesen 1990; Levenson, Carstensen, Friesen, & Ekman 1991). Kövecses (2010) adds the reddening of the face and neck as a subcategory of the rising body temperature, which appears in anger expression in English, Chinese, Japanese, Hungarian, Polish, and Zulu (2010:162). In English, shaking as a result of anger is reflected in the language as *to be shaking with anger*. Kövecses (2010) notes that this universality in physiology could result in a similar psychological mapping of anger, and thus similarities in metaphorical expressions of anger.

Although these physiological responses to anger are likely universal, Kövecses (2010) stresses that these experiences might nonetheless be categorized or recognized differently in different languages, accordingly to cultural differences. Cairns (2016) further emphasises the importance of cultural diversity and history of a language in the analysis of emotion language. Levenson et al. (1992) measured the physiological responses to different emotions, among which anger, in the Minangkabau a “matrilineal, Moslem, agrarian culture with strong proscriptions against public displays of negative emotion” (p. 971). They found that despite the different cultural attitude towards anger, the autonomic nervous system activity triggered by emotions were similar in English people and Minangkabau people, as well as the “voluntary facial actions”, suggesting that these responses to emotions are cross-cultural tendencies. These languages thus have differences in linguistic expression of anger, as well as in cultural values, even though their physiological responses to anger are similar. Levinson’s results are in line with Kövecses’ (2000) hypothesis discussed earlier in this section.

#### **1.4.2 Anger expression in sign languages**

The only descriptive work on emotion expression in sign languages is Grushkin’s (1998) research on anger in ASL. She discusses the relevance of research into specific semantic domains of sign languages for the discussion of the Deaf communities’ position within a culture. By comparing ASL to English, he aims to provide evidence that Deaf communities form a separate culture, rather than a subculture. This link between language and culture means that the expression of anger in sign languages tells us something about the deaf communities’ perception of anger. Grushkin (1998) also points out that the socialisation of deaf children differs from that of hearing children. For American children he noted that when the teachers of deaf children did not speak sign language, the children could not be told how to deal with emotions and were thus often silenced instead. It should be considered that there is a lot of variation in the development of the social skills of deaf children. Whether or not the parents of the child are deaf, or hearing has a large impact on the socialisation for example. Growing up as a Deaf person in a hearing culture results in a different kind of exposure to the culture than growing up as a hearing person, especially when a child has hearing parents, due to communication barriers. These differences in experience and exposure could lead to differences in culture, which could in turn result in differences in the language. This is consistent with the interrelationship between language, experience, and culture, explained in Grushkin (1998) and the linguistic relativity thesis described earlier.

Other disciplines within linguistics have discussed emotions in sign languages. First of all, cognitive linguists research on differences in anger expression between deaf and hearing children, focussing on the mental aspect of language on the development of emotion concepts. Second of all, hearing peoples’ perception of emotion sign languages was researched. Hietanen et al. (2004) looked at Finnish sign languages, based on the hand movements in signs belonging to this semantic domain (Hietanen et al. 2004). Goldstein & Feldman (1996) and Goldstein et al. (2000) did something similar for hearing Americans’ understanding of facial expressions in ASL. Thirdly, Deaf peoples’ interpretation of nonverbal emotion expression has been studied by Weisel (1985) and Denmark et al. (2014), the communication of emotions between deaf people and hearing people by Vaccari &

Marschark (1997) and deaf and hearing peoples' understanding of emotional facial expression by McCullough et al. (2005).

### 1.4.3 Anger expression in ASL and Akan

GSL's lexicon is most probably influenced by two languages: ASL and Akan. As mentioned in section 1.2 GSL's founder was a deaf American, who taught the Ghanaian deaf community ASL. Therefore, although the language is not mutually intelligible with ASL, a large part of their lexica remains similar. Signs in the anger lexicon of GSL might thus be directly taken from ASL or based on the ASL anger signs. Akan is the spoken language in the area of the high school for the Deaf as well as the biggest local language of Ghana. Many of the students at the deaf school grew up with hearing parents, who are speakers of Akan. Akan could thus have an influence on GSL through home signing and body language of parents. Furthermore, a handful of teachers at the high school taught their classes in sign supported Akan at the time of this research. This type of contact might result in borrowings of Akan structures in GSL. It should be noted that students do not (fully) understand sign supported Akan, or sign supported English, which lowers the likeliness of borrowing structures. In this section anger expression in both languages will be discussed.

#### *Anger expression in ASL*

Grushkin (1995) discusses the anger lexicon in ASL, with particular focus on metaphorical expressions. He collected 28 signs and phrases that express anger or are related to anger. These signs were a result of elicitation, as well as of the knowledge Grushkin had on anger expression, being a signer of ASL himself. Many of the signs Grushkin discusses are metaphorical and seem to be compounds. The signs MAD and CRABBY or GROUCHY are the only signs that appear to be arbitrary according to Grushkin. They are almost identical, differing only in movement and facial expression. The signs have a bent-5 handshape, are located at the face, palm facing inwards. MAD is articulated by an optional contraction of the fingers, whereas CRABBY or GROUCHY distinguishes itself by repeating the contraction several times. It is signed to indicate that a person is in a bad mood, while MAD is described by Grushkin as expressing a "moderate amount of anger" (Grushkin 1998: 151). CRABBY or GROUCHY thus generally refers to a smaller amount of anger than MAD, however the anger lasts longer.

Many of the signs in the anger lexicon are located at the stomach or chest area in ASL. This is the case for ANGER, RELIEF, BOIL-AT-STOMACH, AGGRAVATED-FRUSTRATED, RESTRAIN-ANGER, STOMACH-CHURN and ANGER-RISE-UP (Grushkin 1998). BOIL-AT-STOMACH (both 5-hands are brought to the stomach, palms facing up, then the fingers make a wiggling motion) implies anger that can be kept under control, as it is not rising up. Since this sign reflects boiling water, it is also an example of the metaphor ANGER IS HEAT in ASL. More specifically, it represents the metaphor ANGER IS FIRE in ASL. The handshape and movement of FIRE and BOIL-AT-STOMACH are the same. The signs differ only in location. Holtemann (1990) discusses a variety on BOIL-AT-STOMACH where the dominant hand ends abruptly in an s-hand, meaning that the anger was intense ("simmering in anger"), yet not expressed (Grushkin 1998: 156).

The wiggling fingers are also found as a classifier for water in motion, for example in RIVER and OCEAN-WAVE (1998: 155), suggesting that in the case of anger expression they represent a fluid that moves up (and down) in the chest, which points to the existence of the metaphor ANGER IS A PRESSURIZED FLUID INSIDE A PERSON/CONTAINER in ASL. Interestingly, the sign BOIL-AT-STOMACH does not seem to have the motion-aspect of the classifier. It does have this meaning when the sign is intensified, in which case the hands move up and down, reflecting a heavily boiling fluid (Grushkin 1998).

Other signs that support the existence of this metaphor in ASL are AGGRAVATED-FRUSTRATED (both b-hands or c-hands make restricted circular movements at the chest) and MIND-BLOW-TOP (index finger of the dominant hand to the temple (to sign MIND), then bring the palm of the dominant 5-hand down to the non-dominant s-hand (thumb on top), with wiggling fingers and make contact with the s-hand twice). The first is described by Grushkin as a "more subtle" expression of the

metaphorical concept (p. 152). Grushkin argues that this movement is iconic and represents a low boiling, or even the “bubbling up” of anger inside the body. Both these translations seem contradictory to the rest of Grushkin’s analysis, since boiling is represented by wiggling fingers in other signs for “bubbling up” one would expect and upwards movement, instead of a circular movement, based on Grushkin’s analysis of ANGRY, MIND-BLOW-TOP and EMOTION.WELL.UP, which will all be discussed further on in this section. Interestingly, AGGRAVATED-FRUSTRATED is different from the online Handspeak dictionary’s translation of FRUSTRATE, which is signed by bringing a b-hand, palm facing away from the body, towards the chin twice (without contact) in a wavy motion.

MIND-BLOW-TOP is iconic for a pot (the non-dominant s-hand) and a lid that is pressurised by boiling water (the dominant 5-hand). According to Grushkin the dominant hand represents the lid on top of a boiling pot (the non-dominant hand), thus clearly in line with the ANGER IS A PRESSURIZED FLUID INSIDE A PERSON/CONTAINER metaphor. Demonstrating the ANGER IS A PRESSURIZED FLUID INSIDE A PERSON/CONTAINER metaphor even more clearly are the signs MIND-BLOW-UP, MIND-GO-UP-IN-THE-AIR and MIND-POP-UP, all representing an explosion in ranging intensities, thus anger leaving the body. MIND-BLOW-UP is iconic for a volcano eruption, thus a pressurized fluid. These signs also represent the metaphor WHEN A PERSON EXPLODES PARTS OF THEM GO UP IN THE AIR. I will not further discuss these signs here, since Grushkin’s descriptions of the signs are very concise and the glosses summarize the meaning of the signs effectively.

According to Grushkin signs that further confirm the BODY AS A CONTAINER OF FLUID metaphor are RELIEF (two b-hands move down over the chest area) and YOU-CALM-DOWN (slowly move 5-hands up and down in neutral space, palms facing down). RELIEF refers to “feeling better” after an emotion (Grushkin 1998: 157). YOU-CALM-DOWN, is self-explanatory; it is used to calm down a person that is expressing anger, or to reduce violence. Since YOU-CALM-DOWN is signed in neutral space, it is unclear why Grushkin assigns the sign to the metaphor BODY AS A CONTAINER OF FLUID.

Besides the signs that involve the mind mentioned above, ASL has two other anger related signs located at the head: MIND-USE-UP and MIND-LOSE. MIND-LOSE is a two-handed sign. The dominant hand initially raises the index finger to the temple, to mean mind, then changes into a c-hand as it goes though the non-dominant c-hand in neutral space and ends in a flat o-hand. It signifies that a person is irrationally angry, thus not thinking about the consequences of the actions caused by the anger. Grushkin (1998: 153) describes MIND-USE-UP as “sign MIND, then bring the dominant hand down onto the non-dominant B, palm upwards handshape, towards the fingertips, ending in a closed fist or s-handshape”. Unfortunately, he does not provide a visual representation of the sign. The meanings are very close to each other: MIND-USE-UP indicating that a person does not know what he is doing out of anger. Grushkin does not discuss the metaphorical aspect(s) of these signs. In both cases the person seems to leave the body (or mind) along with the anger that is coming out of the body. ANGRY (both bent 5-hands move from up and outwards from the chest) also seems to reflect anger leaving the body (bursting out), which again refers to the PRESSURIZED FLUID IN THE BODY metaphor. As for the location, Grushkin recognises that it is also shared with general emotion terms, such as EMOTION, FEEL and EXCITE, which could also be the motivation behind the location (p. 159). According to Grushkin, the existence of the metaphor ANGER IS A WILD ANIMAL (Kövecses 1987) in ASL might also be demonstrated by the sign ANGRY, since the handshape is also a classifier for claws in ASL and the “initial contact point” is the same as that of ANIMAL (Grushkin 1998: 159). As will be further discussed in section 5, this handshape has numerous interpretations. Note also that Grushkin did not propose this metaphor for MAD, which has the same handshape.

EMOTION.WELL.UP fits well in the patterns of anger expression in ASL, although it does not solely express anger, but rather any strong emotion. It is located at the chest, the 5-hands (palms facing inward) moving up towards the face with wiggling fingers. Based on the analysis Grushkin provides of BOIL-AT-STOMACH this sign could be interpreted as boiling over with emotion. Finally, ASL adapts some American expressions as well, such as SICK-OF, STOMACH-CHURN, meaning to “be sick of someone” (not tolerate their behaviour or presence anymore), and THROW-#FIT and PISSED-#OFF, which are borrowings from English and rarely used in ASL.



person's body that needs curing". Food is a source domain of anger in Akan because similar to food, anger is seen as something that needs to be swallowed. Furthermore, anger is experienced as a drop of the heart or chest, which is reminiscent of food and drinks going down after swallowing. Finally, anger is compared to food that is considered "not sweet" (not tasty) by speakers of Akan (bad input makes angry).

In the examples provided in this section it becomes evident that Akan harbours two seemingly contradicting views, namely that anger is something that has to be retrained and that anger is something that should be expressed in order for it to go away or grow smaller.

## 1.5 GOALS AND RESEARCH QUESTIONS

The motivation for focussing on anger, rather than other basic emotions, was simply that the pilot of linguistic expression of emotions showed that anger has a larger and much more diverse lexicon than other emotions in GSL. Different types of elicitation for the collection of the emotion lexicon (see section 2) resulted in the collection of one or a few signs for each specific emotion domain (such as happiness and fear), whereas the pilot showed five different signs expressing different types of anger.

Sign languages are often overlooked in discussions of universality of language. The discussion about anger expression in languages of the world is no exception to this. This might be due to the fact that literature on the semantic domain of emotions in sign languages is very scarce. More research on anger expression in sign languages would provide an interesting perspective on body metaphors of anger, because sign languages have the possibility to articulate signs on the body. All parameters of a sign in the emotion lexicon have the potential to be iconic or metaphorical. The handshape, location, movement (path, repetition, speed), and orientation of a sign can each carry a different part of the iconicity or semantics of the sign. This type of information might differ from the type of information spoken languages provide. Therefore, sign languages are a valuable addition to the discussion of embodiment of emotions. The first goal of this thesis is thus to provide a description of the signs that express or are related to anger in GSL. Thereafter, I aim to discuss the lexical and semantic patterns that can be seen in the description of anger in GSL. As is illustrated in section 1.4 embodiment and body metaphors are an important part of anger expression in languages of the world. Therefore, I will also discuss these for GSL.

Another goal of this thesis is to compare anger expression in GSL to ASL and Akan. Given the fact that GSL has its base in ASL, it would be expected that if the anger lexicon differs from that of ASL, it would be due to cultural differences. This would support Kövecses' (2000) claim that although some aspects of anger are universal, cultural differences might influence the way languages talk about anger. Differences between Akan and GSL tell us something about the influence of culture on language, and thus about the linguistic relativity thesis. Following this theory, it would be expected that deviations from, and additions to, the ASL-based language GSL started out as are likely to have expressive value in the Ghanaian culture, but not necessarily in the American culture (at the time ASL was introduced to the Ghanaian Deaf community). Furthermore, by comparing anger in GSL with anger in Akan, conclusions can be made about the influence of the hearing community on the Deaf community in one country.

In conclusion, the main aim of this thesis is to include sign languages, or GSL specifically, in the discussion about embodiment of anger expression, which is a step towards including sign languages in the broader discussion of emotion expression across languages. In summary, the main questions this thesis attempts to answer are:

1. How is anger expressed in GSL?
2. What body metaphors are present in the anger lexicon of GSL?
3. How does anger expression in GSL contribute to the discussion of embodiment and universalities in anger expression?

4. How is anger expression in GSL similar and different from ASL and Akan and what does that say about the influence of culture and contact on language?

## 2 METHODOLOGY

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The data presented in this thesis was collected during a research project at the Senior High school for the Deaf in Mampong, Ghana. The project had a duration of two and a half months, lasting from September until December 2019. The data collection consisted of twelve sessions with two to five participants. The length of the sessions was roughly an hour on average. The languages used in all session were Ghanaian Sign Language and sign-supported English (using Ghanaian signs). More specifically, the participants used GSL and I mainly used sign-supported English, since English and GSL signs were our only common ground initially. As the sessions progressed my GSL improved, resulting in smoother communication and thus more efficient data collection. Initially, my research covered expression of all types of emotions. The focus gradually shifted to anger expression. I will discuss the background of the participants, the material and methods used for data collection and finally the procedure. For each section I will briefly discuss the full project, upon which I will zoom in on the sessions on anger expression.

### 2.1 PARTICIPANTS

In this section I will briefly discuss the background of the deaf community as well as the relevant aspects of the backgrounds of the participants.

#### 2.1.1 Background on the Deaf community

Deaf people in Ghana usually start learning sign language in primary school (junior high school, JHS), where they go when they are more or less seven years old. Before that they use the extensive Ghanaian home sign language or gestures, which is used by hearing parents everywhere in Ghana to communicate with their deaf children, according to one of the participants. After finishing JHS, students can enrol in the senior high school for the Deaf (SHS). The education language in Ghana, for JHS and SHS, is English. For deaf schools this implies that schoolbooks are in English and hearing teachers use sign-supported English, although some teachers use sign-supported Twi (the local Akan dialect). Additionally, students have English classes in all years of SHS. This results in a basic knowledge of English among students at SHS.

All students at the SHS are influenced by all varieties of GSL, since there is only one high school for the Deaf in Ghana. Therefore, students at the school come from all the regions in Ghana. All students live on the school campus, regardless of where they are from. Although the students are taught the Eastern region variety of GSL in the first year of High School, the regional differences remain present in the signing of the students, especially in communication among students outside of school hours.

#### 2.1.2 Participants

I worked with a total of eleven participants, two translators and one deaf American Peace Corps volunteer, who assisted me with some of the sessions. Most of the participants were students at Senior High School for the Deaf and were aged between nineteen and twenty-two years old. One participant was a thirty-one-year-old deaf teacher, teaching Information and Communication technology. Six participants took part in the sessions about anger expression.

Since the focus of this thesis is not on regional variation in anger expression, I did not select participants based on their dialect. By chance, four out of the six participants went to Jamasi, the JHS in the Ashanti region of which one was born in the Upper Eastern region. He moved to the Ashanti region at the age of fourteen, after which he spent four more years at the JHS. Therefore, the data presented here mainly represents the variety of GSL taught in the Mampong high school for the Deaf, with influences of the Jamasi variety. The Ashanti region is the region to the west of the Eastern Region,

which is where the school is situated. The other two participants grew up in the Western region, although only one of them went to the region's JHS for the Deaf, Takoradori, since the other became deaf at the age of eighteen, thus he learned GSL at the SHS for the Deaf. He did not attend many sessions, since he joined the project on my last day of recording. I decided to include this participant here, because this session proved fruitful for the purpose of this thesis.

Most participants were monolingual, with a very basic understanding of written English, although the level of English was relatively high among the signers I worked with. This bias is an almost unavoidable result of the fact that hardworking students were more eager to join my project and proved the most reliable.

All six participants were male. This has two main reasons, neither of which have to do with the nature of the research. First of all, the deaf school counts many more male students than female students, the ratio being roughly 1:3. Second of all, female students were often under the impression that the sign language of the boys was "better", and thus did not feel comfortable joining the project. Male students more often take on the role of sign language teacher of interns as well, which might feed this idea.

One of the participants has very bad eyesight, which resulted in participants sitting next to him repeating my question to him, in native GSL (rather than my GSL-supported English). This "translation" occasionally turned out to be useful data as well.

My research assistant was a deaf woman from California, USA, who had started as a peace corps volunteer, teaching English on the deaf school, four months before she joined my research. She is fluent in ASL as well written and sign supported English. All peace corps volunteers working on deaf schools are taught GSL before they start teaching, therefore she was almost fluent in GSL. Although she was not fluent in GSL grammar, the Deaf community's GSL and hers were mutually intelligible. The advantage of working with her was that, unlike my communication with the Deaf community in the first month, we soon had no communication barriers or issues, since we lived together on the school campus and both knew GSL-supported English.

## 2.2 MATERIAL

To my knowledge, there are currently no methods in existence for collecting expressions of anger in sign languages, since the only work on anger expression in a sign language is Grushkin's (1998) work on ASL. Therefore, material used for the data collection presented in this thesis is partly inspired by methods for data collection of anger expression in spoken languages.

The wordlist used for elicitation was largely based on the signs in a dictionary of emotion lexicon in *Nederlandse Gebarentaal* (Nederlandse Stichting voor het Dove en Slechthorende Kind 1993). This dictionary includes emotion signs as well as all signs that are (vaguely) related to a feeling, such as GELIJK HEBBEN "being right". Since I wanted to focus on the expressive, bodily aspect of emotion, I did not include all signs from the dictionary in my wordlist. Moreover, not all signs were translatable to English. I also included English emotion words based on my own knowledge of English. The wordlist was extensive, consisting of 265 words, however, not all words were elicited.

As mentioned earlier, the movie stimuli used for this research were cartoons, since these do not require sound. The first cartoon is a compilation of *Tom & Jerry* scenes including Butch, the cat (WB 2018). This compilation was especially effective for this purpose, due to the different relations between the characters. All scenes featured at least three characters (Tom, Jerry, and Butch). The different relations between the characters make for interesting displays of emotions. Tom and Butch are inherently Jerry's enemies (figure 1), although the roles switch occasionally: Tom and Butch as enemies and Jerry teaming up with one of them. The scenes contain many different types of anger, fear, and pain.



Figure 1: Tom & Jerry cartoon: Tom and Butch are angry with Jerry

The second cartoon was a Christmas edition of *The Pink Panther*, which largely had a similar set up: two enemies attempting to reach the same goal; buying a sportscar. This cartoon had a clearer storyline than the *Tom & Jerry* compilation. Therefore, it was my expectation that it would be easier to identify emotions and sympathise with the characters. Indeed, it seemed easier for participants to identify the emotions in the clips and differentiate between sub-levels of emotions (such as mad, angry, and furious in English) (figure 2).



Figure 2: *The Pink Panther*

The picture stimuli mentioned earlier were “story builder” cards, designed by Sardinha (2011): a set of cards consisting of “character cards”, depicting people, and “action cards”, depicting different kinds of events and actions, such as *angry*, *scold* and *help* (figure 3). Story builder was designed as a tool for linguists to apply creative story telling as an elicitation strategy for the collection of natural speech.

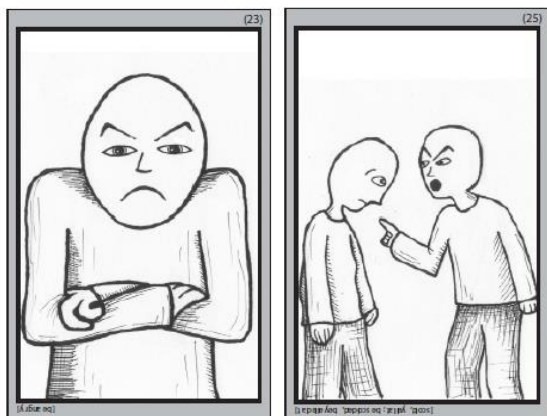


Figure 3: Story builder cards (Sardinha 2011)



Finally, Sauter's (2009) scenarios were applied to elicit basic emotion signs. The scenarios consist of concise definitions of a list of twenty-six emotions which are believed to be basic human emotions, as well as one or two examples for each emotion. They were developed with spoken languages in mind. To my knowledge the scenarios have not been applied to research on emotion in sign languages in the past.

## 2.3 PROCEDURE

In order to research the linguistic expression of anger in ASL data was collected using the materials described above. The procedure of the data collection will be discussed in this section, whereafter the data analysis methods will be described.

### 2.3.1 Data collection

Initially, the aim of this project was to collect data on the expression of emotions in Ghanaian Sign Language. In order to find the best angle for this topic, a pilot was implemented, consisting of two phases: elicitation of emotion words and identification of emotions on the basis of short cartoon clips. During this pilot, the basic vocabulary for the emotions happiness, anger, fear, and sadness was collected. For the elicitation participants were provided with words from the English emotion lexicon, using fingerspelling, and were requested to translate the word, or occasionally the phrase, to GSL. As previously stated, the wordlist was very extensive. After the basic emotion signs were collected the participants were asked to select words they recognized and could translate to GSL. For the second part of the pilot, participants were shown very short clips of the cartoon movies, upon which they were asked how the characters in the movies feel during the clips. The goal of this strategy was to elicit different levels of emotions, i.e., testing for variation in intensity as well as semantic boundaries of different emotions. Especially the latter strategy showed a lot of lexical variation in anger expression, which inspired the focus on the anger lexicon.

Much of the data on anger expression are in the form of a story, however these stories were collected using different elicitation strategies. In the initial stage of the research, I introduced picture stimuli to collect natural sentences. The task I gave the participants was to build a story using story builder cards (Sardinha 2011). The participants were asked to build a short story around one card that clearly represented anger. There was no limit to the number of cards they could use to tell the story, although they never used more than ten cards (figure 4). Once they arranged the cards, one participant was asked to tell the story they created. In some cases, the same story was told slightly different by three participants and one story was both told regularly as well as acted out by two participants.



Figure 4: Example of a story with Story Builder cards

Movie stimuli were applied as another elicitation strategy for the collection of stories in the initial stage of the research. The stimuli served different purposes. First of all, the participants were asked to narrate the *Tom & Jerry* movie. This resulted in a detailed description of the movie. Secondly, participants acted out parts of the movie, which was reminiscent of mime artists, thus not containing many signs, however, this step did help the participants familiarise with the scene, which was helpful for the last step. Finally, students were asked to watch the same scene one more time and explain what they saw afterwards. Although this resulted in less detailed data than the first approach, the goal of this final step was to collect more natural data on anger expression.

The stories gave a good idea of the linguistic possibilities within anger expression, however, in order to collect more interactional data, two different types of scenarios were introduced at a later stage of the data collection sessions. Firstly, Sauter's (2009) emotion scenarios were applied. He created a list of (possibly) universal emotions and provided a definition and an example of all emotions. My research assistant translated the definitions and examples to GSL, upon which the participants provided the signs that represented the scenarios most accurately in GSL. Secondly, I created scenarios which instigated improvised acting, in order to collect natural conversations focusing on dealing with conflict and anger. As preparation for this session, I had written scenarios that involve anger, based on my experiences in Ghana at the time. I asked my research assistant to explain the scenarios to the participants. The first scenario was an event that would trigger a small amount of anger, each subsequent scenario being more infuriating. First, the participants acted out the scenarios together. Afterwards, I would ask a participant who was not part of the sketch, as well the participants who were part of the sketch, how the characters felt during their sketch. This often led to discussions about intensity of anger among the participants. The final strategy for the collection of natural data through storytelling was the elicitation of personal stories. Participants were asked about the last time they felt angry and to explain the context.

Finally, some sessions were dedicated to answering questions that arose on the basis of earlier sessions, for example about the usage or definitions of signs that came up. Another attempt at collecting natural data was the acting out of scenarios.

### **2.3.2 Data analysis**

For the labelling and transcription of the collected signs I stayed true to the translations provided by the Deaf community as much as possible. The participants provided the fingerspelling of the English translation. In the cases where participants did not provide a fingerspelled translation, I chose a label that best captured the definition provided by the participants.

For the translation of the data, I worked with one hearing signer of GSL and one deaf signer, both teachers at the Deaf schools in Mampong. The hearing teacher taught at the junior high school and the deaf teacher at the senior high school. I worked with the hearing signer during the first month of the project and with the deaf signer for the remaining time of the project. The stories were translated in ELAN. The gloss INDEX refers to pointing the index finger (optionally) at someone or something. In GSL this can be interpreted as a demonstrative (in the case the object is proximate and can be pointed to) or a pronoun. In the examples presented in this thesis it always refers to a pronoun.

All translations were then exported to a document, in order to facilitate searching for different contexts in which the signs are used. Unfortunately, there was not enough time to translate all of the data on sight, since two sessions took place during the last two days of the project. The final two sessions were largely translated without help from signers. During the analysis of the stories, I remained in contact with two participants and the deaf interpreter via WhatsApp to discuss the semantics of signs. Many of the examples provided in this thesis are not full sentences, since the participants often describe a scene, therefore certain information is implied without mentioning them. This "missing" information was inserted in the translation in between brackets, in order to make the examples easier to follow.

The signs were compared in Excel on the basis of their location, handshape, movement (path and repetition), non-manual signals and iconicity. Interesting patterns were further analysed by zooming in on the contexts and sentences the signs appeared in.

## 2.4 PITFALLS

It should be noted that my knowledge of GSL was very limited in the initial stage of the research. Since my sign language teacher mainly taught me the lexicon of GSL my GSL remained largely sign-supported English, thus using GSL lexicon with English word order. It should be considered that signers adapted their signing during sessions that has a communicative nature (questions and answer). This language barrier resulted in misinterpretations of the questions I asked and in the explanations of the tasks. The quality of the data sessions significantly improved as my knowledge of GSL improved. Therefore, I have taken the first four data collection sessions with a grain of salt and mainly focussed on the later sessions when analysing the data. On the other hand, the downside of improving the communication was that some signers adapted their language slightly to mine, as they realized I only knew a few grammatical rules of GSL and relied largely on English grammar in my GSL. Fortunately, most participants' level of English was not good enough to fully adapt their signing to mine.

## 3 ANGER EXPRESSION IN GSL

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Compared to other subdomains of the expression of emotions in GSL, anger expression has a relatively large lexicon, with many modifiers to express subtle semantic variation, such as facial expression and intensity (size and speed) of the movement. In this section the form and semantics of all signs denoting anger will be discussed, as well as iconicity and metaphors related to the anger lexicon.

All signs expressing a type of anger are embodied in GSL, that is to say, they are articulated on the body rather than in neutral space. The two main locations of the signs are the head and the chest area. Generally speaking, signs denoting anger that are articulated at the chest area refer to the experience, or feeling of anger, while signs that are articulated at the face refer to the expression of anger, or showing anger, for example 'to frown' or 'to get angry'. Before discussing this pattern further, I will discuss two signs that do not conform to this pattern, namely ANGRY1 and ANGRY2. These signs are much more frequently used to sign about anger than the signs that do follow the pattern.

### 3.1 GENERAL ANGER EXPRESSION

Upon asking a signer of GSL for a translation of "angry", ANGRY1 and ANGRY2 come to mind first. ANGRY1 occurs 49 times in the database and ANGRY2 even occurs 117 times. The frequent use of ANGRY2 is related to its broad meaning, which will be discussed after the form of the signs.

Although ANGRY1 and ANGRY2 are semantically similar, the two signs are realised differently, except for the fact that they have the same handshape and orientation: the palm(s) of bent-5-hand(s) face inwards. In the case of ANGRY1, the hand is located at the face and the movement is relatively subtle, namely flexing, or tensing, of the fingers (figure 5), whereas ANGRY2 is a two-handed sign at the chest area, which is realised as a fast, upwards movement, starting at the stomach, and ending at the chest (figure 6). The teeth are often shown to add intensity.



Figure 5: ANGRY1

The hand orientation of ANGRY2 differs among signers; for the first variety signers initiate the sign with the fingers pointing down, then slightly rotating the wrists as the hands move up and the elbows move down and towards the body, so that the fingers face each other (figure 6). Alternatively, signers do not rotate their wrists, nor push their elbows inwards, instead they move only their hands and contract their fingers (figure 7).



Figure 6: ANGRY2, variety 1



Figure 7: ANGRY2, variety 2

ANGRY2 is optionally signed with one hand. This is congruent with earlier research on the phenomenon “weak drop”, a term introduced by Padden and Perlmutter (1987). They describe the drop of the non-dominant hand as “optional and especially prominent in rapid or relaxed signing” in ASL (1987: 350). Weak drop is thus not specific for the expression of anger or emotion in general; all symmetrical two-handed signs occur one-handed occasionally in GSL. Siedlecki and Bonvillian (1993) analysed child language data and concluded that a drop was most likely in the case where both hands make contact with the body, which is true for all two-handed signs discussed in this thesis. In the case of anger expression there are two motivations for weak drop. As briefly mentioned earlier, the choice can be a

result of a practical consideration, such as only having one hand available or not having the energy to make a larger movement. According to one of my participants, this was the biggest motivation behind signing two-handed signs with one hand in GSL, however, further discussion of the subject pointed out that it optionally adds semantic nuance. Signing with one hand takes away from the intensity of the expression, given that the signer chose to use one hand even though both hands were available. To my knowledge, this semantic nuance has not been mentioned in earlier research, however it is an intuitively understandable nuance.

ANGRY1 is relatively congruent with the semantic division between signs at the head and signs at the chest area discussed earlier. Its core meaning is to frown (at someone), which is an expression of anger through body language rather than a description of the experience or feeling of anger. However, this sign is applied much more broadly, almost as a general sign for the feeling and expression of a small amount of anger. ANGRY2 on the other hand, is very different from the other signs at the chest area. The expectation would be that the sign expresses the emotion or refers to bodily processes that accompany anger. Instead, it denotes the expression of anger, which is otherwise articulated at the head, or face. Furthermore, signers' intuitions indicated that ANGRY1 and ANGRY2 meant the same thing. Which implies that the languages tendency to make a semantic distinction between signs at the chest and signs at the head is not strongly present in these two signs.

Every expression of anger can be described as ANGRY2, although one of the other signs might be more accurate or communicative in some contexts, such as WILD to indicate a more intense anger, which will be discussed later in this section. The level of intensity of the anger can be expressed by modifying different aspects of the sign, such as the speed and scope of the movement and the facial expression. Naturally, a larger amount of anger is represented with a larger and faster movement and by further "compressing" the face (raised upper lip, eyes narrowed and frowned eyebrows).

As I mentioned before, the two signs overlap semantically, however, ANGRY1 has a specific semantic domain and application in the language, nonetheless. The difference between the two signs is best shown by figure 3a and 3b. These figures are taken from a scene out of *The Pink Panther*. The participants were asked to identify emotions in this scene. In the scene, the woman buys a Christmas tree from the "villain" of this episode. When he notices that the woman carries a lot of money, he raises the price. The first time this happens the woman is taken aback and surprised, but after the price was raised twice, she becomes angry (figure 8a). After he takes all her money and takes off, she expresses this anger by waving her fist at him (figure 8b). The participants described the first clip as ANGRY1 and the second clip as ANGRY2.



Figure 8a: Stimulus for ANGRY1



Figure 8b: Stimulus for ANGRY2

ANGRY1 thus indicates anger that is not acted upon, although it often becomes evident that the subject is angry from the facial expression, similar to the English word "mad". ANGRY2, on the other hand, mostly indicates that a person expresses anger through (body) language.

This interpretation of ANGRY1 and ANGRY2 is further supported by the fact that ANGRY1 often appears in combination with the sign SHOW (3a), while it never appears in combination with

BECOME (3b), unlike ANGRY2, which co-occurs with both SHOW (4a) and BECOME (4b), suggesting that ANGRY2 is something that manifests externally, rather than internally.

- (3a) SHOW ANGRY1 FROWN  
'[He] shows his anger by frowning.'
- (3b) \* FEEL BECOME ANGRY1  
'[He] can feel [himself] becoming grumpy.'
- (4a) FEEL BECOME ANGRY2  
'[He] can feel [himself] becoming angry.'
- (4b) INDEX ANGRY2 SHOW ANGRY2  
'He shows that he is angry.'

Although ANGRY1 thus often means that the anger is not expressed, it can also occur as a stage of anger after the source of the anger has been expressed or shared. In this case, the anger has not been resolved completely, yet the subject walks away from the confrontation. In (5) the participant narrates a *Tom & Jerry* scene. Jerry got very angry with Tom and his friends because their party was disturbing his sleep. After having destroyed their instruments he walks away from the confrontation, which is described by the participant as (5).

- (5) ANGRY1 STAY SEE OK WALK STAY  
'[Jerry] angrily walks [back to his hole], looking back to see if [they] remain quiet.'

In some cases, the two signs complement each other (6a), (7). In (6) the participant provides a context in which he expresses his anger through sign language, complemented by showing anger through facial expression. The fact that "ANGRY1" is optional in this sentence is shown by (6b), in which he further explains the context provided in (6), leaving out ANGRY1.

- (6a) NOT LIKE INDEX TAKE NO LEAVE SHOW ANGRY2 ANGRY1 NOT LIKE SILLY  
'"I don't like it when you take [my book]", I show that I am angry, "I don't like it, you are mean".'
- (6b) NOT LIKE YOU ALWAYS SILLY BECAUSE YOU TAKE BOOK INDEX ANGRY2 NOT LIKE SILLY WHY GO.AWAY  
'I don't like this, you're always mean, because you take my book from me, I'm angry, why are you so mean, go away!'

A similar construction is shown in (7), where the participant provides an example of an aggravating situation: people disturb him when he is trying to study.

- (7) TALK PROBLEM DISCUSS BUT INDEX STAND TAP HIT RIGHT WRONG.  
'[People] discuss a problem, so I stand up and tap them [on the shoulder], then they hit me; is that right? It's wrong.'

PLEASE INDEX POSS BEST FRIEND ANGRY2 ANGRY1 SHOW INDEX \*name\*  
REPORT SHOW CALL

'My best friend shows them that he is angry, scowls at them and threatens to call out [to a teacher] and report them.'

Interestingly, in both (6a) and (7b) ANGRY1 directly follows ANGRY2. This strategy is somewhat reminiscent of reduplication, which indicates that the action was spread out over a long period of time, as in (8). This strategy was also observed in ASL by Fischer (1973), who established “a continuation of some kind” as one of the functions of reduplication in ASL. Another process that can be compared to the strategy shown above is serialising verbs, which often represents the order of the events in the story, as is shown in (9).

- (8) BOY SEE STAY WORK TRY WORK WORK  
 ‘The boy sees [the Christmas trees] and decides to stay so he can work there. He tries hard and works hard.’
- (9) CAT INDEX WALK STEAL MONEY COPS PUZZLED  
 ‘The cat walked there, then stole the money, leaving the cops puzzled.’

For (6a) and (7) these functions suggest that the signer was either angry for a long time, or first communicated his anger, upon which he became silent and frowned at the trigger of his anger. However, in both contexts neither of these seem accurate. Combining ANGRY1 and ANGRY2 seems to serve as an intensification of the anger, or as a narrating technique to provide a more detailed description of the event. This is a solely intuitive suggestion however, which needs further investigation or discussion with the Deaf community.

ANGRY1 also occurs as a two-handed sign, in which case it expresses a larger amount of anger, within the semantic borders of ANGRY1, thus frowning intensely and being on the brink of expressing anger, while keeping one’s composure. Furthermore, it can refer to a person who is always negative, as is shown in (10).

- (10) PERSON ALWAYS NOT SMILE ALWAYS THINK NEGATIVE ANGRY1 MEAN THAT NOT SMILE SHOW FACE NEGATIVE  
 ‘When a person never smiles and always has negative thoughts, (s)he is grumpy, meaning (s)he has a negative look.’

## 3.2 LOCATIONS OF ANGER SIGNS

The two locations for anger expression signs are further discussed in this section. Besides the two signs discussed above, there are two signs from the anger lexicon that are articulated at the chest area and four that are articulated at the head.

### 3.2.1 Anger signs at the chest area

The chest area is the container of emotions in GSL, which is best demonstrated by the sign EMOTION.WELL.UP (flat-c-hand slowly moving diagonally up over the chest with wiggling fingers) (figure 9).





Figure 9: *EMOTION.WELL.UP*

It is optionally signed with two hands, palms facing the chest. The handshape changes to a 5-hand in this variety (figure 10). This indicates a higher amount of anger and is accompanied by a bigger scowl.



Figure 10: *EMOTION.WELL.UP, two-handed*

*EMOTION.WELL.UP* is a coat hanger sign; not carrying a clear meaning without a facial expression. The facial expression can either be happy, in which case it means something along the lines of “my heart was swelling with happiness”, or angry, in which case it carries the meaning of “a burning sensation of anger in the chest”.

It is not surprising, then, that many of the signs denoting anger are located at the chest area. *FURIOUS* for example shares a lot of parameters with *EMOTION.WELL.UP*: they have the same location and path. However, the handshapes differ slightly. *FURIOUS* starts in an s-hand, palm facing up, and moves into a flat-c-hand (figure 11). It is articulated with much more intensity than *EMOTION.WELL.UP*: the hand moves up very quickly. The sign has a flexible initial location and scope. The different initial locations are shown in figure 12.

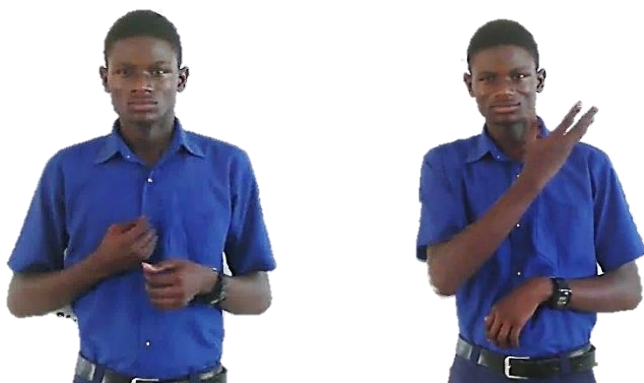


Figure 11: *FURIOUS*





Figure 12: FURIOUS: Initial locations of the hand

EMOTION.WELL.UP exists in ASL as well (Grushkin 1998), whereas the GSL sign for FURIOUS is not documented for ASL. Given the history of GSL, as discussed in the introduction, FURIOUS is likely a newer sign, possibly based on EMOTION.WELL.UP.

Both signs are rare in the context of anger expression, however. FURIOUS came up a few times during a session in which I worked with movie stimuli. EMOTION.WELL.UP was never signed in “spontaneous signing” during my sessions; it was a result of elicitation. Interestingly, the sign that was elicited was FURIOUS. The participant was unfamiliar with this sign and suggested EMOTION.WELL.UP instead, as is shown in (11). It should be noted that this participant became deaf at the age of nineteen. Therefore, he speaks English almost fluently and signs mainly sign supported English to me. This example thus might not follow GSL word order, however it is nonetheless a relevant example to demonstrate the semantics of the sign. This example shows that EMOTION.WELL.UP expresses a type of anger that slowly grows larger in the chest area.

- (11) EMOTION.WELL.UP MAYBE EXAMPLE MAYBE SOME SOME BODY DO THING.PL NOT INDEX NOT FEEL NOT FINE BECOME ANGRY2 START SMALL  
 ‘Boiling anger means for example when somebody does something you do not like, you do not feel fine and become angry, starting with a small amount of anger.’

A possible explanation for the signs not occurring frequently in my sessions could be that many of the data collection methods focused on acting out scenarios or explaining other people’s anger. FURIOUS and EMOTION.WELL.UP (with an angry facial expression) seem to focus on the personal experience of anger, which might not be “assigned” to somebody else’s anger. Indeed, these signs express the feeling and the process of becoming angry, rather than the expression of anger. Two different participants described FURIOUS as ‘FEEL BECOME ANGRY’ as well, suggesting that this sign implies the process of becoming angry, focussing on the feeling, rather than the expression. Furthermore, one participant compares it to a feeling of discomfort, or unresolved anger in the heart, which suggests that it represents a personal feeling (12).

- (12) Participant: FURIOUS EMOTION.WELL.UP ... BECAUSE FEEL PAIN BUMP.HEAD SEE (facial expression: angry)  
 ‘Anger is boiling up, because [he] feels the pain from the bump growing on his head, so I look angrily [at the person who hurt him].’
- Researcher: FURIOUS MEAN WHAT  
 ‘What does furious mean?’
- Participant: EMOTION.WELL.UP FEEL gesture.at.stomach BECOME ANGRY  
 ‘Anger welling up, feel [yourself] becoming angry.’

Participant: ...BUT 1SG SIGN POSS HEART NO PEACE SAME NO PEACE HEART  
 SAME NO PEACE  
 ‘...but I sign “my heart has no peace (there is unresolved anger in my heart)”.’

Note that the participant uses FURIOUS and EMOTION.WELL.UP interchangeably in (12), suggesting that the signs are synonyms. It should be noted that in this example FURIOUS was articulated slowly. Although both signs have semantic nuances distinguishing them from each other, they do seem interchangeable when they are both articulated with the same amount of speed.

Example (12) also shows that in order to imply that a person expresses the anger that has been building up, EMOTION.WELL.UP can be combined with other signs in the anger lexicon that denote expression of anger, such as ANGRY.

Another sign not directly expressing anger, but closely related to the anger lexicon in form and meaning is GRUDGE (move the bent-5-hand in a circular motion over the left or opposite chest, the eyes -almost- closed) (figure 13a). Alternatively, the motion can be smaller and more centred around the heart, with the fingers bent further, almost into an e-hand (figure 13b). The semantics of this sign are similar to that of JEALOUS, which will not be further discussed in this section, since this sign shares nothing with signs from the anger lexicon. GRUDGE does share features with the anger lexicon, as is described below. Furthermore, GRUDGE came up during elicitation sessions using movie stimuli with a focus on clips where one of the characters was angry. For these reasons GRUDGE is briefly discussed here, even though it not a direct ‘member’ of the anger lexicon.

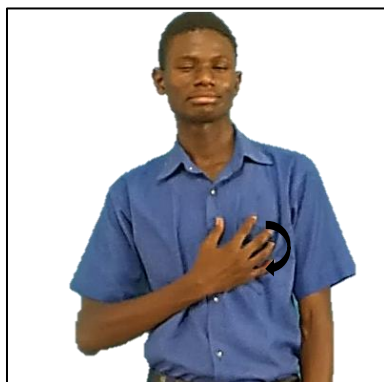


Figure 13a: GRUDGE, with 5-hand



Figure 13b GRUDGE with e-hand

The parameters GRUDGE shares with signs from the anger lexicon are the location, the bent-5-hand, which only appears in anger expression in GSL, to my knowledge, and the facial expression: narrowed eyes, corners of the mouth pulled down, eyebrows down. The location of the sign is not specific to anger expression, but rather to emotion expression in general. The circular movement is different from anger expression, however. It seems to suggest that GRUDGE is a stirring feeling in the chest area, or heart area. Moreover, the repetition of the movement suggests that this emotion stays in the chest area, without necessarily growing bigger or smaller, or going up or down.

GRUDGE is signed to mean that somebody is feeling a grudge, because of something somebody else has, that they desire. Oftentimes this includes materialistic matters, however the sign also implies that another person is ‘better’ at something, resulting in a grudge. A classic example of a scenario that would provoke a grudge in GSL is when one person is rich, and the other person is poor (13). This example suggests that GRUDGE has a ‘negative’ effect on people, in the sense that it provokes people to harm others in order to get what they desire.

- (13) STAND SEE LUCKY MONEY BIG GRUDGE INDEX MAD 1SG HIMSELF INCREASE  
 BOOK CHECK APPEAR INCREASE DOLLAR FOUR

‘He sees how much money the woman has and wants the money for himself. He goes mental and increases the price to four dollars.’

Although money is often the source of this feeling, other materialistic desires can provoke it as well. In (14) the character is jealous of his competitor’s Christmas trees, which are bigger and more beautiful than his own Christmas trees.

(14) PUZZLED SEE GRUDGE. HIMSELF GO ELECTICITY CAT POSS HOUSE WHERE GO ELECTRICITY THINK WHAT OFF CUT?

‘What he sees shocks him and he feels jealous. He thinks of a plan to cut off the electricity at the cat’s house.’

Example (14) shows that GRUDGE optionally indicates that the agent is planning on acting on the feeling of jealousy, by either taking the envied object from the person, or by sabotaging or otherwise harming the person.

Finally, GRUDGE is signed to mean that somebody is feeling a grudge due to a feeling of being inferior to somebody else, for example when somebody is better at something. This translation was provided by one of my translators. Unfortunately, there is no example of this usage in the database.

### 3.2.2 Anger signs at the head

There are four signs belonging to the anger lexicon that are articulated at the face, most of them referring to the facial expression that accompanies anger.

FROWN has two varieties, which are used interchangeably by signers: FROWN1 and FROWN2. FROWN1 is most widespread and frequent. This sign is regarded as the "official" sign (taught by the deaf high school). It is pronounced with x-hands, palms facing each other. The sign is located in front of the face, the hands moving up and down alternately (figure 14a). The x-hands represent the frowned eyebrows. The facial expression is similar to that of other words in the anger lexicon, however, the mouth corners are pulled down slightly less. Some signers sign FROWN1 with t-hands (figure 14b).

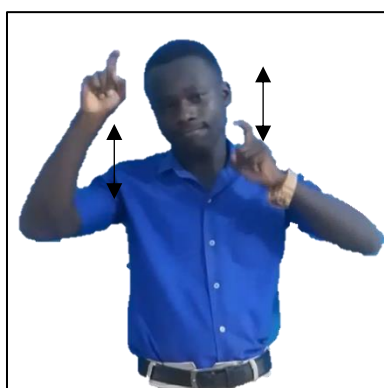


Figure 14a: FROWN1, with x-hands



Figure 14b: FROWN1, with t-hands

FROWN2 is signed with the same handshape as FROWN1 (x-hands), however, is located over the eyebrows. The wrists are bent and pulled up, in order to turn the index fingers to point down, mimicking the eyebrows going down (figure 15). It is optionally signed in neutral space.



Figure 15: FROWN2

FROWN indicates a small amount of anger, which is only shown by frowning, or lowering the eyebrows, as is demonstrated by (15) and (16). It can best be translated as ‘to scowl at someone, without expressing the anger in any other way’. This is further demonstrated by the fact that FROWN is often combined with SHOW (16) and IDENTIFY (16), indicating that this type of anger deals with showing anger, rather than feeling anger or acting on it. This definition is further illustrated by figure 15, which is the clip that is described in (17). The intensity of the anger is not expressed in this sign, it can imply that a person is disappointed, as in (15), as well as that somebody is really angry and at the verge of expressing that anger, such as in (17).

- (15) FACE FROWN2 SHOW FROWN2 SOME THING.PL DISAPPOINT  
‘[A person] showing disappointment in something by frowning/scowling.’
- (16) “FACE SHOW FROWN”  
‘He is scowling.’
- (17) ANGRY2 SHOW ANGRY2 NOT HUMBLE NO ANGRY2 NOT HUMBLE SHOW  
ANGRY2 BUT IDENTIFY FROWN2  
‘He shows that he is angry and will not keep his anger in by scowling.’

The fact that FROWN1 and FROWN2 can be applied in the same context is shown in (18). This data is from a session where participants were asked to identify the emotion that the character in the clip was experiencing. The clip features Butch (the cat) scowling Tom (the other cat) because Tom accidentally hit his head with a hammer. ANGRY1 is also applied to this context. It is not surprising that these signs can be used in the same context, as both ANGRY1 and FROWN are iconic, representing a scowl. FROWN is much more specific than ANGRY1 however, as it only expresses “to glare at someone”, while ANGRY1 has a much broader application.

- (18) ANGRY1 FROWN2 OR FROWN1  
‘[He is] angry, scowling, or frowning’

FROWN can also be part of a description of a person expressing anger, as it can be combined with ANGRY1 (19) or ANGRY2 (20). In this case, it emphasises that the agent has a very angry facial expression. The following examples show that FROWN does not exclusively imply that a person is only scowling. Similar to ANGRY1, it can also add expressiveness to an event involving ANGRY2.

- (19) ALL WET THINK FROWN2 HARD ANGRY1 SHOW PEOPLE SEE PAIN ANGRY1  
FROWN1  
‘[The cat is] completely soaked and showing his anger by scowling.’

- (20) MAYBE FIRST ANGRY1 ASK PLEASE INDEX WANT SLEEP WHY YOU DRUM NOISE LOW no DRUM BECOME ANGRY2 ANGRY2 BUT IDENTIFY FROWN2  
 First, he was only frowning and asking politely: “I want to sleep, why are you making noise, please lower the drums”, but then he becomes angry and scowls at them.’

The final sign with a similar meaning is SCOWL (figure 16). It only occurs twice in the dataset. It is an iconic representation of the compressed facial expression that accompanies anger. Its form is very similar to CALM, which will be discussed below. The only differences are the facial expressions and the locations of the signs.



Figure 16: SCOWL

This sign indicates that a person is getting angry and is planning on expressing this anger (21), however, the sign cannot imply that the anger is expressed. Note that (21) is signed in sign supported English.

- (21) FACE SCOWL MEAN PERSON HIMSELF PLAN TO ANGRY2  
 ‘When someone frowns, it means that the person is planning to get angry with someone.’

Besides signs that describe the expression of anger via facial expression, GSL also has one sign that specifically refers to verbally expressing anger to somebody, namely WILD (figure 17). It is a two-handed initialised sign: the w-hands move from the sides of the head forward, palms facing each other. There are two varieties of the movement: one fluent, fast movement or three short, intense pulses forward.

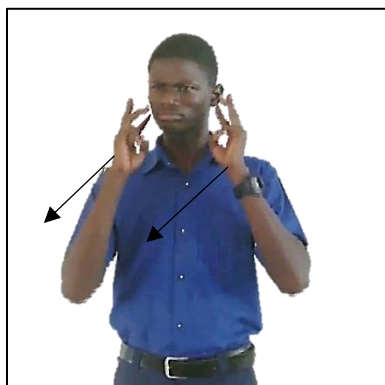


Figure 17: WILD

The meaning of WILD within the anger lexicon is shown in (22), (23) and (24), all expressing a different, yet related component of the meaning. (22) and (23) focus on the intensity aspect; WILD indicates a large amount of anger. (24) indicates that the anger is acted on. This interpretation is further supported by (25) and (26). WILD insinuates a higher amount of anger than ANGRY2, as is shown in (23).



- (22) WILD FEEL BECOME ANGRY2 SERIOUS  
‘Wild means to feel [yourself] becoming seriously angry.’
- (23) WILD MEAN ANGRY2 MORE MORE WILD  
“‘Wild” means to become very angry.’
- (24) INDEX WILD PLAN ANGRY2 WITH INDEX  
‘I go wild and plan on expressing that I’m angry with him’
- (25) ANGRY2 RUN WILD RUN BUST.DOOR  
‘[She gets] angry and runs [to the house]. Wild with anger she bursts through the door’
- (26) WILD MAYBE EXAMPLE TEACH PERSON SEE THAT STUDENT CHEAT TEST BECOME WILD  
‘An example of a person becoming wild is when a teacher sees that a student cheats.’

The main thing that distinguishes this sign from ANGRY2 is that WILD does not focus on the feeling of anger, instead of on the way a person reacts to the feeling. It indicates getting (irrationally) angry with somebody, which often escalates to violent situations. For this reason, the sign often co-occurs with ACT and MISUNDERSTAND, which both insinuate a physical expression of anger (27) and (28). MISUNDERSTAND indicates that a person is believed to be foolish or not have understanding and is mostly signed when somebody is angry with that person.

- (27) HUMAN SEE ACT WILD THINK INDEX ANGRY2 SERIOUS INDEX NEG LIKE  
A person sees something that makes him/her act wild, because he is seriously angry about something he does not like.
- (28) BECAUSE INDEX ALWAYS MISUNDERSTAND TO.DO ANGRY2 WILD  
Because he always acts foolish, so then what? I become angry with him.

WILD is also associated with “danger”, since the person the rage is directed at is at risk of getting hurt. The meaning of WILD in the anger lexicon is best illustrated by a description of a short clip from *Tom & Jerry* (figure 18). The freeze-frames show the stages of anger the black cat goes through, after being covered by bricks and hit with a plank several times (while still buried in bricks) by Tom.



Figure 18 “DANGER WILD”

Combining ANGRY2 and WILD puts emphasis on the feeling, as well as on the consequences of this feeling (29). Unlike the sequencing of ANGRY1 and ANGRY2, ANGRY2 WILD implies a set order:

a person feels angry first, upon which he becomes wild. For this reason, \* WILD ANGRY2 is ungrammatical.

- (29) WILD BECAUSE MOTHER MOUSE SMALL CALL TO MOTHER SAY THAT CAT ALWAYS PARTY IN HOUSE MOTHER ANGRY2 WILD  
 ‘[The mother] went wild, because the small mouse called her to say that the cat always has parties in the house. The mother gets angry and goes wild.’

WILD is mainly associated with anger among the Deaf in Ghana, since it is the most productive usage of the sign, however the broader meaning of the sign can best be translated to English as ‘to lose your mind’ or ‘go wild’, illustrated in (30). English and GSL thus adopt the same metaphor for this concept, even though ASL does not have a sign meaning ‘wild’ that is associated with anger, assuming that Grushkin’s analysis of anger discusses all types of anger.

- (30) WILD MEAN THAT MAYBE EXAMPLE WHEN INDEX LOSE BECOME WILD SEARCH SEARCH WHERE WILD  
 ‘Wild means for example losing something and look for it for a long time, making you become wild.’

FRUSTRATE has a lot in common with WILD, although it is used much less frequently. Both signs are initialized, two-handed and located at the head, although the exact location differs. It is a two-handed, initialised sign. The f-hands are brought up towards the chin, palms facing each other. They move alternately backwards in a small, circular motion, the middle fingers touching the chin. The sign never occurred during the acting out of scenarios, nor with picture or video stimuli. This sign was accidentally elicited, when the target of elicitation was TALK.OUT, which has the same properties, except the fingers are retracted to form an open o-hand when the hands are brought to the face. Furthermore, the sign is symmetric rather than alternated (figure 19).



Figure 19: TALK.OUT

The hand movement of FRUSTRATE shows subtle variation; in the first variety, the movement is realised from the arms, while keeping the hands still (figure 20a). Alternatively, the hands follow the movement, meaning that the fingertips are slightly pointed forward when the hands move to the front and pulled backwards when the hands move back (figure 20b). The facial expression differs accordingly to the amount of anger. Figure (a) is semantically close to the English ‘frustrated’, thus expressing a small amount of anger. Figure (b) expresses a larger amount of anger: the eyes are closed, the nose is pulled up and the teeth are shown. These non-manual markers intensify the anger.



Figure 20a: *FRUSTRATE* variety 1    Figure 20b. *FRUSTRATE* variety 2

The location of this sign is interesting, as it differs from the other locations that we have seen in the anger lexicon thus far. It shares its location with signs that involve the mouth, such as TALK, INFORM and SPIT, suggesting that this sign involves interaction of some kind, which is why I initially interpreted it as “to complain”, or “to be angry with...”.

(31) and (32) are the only examples of *FRUSTRATE* in the database. As briefly mentioned earlier, the sign has a lot in common with *WILD*. The participant provided a similar scenario for both signs, as well as the same definition. The fact that *FRUSTRATE* is signed near the mouth, instead of at the mind, might suggest that this sign focusses less on the mind-lose-aspect. The example provided by the participant does not fully support this hypothesis however, since *CONFUSE* is a mental verb in *GSL*.

- (31)    **BECOME ANGRY2 SERIOUS MEAN THAT FRUSTRATE**  
 ‘Frustrated means becoming seriously angry.’
- (32)    **FRUSTATE AGAIN MAYBE EXAMPLE IF INDEX INGE LAPTOP LOSE OR CONFUSE SEARCH NOT FIND BECOME FRUSTRATE**  
 ‘Frustrated also means for example when Inge loses her laptop and becomes confused and frustrated because she can’t find it.’

The sign is semantically similar to *WILD*, as can be seen when comparing (32) and (33), in which the trigger for the anger is the same, namely not being able find something.

- (33)    **WILD MEAN THAT MAYBE EXAMPLE WHEN INDEX LOSE BECOME WILD SEARCH SEARCH WHERE WILD**  
 ‘Wild means for example losing something and looking for it for a long time, making you become wild.’

As was mentioned before, *TALK.OUT* is similar to *FRUSTRATE* in many aspects. Since this sign did appear in natural speech, specifically during the acting out of scenarios, this sign comes with more context in the database. During my data collection sessions, it was only signed by one signer, in one session, however. Interestingly, the participant provided the same meaning for *TALK.OUT* as the meanings provided for *WILD* and *FRUSTRATE* by other participants, namely **ANGRY2 SERIOUS** “seriously angry”.

My interpreter translated *TALK.OUT* as ‘to talk out against someone’, meaning to express anger through language. Therefore, the sign overlaps semantically with *WILD* in that they both mean “to express serious anger”, however, *WILD* does not specify the method of expression, whereas *TALK.OUT* is restricted to lexically expressing anger. Furthermore, (34) and (35) suggest that *TALK.OUT* is a more communicative or calm way of expressing anger, while *WILD* is more out of control. Another participant suggested that it is an emotion, specifically sadness, suggesting that *TALK.OUT* means to express being upset in general.



- (34) INFORM HEY POSS WIFE KISS HUSBAND ANGRY2 WIFE TALK.OUT  
 ‘[Somebody] informs [the husband] that his wife kissed [somebody else], so he gets angry and goes to his wife to air it out.

HEY HEAR INDEX PLAY INDEX ACCEPT WHY KISS WHY ANGRY2 TALK.OUT  
 ‘Hey, I heard you (best friend) were playing/cheating and you (wife) accepted [his affection], why did you kiss? I’m angry’.

- (35) LAST PAST PARTY FINISH PLAY HAPPEN NO ANY FRIEND SAY THAT BECOME ANGRY2 WITH MY WIFE  
 ‘A friend of mine told me that my wife [was cheating] at a party, so I became angry with my wife.’

TALK.OUT UNDERSTAND KNOW ACCEPT SORRY KNOW INTOXICATE  
 INTOXICATE FINISH  
 ‘We talked it out, I understand now and accept [their] apology. I know they were drunk, so that was the end of it.’

Besides WILD, one other sign is located at the side of the head. It was translated as ‘going crazy’. The sign only appears once during the data sessions. The ‘five-hand extend second’ (the ring finger extended) is brought to the side of the head in a quick motion, touching very briefly just above the temple before it is brought back to its initial position with the same speed (figure 21).



Figure 21: GO.CRAZY

The rapid movement of GO.CRAZY suggests that something changes or happens in the brain quickly, causing the person to lose control or do things they would normally not do. In (36) the participant describes that Jerry is so angry that he starts to break the cats’ belongings. (36) shows that ‘going crazy’ is a result of (or largely the same as) going wild. They are used to describe the same type of anger, namely very intense anger.

- (36) SEE FINE WILD BREAK. GO.CRAZY ANGRY2 RUN WALK SEE PULL.DOWN  
 DESTROY WALK AWAY PULL.DOWN  
 [He] sees [that they continue to be loud] and gets wild, breaking [their things]. [He] goes bonkers, runs over [to them], yanks [instruments from their hands] and destroys them.’

### 3.3 DISSIPATING ANGER

GSL has three signs to indicate that someone's "negative" emotion is growing smaller and one sign to indicate that someone needs to calm down, which is specifically assigned to anger: CALM.DOWN. The other three can appear with the emotions fear, pain, and anger. There is a fourth sign that implies a negative emotion grows smaller: RELIEF, however, since this sign only appears in combination with fear and pain in the database, it will not be further discussed here.

Since these signs refer to the emotional experience of anger, it would be expected that they are articulated at the chest area, assuming that they follow the pattern previously discussed. Furthermore, the signs for fear, pain and anger are all linked to the chest area. Indeed, one of the signs is articulated at the chest area: CALM, which has two different varieties. Interestingly, the other two signs are articulated at the face, more specifically the chin.

The three signs referring to dissipating anger are CALM, HUMBLE and PEACE. The latter two signs originate in other semantic domains, but CALM specifically means "to calm down after a 'negative' emotion". Although all three signs carry their own semantic nuances, the fact that they can all be used in the same context is shown in (37) and (38). (37) was the conclusion or summary of a story a participant told about an aggravating situation. Based on the iconicity of the signs, one could argue that they are signed in the order of the process of anger growing smaller, CALM1 expressing the transition from being angry to being calm and PEACE meaning "not angry anymore". In this section all three signs will be discussed, including the original meaning as well as its relevance for anger expression of the signs HUMBLE and PEACE.

(37) ANGRY2 CALM HUMBLE PEACE

'He got angry, then calmed down and was peaceful again.'

(38) INDEX \*name\* WARN TALK BEHAVE STOP CALM PEACE INDEX OK HUMBLE

'I warned him to behave and told him to stop and then we calmed down, so I let it go/stopped talking.'

CALM is signed in two different ways, which I will refer to as CALM and CALM.DOWN. CALM has two varieties. The first is most widespread and most frequently used. It is regarded as the 'official' sign for CALM. The sign has a unique initial handshape, which I will refer to as the "slightly bent open b-hand". Both hands are horizontally placed at both ends of the left chest area, palms facing each other, whereupon the hands are brought to touch each other in the middle (figure 22a). The optional facial expression belonging to this sign is a relieved facial expression: the lips slightly parted, soft eyes. Applying this facial expression adds expressiveness to the feeling. In the second variety both palms face down and the movement is downwards as well (figure 22b).

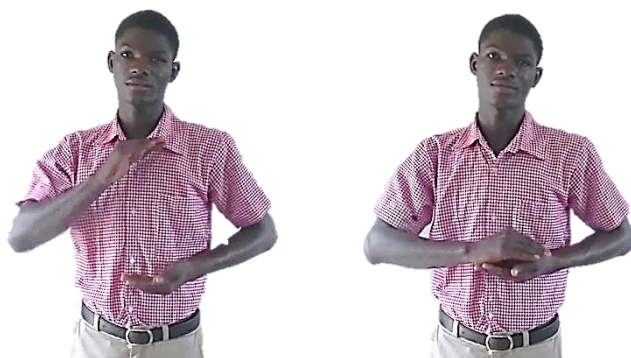


Figure 22a: CALM, variety 1

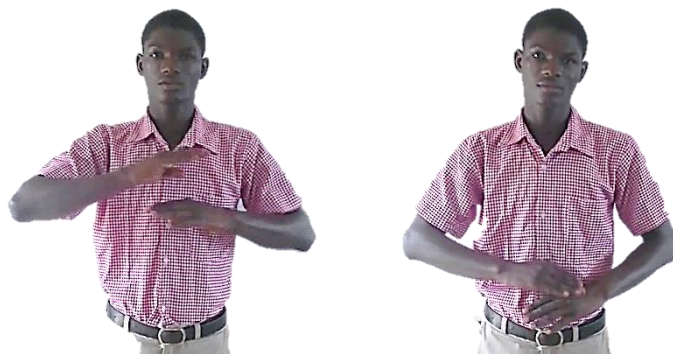


Figure 22b: CALM, variety 2

CALM.DOWN originates in the ASL sign YOU\_CALM\_DOWN, described by Grushkin (1998) (see section 1.4.3). It shares its handshape and movement with the second variety of CALM. Contrary to the other varieties it is signed in neutral space and is optionally repeated (figure 23).



Figure 23: CALM.DOWN

CALM represents a “negative” feeling growing smaller in the chest. It is used to express relief after emotions such as *worry*, *anger* and *(jump)scares*.

This sign came up in elicitation. A deaf teacher from the United States executed the elicitation; I asked her to give the definition and examples of different emotions and asked the participants to provide the sign that best described that emotion. The elicited example is shown in (39).

- (39) Research assistant: EXAMPLE MY SON FLEE INDEX WORRY BACK HOME INDEX  
FEEL GOOD  
"For example, after my son flees I worry a lot. When he comes back home, I feel good."
- Participant: CALM

Interestingly, CALM is also used to express that somebody ‘keeps their cool’. After showing a clip from *Tom & Jerry*, where Jerry helps a cat to get back at Tom (their common enemy at that point in the movie), one of the participants described Jerry as looking calm (40).

- (40) CALM BECAUSE GIVE BECAUSE TEACH HAPPY  
"[Jerry feels] calm because he gives [advice], and he is happy because he teaches [the cat something]"
- HAPPY HAPPY EXAMPLE MEAN HAPPY BUT INDEX FACE CALM  
[He is] happy, but he has a poker face"

WHAT FACE IDENTIFY LUCK THING.PL CALM WAIT BETTER FOR INDEX ONE  
HELL H-E-L-L INDEX ONE HELL LUCK GOOD HAPPY

"He looked calm, better wait for [the cat] to feel bad/ get hurt, which would make him [the mouse] feel good or happy."

What is interesting about this, is that this shows a certain amount of restraint of emotion, while in the case of "feeling calm after being angry". In the latter case, the subject is relieved, because (s)he no longer has to carry a certain emotion. Therefore, it could be interpreted as "no longer having to restrain an emotion", which is the opposite interpretation than the interpretation described above.

Another sign denoting a dissipating negative emotion is PEACE; a two-handed, symmetric sign with b-hands. The finger tops touch each other at the chin, forming a triangle. The hands then move down and away from each other, following the triangle shape (figure 24).



Figure 24: PEACE

Peace has a variety of specific meanings. Nevertheless, they all fall into a broader semantic category, namely "feeling good after discomfort". The first meaning is most likely the original meaning of the sign, or at least its most common usage, since this is the example a participant provided when I asked him to give me an example sentence with PEACE, without giving him any context (41). Note that this example is signed in sign-supported English.

(41) WAR EUROPE GHANA PRESIDENT HAVE KNOWLEDGE DEEP CALL TWO  
COUNTRY TOGETHER TO MAKE PEACE.

'If there is a war between Europe and Ghana, the president has the wisdom to call the two countries together and make peace'

PEACE is also metaphorically used in the anger lexicon. Its function in the expression of anger is shown in (42). "Not having peace in one's heart" is compared to feeling angry in this sentence.

(42) ...BUT 1SG SIGN POSS HEART NO PEACE SAME NO PEACE HEART SAME NO PEACE  
ANGRY2 SERIOUS SAME ANGRY4

'But I also sign "my heart has no peace", which means the same as seriously angry, or rising anger.'

The application of this sign in the context of anger is very rare, however. Besides (42), it never occurred in spontaneous data. (42) was provided by one of my participants when I asked him if the sign could be used to express (the dissipation of) anger. This usage is likely an extension of another metaphorical meaning of PEACE, as in shown in (43). In this example, it expresses a feeling of being satisfied or

happy, often indicating that a negative emotion is dissipating or being replaced. Emotions this sign can be combined with are discomfort (hunger) (44) or pain (45).

- (43) MOUSE SEE CHICKEN SEE PUZZLED SMELL SWEET 1SG WANT EAT BRING PEACE  
 ‘The mouse sees the chicken and thinks: "that smells good, I want to eat it", so he takes it and is satisfied.’
- (44) ANGRY2 HUNGRY FAST ASK EAT BRING EAT PEACE FINE  
 A person is angry because he is hungry, so he asks someone to bring food fast. After he eats, he is satisfied.
- (45) SATISFY HEAVY BREAK STOMACH.PAIN NOT COMFORT ROLL WAIT LAY.DOWN GAG WAIT PROBLEM CAN.NEG LAY.DOWN FOOD.DOWN FINE ... FOOD.DOWN PEACE  
 ‘[When your] stomach hurts and [you are in] discomfort, you roll [in bed] and wait, [then you] almost vomit and have problems lying down. A while later the pain dissipates, and you feel fine again. Then the food goes down and you are at peace.’

The sign HUMBLES is similar to the sign PEACE in that they share a location and are semantic neighbours. HUMBLES is a two-handed asymmetrical sign, positioned at the chin. The dominant hand is either an h-hand (figure 25) or a 5-hand (figure 26), palm oriented to the left (for right-handed signers). The non-dominant hand is a 5-hand, the lower arm positioned horizontally, palm oriented inwards (towards the signer). The non-dominant hand is stationary, although it optionally shifts the palm orientation to face down, slightly lifting the lower arm (as in figure 25). The dominant hand moves down from behind the non-dominant hand at forwards towards neutral space in a fluent motion (figure 25).

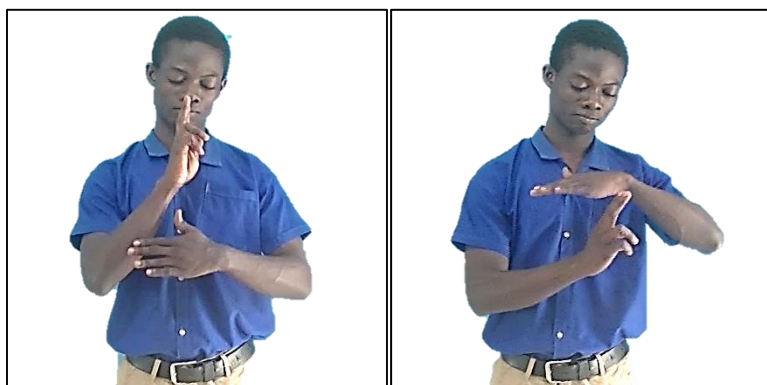


Figure 25: HUMBLES, with h-hand



Figure 26: HUMBLES, with 5-hand



The gaze is down the head optionally bows a little, which suggests that the sign has an aspect of respect to it. Indeed, HUMBLE originally means to be silent and obedient. In (46) the participant is describing a scene of *Tom & Jerry* where the cats are silently waiting for Jerry to come out of his mouse hole (figure 27).

- (46) STAY SILENT HUMBLE  
‘[They are] not making a sound.’



Figure 27: Stimulus for HUMBLE

This meaning can be applied in anger expression when the signer wants to express that a person is unable to speak, or is silenced in some way, for example by an argument a person cannot come back from or because a person got a door slammed in his or her face (47) or scared into silence (48). In (47) the participant fingerspelled HUMBLE as PEACE, suggesting that the two signs can, in this case, be applied in the same context

- (47) ANGRY2 HUMBLE FACE HUMBLE P-E-A-C-E HIT.FACE HUMBLE  
‘First he was angry, but he was silenced by being hit in the face.’
- (48) OPPOSITE ON OPPOSITE ANGRY1 HUMBLE ANGRY2 FEAR SOME THING DANGER  
‘Two people are on opposing sides, one is angry, the other silent and scared, because he is facing danger.’

Unlike PEACE, HUMBLE can also express that a person does not show his anger. NOT HUMBLE thus refers to the opposite: not staying silent or hiding the anger, as is shown in (48). In this example, the participant explains a clip from *Tom & Jerry*. where Jerry is very angry at Tom because he is having a loud party in the house while Jerry is trying to sleep. Therefore, he does not stay silent, or humble, but becomes angry.

- (49) ANGRY2 SHOW ANGRY2 NOT HUMBLE NO ANGRY2 NOT HUMBLE SHOW  
‘[Jerry] shows that he is angry and does not stay silent.’

## 4 DISCUSSION

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### 4.1 PATTERNS

The anger lexicon of GSL is extensive and diverse. Nevertheless, various patterns can be assigned to the signs discussed in the previous chapter. All signs at the chest area have an upward movement,

suggesting that the metaphor ANGER IS UP is present in GSL. This is further supported by the fact that all signs that refer to dissipating anger have a downward movement.

The signs at the head can be divided into two categories: signs at the temple, or side(s) of the head and signs in front of the face. The signs at the side(s) of the head always quickly move away from the head. They express intense anger, mostly linked to the function of the mind in the expression of anger. The movement away from the body suggests that anger leaves the body. The located, which is shared with mental verbs, possibly reflects the mind temporarily leaving the body, thus not thinking about one's actions. One-handed signs located in front of the face always have an inward palm orientation, whereas the two-handed signs at face have palms facing each other. These signs all reflect the facial expression that accompanies anger. FROWN2's handshape (x-hands) and movement over the eyebrows reflect furrowed eyebrows. SCOWL is an iconic representation of the lowering of the eyebrows and the raising of the (upper) lip(s) when a person is angry. According to my translator the upper hand, moving down, reflects the eyebrows, while the lower hand, moving up, reflects the lips. The movement of FROWN1 is less iconic. However, the handshape (x-hands) seems to reflect the eyebrows as well.

Anger expression is always accompanied by the same facial expression: eyebrows and lip corners down, as well as narrowed eyes. A variety on the lips is pulling the upper lip up, baring the teeth, which is only applied to ANGRY2 and WILD. In the case of WILD, however, the eyes are not narrowed. Instead, they are wide. WILD further distinguishes itself from other signs in the anger lexicon because it is an initialised sign, thus being pronounced with w-hands. Initialising signs is very common in GSL, outside of the emotion lexicon. None of the basic emotions (HAPPY, ANGRY, SAD, and SCARED) are initialised. Admittedly, these signs all originate in ASL. It could have been expected, however, that GSL speakers integrated some of the signs with initialised handshapes over time, for example, ANGER with an a-hand. We did see this adaption in HUBMLE, which was signed with either a 5-hand or an h-hand. Other signs outside the emotion lexicon also experienced this transformation, such as APPLE, KILL, and EXAMPLE, which respectively signed with an a-hand, k-hand, and e-hand. In ASL APPLE is signed with a closed x-hand, and KILL and EXAMPLE both with d-hands (Lapiak 2021). A possible explanation for keeping the ASL handshapes for the emotion domain is that the handshapes in metaphorical or iconic expressions intuitively carries more meaning than non-metaphorical signs and therefore preserved their original handshapes.

## 4.2 METAPHORS AND ICONICITY

Sign languages have different parameters than spoken languages and are inherently less arbitrary and thus more iconic than spoken languages. However, there is a clear similarity between the signed and spoken languages' motivations behind adopting the body or body parts in (metaphorical) anger expressions and the mapping of anger expression on the body.

Like anger expression in many spoken, anger signs in GSL seem to be largely inspired by the physiological experience of anger discussed by Ekman, Levenson, & Friesen (1983; 1990), Levenson, Carstensen, Friesen & Ekman (1991) and Kövecses (2000, 2010). Generally speaking, the fact that all anger signs are located at the body, shows that anger is considered a personal, bodily experience in GSL. The language has literal physiological phrases for anger, as well as more abstract, almost metaphorical anger expressions. The GSL phrase FACE RED 'red face (from anger)' shows the physiological experience of heat rising to the cheeks when a person is angry (50). Apart from this phrase, no literal physiological terms express anger. It should also be noted that this phrase is not commonly used in GSL and only appeared as a narration of the Tom & Jerry cartoon. The cat in question did not have red cheeks, however, suggesting that this phrase is part of the GSL anger expressions.

(50) Participant 1: FACE RED MEAN WHAT  
‘What does “red face” mean?’

Participant 2: MEAN WORSE FIGHT. SAME FACE RED SAME FURIOUS  
It means someone is so angry they will fight. Red face means the same as furious.

Nonetheless, iconicity of the anger signs often also reflects a physiological aspect of anger. All signs located at the face, except for TALK.OUT, represent the facial expression that is (involuntarily) triggered by anger. ANGRY1, FROWN1, FROWN2 and SCOWL are all used to describe the emotion anger. Most of them are iconic representations of furrowed eyebrows. Not all signs use the same parameters to reflect an aspect of the facial expression however, except for their shared location. ANGRY1 and SCOWL apply the movement (hands or fingers horizontally towards each other), whereas FROWN1 applies an iconic handshape (the x-hand) and FROWN2 applies both the movement (over the eyebrows) and the handshape (x-hands) to represent the facial expression. The abstract emotion anger is expressed via a more concrete bodily experience in these signs.

Similarly, the facial expression signers use when they sign about anger can be viewed as embodiment. Adding the angry facial expression to any sign or phrase can change the meaning of the phrase, without adding extra signs. Without angry facial expression, (51) would mean ‘the boy runs up to meet him’. Adding the angry facial expression changes the whole nature of the event. A physiological response to anger (furrowed eyebrows, narrowed eyes and so on) is in this case used to linguistically express the emotion anger.

(51) BOY RUN MEET  
‘The boy runs up to meet [him] angrily’

Facial expression is one of the parameters of the phonology of sign languages. It is known to add meaning, as is the case with emotions and sensations (Pfau & Quer 2010) as well as name signs (Lutzenberger 2018) for example. Furthermore, facial expressions can carry grammatical information (Siple 1978; Swisher et al. 1989), such as negation in ASL (Benitez-Quiroz et al. 2016) and an indication of polar questions (Pfau & Quer 2010; Benitez-Quiroz et al. 2014). Facial expression in sign languages is thus not inherently an example of embodiment. In the case of emotions and sensations, however, I would argue to categorize it as (related to) embodiment, since they add the meaning of anger by showing a bodily action that accompanies anger.

The more abstract, metaphorical representations of physiological experiences can be found in the movements of the anger signs. WILD and GO.CRAZY both indicate that anger influences the mind. Their movement away from the head might imply that the person does not use their mind, or common sense, anymore when they are in this stage of anger, thus losing their mind. Although both signs move away from the head, the direction differs. GO.CRAZY has a movement to side, which more clearly reflects the ‘mind-lose-aspect’ than WILD, which has a movement forward. This observation suggests that signs with a movement away from the location for mental verbs represent the experience of making rash decisions when a person is angry. This aspect of the signs is reflected in the example provided in section 3.2.2, where Jerry destroys the cats’ musical instruments, without regarding the consequences of those actions (the wrath of the cats and the damaged instruments). Both WILD and GO.CRAZY are examples of ANGER IS INSANITY. Considering the semantics of WILD (losing control and blowing up at someone) its movement possibly reflects anger spilling out of the body. This theory is in line with other metaphors of anger, such as ANGER IS PRESSURE INSIDE THE BODY and anger’s movement from the stomach upwards. ANGER IS PRESSURE INSIDE A PERSON is not directly visible in the anger lexicon of GSL, however the semantics of many of the anger signs do seem to indirectly imply that anger is seen as a pressure. EMOTION.WELL.UP, FURIOUS show that anger rises up in the body and WILD and GO.CRAZY represent this (slowly) built up anger leaving the body with intensity (represented by the



fast movement). ANGRY2 shows the entirety of this process: anger starts at the stomach, moves upwards and leaves the body above the chest.

Signs with an upward movement over the chest area represent the feeling of ‘anger’ traveling up the body as it becomes larger (ANGRY2, EMOTION.WELL.UP, FURIOUS, CALM). This feeling is the motivation behind the location of EMOTION.WELL.UP and FURIOUS as well.

EMOTION.WELL.UP starts at the stomach, while the initial location of FURIOUS is the bottom of the chest area. FURIOUS thus is located higher on the body and expresses a higher amount of anger. Moreover, FURIOUS ends much higher on the body than EMOTION.WELL.UP. FURIOUS ends next to the chin, while EMOTION.WELL.UP only goes up in front of the chest. The handshape of FURIOUS possibly metaphorically refers to a bodily experience as well. The opening of the fist in FURIOUS likely represents a feeling of anger being thrown into the chest area. THROW has the same handshape as FURIOUS as well as a similar movement. Therefore, the experience of being furious is likely metaphorically linked to the manner and speed of throwing an object. This theory is supported by the semantics of the sign: FURIOUS represents a type of anger that suddenly appears and escalates to rage quickly and unavoidably, the same way a thrown object arrives quickly and unavoidably. A similar feeling inside the chest can be seen in the movement of CALM. CALM reflects the physiological feeling of anger growing smaller in the chest (variety 1) or anger going down, back to the stomach (variety 2). Although GRUDGE is not technically part of the anger lexicon, I will analyse it as a reference to this same bodily sensation. The sign has a circular movement at the chest area, which refers to an ongoing negative feeling inside the chest (not growing bigger or smaller). This sign refers to a need to act on jealousy in a less sudden way than WILD for example. Participants often used this sign to mean that somebody is planning to do something bad to the person they are jealous of in order to get the thing they are jealous of, such as stealing or sabotaging. This sign is located at the chest, and not at the mind, because a person deliberately plans to do something bad, rather than lose control.

Although these signs are iconic representations of a physiological feeling inside the body, they are also exemplifying the metaphor ANGER IS A FLUID INSIDE A PERSON/CONTAINER, which is a (near)-universal metaphor of anger (Kövecses 2010). The aspect ‘HOT’ in ANGER IS A HOT FLUID INSIDE A CONTAINER is clearly visible in EMOTION.WELL.UP. This movement was interpreted by Grushkin (1998) as an iconic representation of boiling water, thus an example of the metaphors ANGER IS A HOT FLUID IN A CONTAINER and ANGER IS FIRE. Since EMOTION.WELL.UP is the only sign representing these metaphors in GSL, I do not consider them part of GSL metaphors, especially since this sign is a ‘borrowing’ from ASL (and is likely part of the original set of ASL signs taught to the Ghanaian deaf people by A. J. Foster). Moreover, if the existence of this sign in GSL resulted in the presence of these metaphors in the minds of GSL signers, the expectation would be that other anger related signs would have adapted this metaphorical aspect as well. Interestingly, the metaphor HEAT IS INTENSITY does exist in GSL: the sign HOT has an intensifying function. An example of this metaphor is the phrase PAIN HOT ‘very intense pain’. This intensifier HOT has a very restricted usage, however, and cannot co-occur with signs from the anger lexicon, further suggesting that ANGER IS FIRE is not a productive metaphor in GSL. Unlike EMOTION.WELL.UP, FURIOUS is unique to GSL, therefore, this sign tells us more about the iconicity and metaphors in anger expression. Although FURIOUS shares features with EMOTION.WELL.UP (location and path), this sign does not show the same metaphorical aspects of boiling water, heat, or fire. Apart from possibly FACE RED, ANGER IS HEAT seems absent in the rest of the anger lexicon of GSL.

Although all the widespread metaphors are connected to the body, not all metaphors in GSL are body metaphors. Besides ANGER IS INSANITY, the sign WILD can be interpreted as an example of ANGER IS A DANGEROUS ANIMAL as well. WILD expresses two meanings in GSL: "wildlife" and "angry". The usage of the sign to indicate anger is far more productive than that of ‘wild animals’. Eliciting “wild” (W-I-L-D) results in the sign for anger. This could be influenced by the fact that the data sessions were about emotions, however. It is unclear which meaning is the source and which is the target (the metaphorical expression). Given the fact that abstract things are often expressed through metaphors that find their

source in concrete objects, it would be expected that the anger expression is the metaphorical expression, based on the behaviour of a wild animal. Either way, the link between wild animals and anger point to the existence of the mental link between the two in GSL signers.

ANGER IS A GROWING THING in GSL can best be explained by the first variety of the sign CALM. The path of this sign represents anger growing smaller in the chest after it is expressed. PEACE suggests the presence of ANGER IS WAR in GSL, although there are no other signs pointing to this metaphor. PEACE can also be used in the context of war in GSL. Unexpressed anger can thus be indirectly interpreted as war. Note, however, that in the emotion lexicon PEACE focusses on the feeling of relief after the anger is expressed. ANGER IS WAR should thus not be interpreted in the more literal sense in GSL. There is no evidence that the metaphor applies to conflict or anger expression in GSL.

The four universal metaphors for intensity, namely HEAT, QUANTITY, SPEED and PHYSICAL STRENGTH suggested by Kövecses (2010:161) are difficult to apply to GSL. As previously mentioned, sign languages have different strategies for intensifying words or phrases. GSL has intensifiers such as VERY, HOT and MORE. Only VERY was applied to a phrase including anger expression. MORE does occur with other signs from the emotion lexicon, such as SAD and SCARED, therefore, it is possible that it can also be signed to intensify anger. MORE is a GSL example of a metaphorical intensifier, of the category quantity. Another strategy for intensifying signs is the adjustment of certain parameters of the signs, such as modifications of the speed, repetition of (part of) the movement, or adjustments in the size or scope of the sign. These modifications could be regarded as belonging to the intensifier metaphors QUANTITY and SPEED.

### 4.3 GSL COMPARED TO ASL

Many of the signs for anger find their origin in ASL, which is why ASL and GSL share the main two locations for anger expression: the chest area and the face. Besides this shared lexicon, GSL has unique signs for the expression of anger on both locations, which poses interesting questions about the influence of language on experience and experience on language. Assuming that the GSL signs are newer than the ASL signs, there are two probable scenarios. The ASL signs learned by the deaf community in Ghana might have influenced their perception of anger: the focus on the head and chest area in sign languages influenced the way they thought about anger. Therefore, when the anger lexicon was expanded, new signs were assigned the same location. This theory is in line with the Whorfian linguistic relativity thesis: culture influences language and vice versa (Whorf 1956; Witherspoon 1977). The second scenario is that the overlap in locations of ASL signs and GSL signs can be attributed to the fact that the chest is a universal container of emotions (Kövecses 2010), therefore, the American Deaf community and the Ghanaian Deaf community might share the perception of anger because it is a universal perception.

ANGRY1 and ANGRY2 both exist in ASL as well as MAD and ANGRY, respectively. Therefore, these signs were likely introduced in Ghana by A. J. Foster in 1957. The semantic distribution of the two signs remained or developed similarly in both languages. In ASL, MAD is assigned less intensity than ANGRY, similar to spoken English, described by Grushkin (1998: 151-152) as a "moderate degree of anger". For the distinction of these signs, GSL focusses less on the amount of anger and more on the type of expression (see section 3.1). Grushkin (1998) claims that MAD is unique within the anger lexicon, in that it is an arbitrary sign, except for the fact that bent handshapes suggest metaphorical concepts, an idea that was first proposed by Wilcox (2004). Although it is also true for GSL that ANGRY1 has no metaphorical aspects, it cannot be regarded as "arbitrary", since it does have iconic qualities. First of all, the sign's location is the face. Signs located somewhere on the body often have iconic aspects in GSL. Second of all, the inward movement of the fingers can be compared to other signs at the same location in GSL, such as FACE FROWN. The source of iconicity can be interpreted in two different ways: either as the increased tension in muscles associated with anger, or as the lowering of the eyebrows and the slight raise of the upper lip (the thumb representing the lip and the other fingers the eyebrows). Since the facial expression is a source for many signs in the anger lexicon – such as the varieties of FROWN and SCOWL (see section 3.2.2), the latter interpretation is more probable. Another

iconic feature of ANGRY1 is the slow movement, which suggests that this type of anger is experienced either as less intense or as arising less suddenly than ANGRY2.

Grushkin (1998) discusses the connection between the mind and anger extensively, especially in the metaphors ANGER IS INSANITY and ANGER IS AN EXPLOSION. This link seems less present in GSL. The only two signs that represent the existence of this metaphor in GSL are WILD and GO.CRAZY. They have the same location as mental verbs, such as THINK and KNOW. GO.CRAZY seems to be an example of ANGER IS INSANITY in GSL. More examples or context of this sign is needed in order to understand its meaning and usage better, however. In the previous section WILD was discussed as either belonging to the metaphor ANGER IS INSANITY or to ANGER IS A WILD ANIMAL.

Another difference between ASL and GSL is the consistent link between the location at the body and the intensity of the anger. In ASL signs located at the stomach have the least amount of intensity, whereas signs at the head, or mind, represent the most intense types of anger. Although this pattern exists in GSL as well (anger starts at the stomach and grows more intense as it travels up the body), it is less consistent than in ASL. FURIOUS is located at the chest area, while it means ‘intense anger, that escalates quickly’. ANGRY1 and FROWN, on the other hand, are located at the face, while they refer to anger that can be held in.

#### 4.4 GSL COMPARED TO AKAN

There is seemingly little influence of the spoken language of the area in which the Deaf school is located on the anger expression in GSL. The anger lexicon in Akan is largely linked to growing weeds, which is not absent in GSL. Moreover, the mental link between anger and a burden, disease and food that seems to be present in Akan speakers (see section 1.4.3), cannot be found in signers of GSL based on their language: no metaphor exists that links anger to a burden, a disease or food in GSL.

Unsurprisingly, anger expression in GSL does have some common ground with anger expression in Akan. Both languages have metaphors referring to a boiling, upward sensation in the chest, although GSL seems to focus more on the movement of the feeling, whereas Akan seems to focus more on the manner: burning or boiling. Furthermore, both languages have varieties of the metaphor ANGER IS UP. In the case of Akan, growing weeds could be interpreted as something that goes up, and many of the anger signs in GSL have an upward movement. Other shared anger metaphors are ANGER IS A FLUID IN A CONTAINER and EMOTION IS A GROWING THING. Since all of these metaphors are universal, according to Kövecses (2010), it cannot be concluded that the Ghanaian culture influenced both anger lexicons in the same way.

Nonetheless, the Ghanaian culture does influence one of the semantic divisions in the anger lexicon of Akan and GSL. Both languages reflect the idea that anger is something that should be held in, as well as the anger that anger should be expressed, or let out. This is due to the cultural view on anger described earlier. In GSL the sign HUMBLE shows that anger should be held in in certain scenarios. In section 3.3 the function of HUMBLE to express that anger is held in is explained. Arguably ANGRY1, FROWN and SCOWL also represent this sentiment, since these imply that the anger is only expressed through a scowl, and is thus otherwise held in. ANGRY2, WILD and CALM on the other hand, represent the idea that anger should be expressed in order to feel good again.

## 5 CONCLUSION

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The aim of this thesis was to provide a detailed overview of anger expression in Ghanaian sign language and place the results in the context of body metaphors of anger. Furthermore, anger expression in GSL was compared to languages that could have had an impact on GSL, namely the local language Akan and the language GSL was originally based on, namely American sign language.

Anger expression in GSL can be divided into two categories, namely signs located at the chest area and signs located at the face or the head. Generally speaking, signs at the chest refer to the personal

experience of the emotion anger, whereas signs at the head refer to the expression of anger. Exceptions to this pattern are the sign ANGRY1 and ANGRY2. These are the most productive signs to express anger. They have a broader meaning and application than other signs in the anger lexicon. Especially ANGRY2 can refer to any type of anger expression, although it often implies that the anger is expressed. When anger is not expressed (and there is no emphasis on the type of anger experienced or expressed), ANGRY1 is most often used. These signs thus behave exactly opposite than they are expected to, considering the pattern. A pattern among signs at the head or face is that signs with an inward palm at the face often express that a person is or was frowning (at someone), without expressing the anger verbally. Signs that have a movement away from the head, on the other hand, imply that anger was expressed either verbally or through body language or punishment.

The anger lexicon is mainly inspired by bodily experiences that accompany anger. As expected, all parameters of anger signs contribute something to the discussion of embodiment of anger. The handshape is mostly an iconic representation of a visual aspect of anger (a scowl, tense muscles and so on). A rising feeling of anger in the chest, the facial expression when a person is angry and the experience of losing control (losing one's mind) are represented by both iconic locations and the movements of the signs. The location often, unsurprisingly tells us something about where the anger is experienced and how intense the anger is. The movement can also tell us something about the intensity of anger, although it also carries information about the experience or the feeling, such as how fast the anger grows. Heat rising to the head is expressed more literally through a somatic sign located at the face. The angry facial expression as a non-manual marker can indicate anger on its own (without lexical anger terms). The universal tendency to embody words for anger expression is thus confirmed by the anger lexicon of GSL. All anger signs are located at the body: either at the head or face or at the chest area. Body metaphors in anger expression in GSL are ANGER IS A FLUID INSIDE A PERSON/CONTAINER, ANGER IS INSANITY and possibly ANGER IS PRESSURE INSIDE A PERSON. Other GSL metaphors of anger include ANGER IS UP, ANGER IS A GROWING THING, and ANGER IS WAR. WILD possibly points to the existence of ANGER IS A WILD ANIMAL in GSL. Arguably, intensity metaphors QUANTITY and SPEED exist in GSL as well, in the form of scope and speed of articulation.

Anger expression in GSL was compared to ASL and Akan. Since ASL and GSL still have a lot of overlap in their lexica, many of the anger signs still exist in both languages. The languages expanded their anger lexica separately from each other, however. Interestingly, these editions to the lexica mainly focus on the mind in both languages. ASL has many expressions that belong to the metaphor ANGER IS AN EXPLOSION. This metaphor does not exist in GSL. GSL, instead, puts emphasis on the idea that a person loses their common sense, or mind, when they are angry. Unsurprisingly, anger expression in both languages also still has a lot in common. First of all, many signs at the chest area have an upward movement. Secondly, in both languages intensity of the anger increases as the signs are located higher on the body. The focus is different however: ASL emphasizes the increasing of the amount of anger, whereas GSL emphasizes an increase of the amount of anger expression. Furthermore, GSL is less consistent in the link between location and intensity. The focus on the amount of anger expression in GSL suggests that the Deaf culture of Ghana lays more emphasis on this. It is also interesting to see that GSL did not take over some of the metaphors belonging to ASL anger signs when they expanded the anger lexicon. ANGER IS FIRE in EMOTION.WELL.UP was not carried onto new signs for example. The relatively large differences between the anger lexica of the languages support the theory that emotion lexica are partly influenced by universal physiological experiences and partly by the speakers' culture.

After comparing anger expression in Akan to GSL it can be concluded that although the usage and broad underlying ideas about anger are similar. In both languages anger is viewed as something that needs to be expressed in order for the anger to grow smaller again. On the other hand, anger should be held in certain contexts. Nevertheless, the anger lexica of the languages are very different from each other and the languages use different metaphors, except for universal metaphors such as ANGER IS A FLUID IN A CONTAINER. If we accept that culture influences the language, this finding suggests that the Deaf community of Ghana have a separate culture.

Due to their iconic nature, sign languages tell us a lot about the connection between emotion and the body.

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