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The Impact Of Translation On Constructed Action and Constructed Dialogue In ASL Texts

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The Impact of Translation on Constructed Action
and Constructed Dialogue in ASL Texts

by

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Bachelor of Arts, Dallas Baptist University, December 2012

A Thesis

Submitted to the Graduate Faculty

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This thesis, submitted by Beth C. Gray in partial fulfillment of the requirements for the Degree of Master of Arts from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

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ABBREVIATIONS¹

1	first person
2	second person
ASL	American Sign Language
BT	Bible translation
CA	constructed action
CACD	constructed action and/or constructed dialogue
CANA	clear, accurate, natural, acceptable
CD	constructed dialogue
LWC	language of wider communication
NCSLGR	National Center for Sign Language and Gesture Resources
NEG	negation
POSS	possessive
PRO	pronoun
WPM	words per minute

¹ For non-reported constructed utterance coding abbreviations, see Table 3 on page 60.

ABSTRACT

Depiction, a phenomenon similar to iconicity, involves representing what something “looks like or is like” (Streeck 2008:289). Because depiction is used more heavily in sign languages than spoken languages (Dudis 2007), people interpreting or translating spoken/written texts into signed languages struggle to use depiction naturally (Thumann 2011). This thesis analyzes constructed action (CA) and constructed dialogue (CD), two types of depiction in which the signer’s hands represent those of a discourse participant. Using Tannen (1989) & Metzger’s (1995) framework of non-directly-quoted CACD and Quinto-Pozos & Mehta’s (2010) degrees of CA, I examine differences between narratives originally composed in ASL and narrative segments from Genesis and Exodus that have been translated into ASL, all of which were signed by Deaf users of ASL. This analysis indicates that translated texts are slower and use less non-directly-quoted CD than non-translated texts. Measuring depiction can improve the naturalness of these and other translations.

CHAPTER 1

INTRODUCTION

The primary purpose of this thesis is to show how depiction in general (and constructed action and constructed dialogue, specifically) are essential elements of translations in signed languages. Depiction in signed languages is a resemblance-oriented communication strategy which maps details of meaning onto the face, body, or hands of the signer. While depiction is a crucial component of sign language discourse, few endeavors to translate material into signed languages begin with a study of that language's natural depiction patterns.

There is a large body of research about constructed dialogue (CD) and constructed action (CA), two types of depiction in which the signer's hands are mapped to the hands of a story participant to show things that participant is doing. In CD, the signer uses head position, body position, eye gaze, and/or facial expression to represent the dialogue of another person; in CA, the signer uses the body parts above and the hands to represent the actions of another person. CD is best understood as one type of CA, and both use similar strategies to report (or, more precisely, construct) the behaviors of a participant in a discourse. While such utterances have been called "reported dialogue," (or, for

CA, “reported action”) Deborah Tannen (1989) and Melanie Metzger (1995) make the case such utterances are rarely directly reported. They capture this tendency by using the term “constructed” and developing a system for categorizing instances of CA and CD (CACD) that, logically, could not have been directly reported. This thesis looks at the presence of CACD in both translated and non-translated American Sign Language texts as one indicator of depiction use.

While there have been several studies about the functions of CACD in American Sign Language (ASL), there has been little application of these concepts to an interpreting context, and no application of these concepts to a translation context. This paper follows the convention of referring to real-time, unrehearsed conveyance of concepts between languages as interpreting. Translation happens over a longer period of time and typically results in a static text (whether written, video, audio, etc.), giving the translator time to make revisions (Bureau of Labor Statistics, U.S. Department of Labor 2018). This thesis contributes to the discussion of depiction by pointing out differences in depiction use between translated and non-translated texts, and contributes to the field of translation studies by identifying CACD use as an indication of naturalness.

This study analyzes three non-translated texts and six translated texts in ASL. The six translated texts are taken from sections of Genesis and Exodus in

the Christian Bible, translated by Deaf Missions, Deaf Harbor, and Deaf Go.² The three non-translated texts are narrative stories told by Deaf storytellers, and the six translated texts are narrative stories translated by Deaf teams and performed by Deaf on-screen signers. Two trends surfaced from the analysis of these texts. First, the translated texts are approximately half of the speed of the non-translated texts. Second, the translated texts contain less constructed dialogue that could not have been directly reported. The method used in this study reveals differences between translated texts and non-translated texts, suggesting specific ways for these three translation teams to more closely approximate natural ASL. Additionally, replicating this study with other ASL texts and texts from other signed languages could help translators make their work more natural.

This study also revealed two ways to document CA and CD with more precision. First, instances of CACD were found embedded in CD, but there are no examples of CACD embedded in other types of CA; future studies could use this fact to problematize the analysis of CD as simply one type of CA. Second, while Melanie Metzger (1995) posited “non-human action” as one type of CA that could not be directly quoted, this study suggests that narrowing this category to

² This paper does not address the topic of whether these Bible translations are valid, in the sense of acceptance from the BT community, loosely defined as those organizations affiliated with the Forum of Bible Agencies International (Boswell 2017). This thesis uses the concept of translation in the looser sense of the word, marking an individual or group’s expression of the meaning of a text from one language into another language.

“non-animate action” would better delineate whether a CA utterance could have been reported or not.

I begin with an introduction to translation, depiction, and constructed utterances in Chapter 2. Chapter 3 describes text selection, coding frameworks & criteria, and annotation conventions. Finally, Chapter 4 discusses the results from the data, properties of CACD, differences between translation organization, differences between translated and non-translated texts, and opportunities for further work in this field.

CHAPTER 2

LITERATURE REVIEW

There is a wealth of information in the field of translation studies, and many researchers have studied depiction focusing on constructed action (CA) and constructed dialogue (CD), but few studies have explored the intersection of these two topics. This literature review situates the present study in the contexts of translation, depiction, and previous CACD studies.

2.1 Translation

This section overviews translation studies, Bible translation, sign language Bible translation, and the principle of naturalness as it relates to Bible translation.

2.1.1 Translation studies

This topic of this study falls partly under the purview of translation studies, the broader field of research about the theory and practice of translation. The roots of this field are ancient, but “increased globalization, growing mobility of people and commodities, and the spread and intensity of armed conflicts in recent years have established translation and interpreting more firmly in the public consciousness” (Baker & Pérez-González 2011). The world’s growing

interconnectedness has led to more translation, and consequently, more scholars studying various aspects of translation.

When translating a text from a source language (embedded in a source culture) into a target language (embedded in a target culture), there are several choices presented to a translator or translation team. Often, they are guided by goals unique to that specific translation team, much in line with Vermeer's "skopos theory" which orients translation around the aims of the translator and the function of the text (1989). In this paradigm, many facets of the target language community must be considered for the translation to be effective. In modern-day translation teams, the team's skopos might be operationalized in the form of a translation mandate stating the translation's intended function, delimiting the target audience, and describing target culture elements that will impact the transmission of the message.

One continuum relevant to skopos has foreignization and domestication as its endpoints. Foreignization preserves as much of the syntax, discourse markers, and other information from the source text as possible, making the resulting translation somewhat opaque to native speakers of the target language, who could quickly identify that the text was not originally composed in their language. Such a target text is less natural, but also preserves the structure and detail of the original text. Domestication, on the other hand, adopts as much of the syntax, discourse markers, and cultural information of the target language as possible, and would be similar to a text originally composed in the target

language. It uses the target language's idioms, parlance, information structure, and discourse markers, and is easier for native target language users understand. These two forces have been discussed by translators for hundreds of years, but the specific terms foreignization and domestication were popularized by Lawrence Venuti (1995).

While Venuti advocated for a foreignizing approach out of respect for the source texts, the terms have been used neutrally in the broader field of translation studies. One translation skopos might call for a foreignizing translation, while another would make a domesticating translation more appropriate. For example, in a translation of Sun Tzu's *The Art of War* from Chinese into English, historians interested in ancient Chinese military strategy might benefit from reading a foreignizing translation of *The Art of War*. They are likely interested in the structure of the original, and they have ready access to information about the culture of the Spring and Autumn period of ancient China. A casual reader, on the other hand, might prefer a domesticating translation, which would be an easier read in English, but would lose some of the historicity and references to 5th century BC Chinese culture. Because of this, a team's skopos should be borne out in a translation mandate tailored to the intended audience of a translation; this mandate will then guide decisions in the translation process.

2.1.2 Bible translation

One community of practice pulls from the field of translation studies while also developing its own tools and standards: those who are involved in translating the Christian Bible into languages around the world, henceforth referred to as the BT (Bible translation) community. This community is unique in that practitioners from different countries and languages are translating essentially the same source text with similar purposes. While some general translation scholars might advocate a more reader-driven approach to deriving meaning from a text, contemporary Bible translators often seek to give readers access to interpretations similar to those which were available to the text's original audience. Rather than translating for personal enjoyment or as an academic exercise, most modern members of the BT community aim to produce a usable text which can contribute to the body of target language literature and facilitate religious practice among users of the target language.

Just as the diversity of translation goals gives rise to diversity within the field of translation studies, the aspects of similarity between translation projects (or teams of people who work to translate the Bible into a language or group of related languages) lead to some shared values within the BT community. One way those shared values are frequently expressed is through the acronym CANA. Each letter represents a translation principle that translations should seek to uphold: clear, accurate, natural and acceptable (Barnwell 1986; Larsen 2001).

Clarity addresses whether the text is easy to understand, or whether the intended meaning is apparent from the text. Often, a Bible translation team will show translated texts to a focus group from the language community, asking them comprehension questions to gauge whether the translation is being understood as intended. If the community does not understand clearly (due to missing contextual information, convoluted phrasing, or other factors), the translation team usually revises the text to address the source of those misunderstandings. Clarity is especially important to the BT community, as a reader who must laboriously disambiguate meaning will be less likely to use the text.

Accuracy has a dual meaning of accurately reflecting the content of the source text and of presenting ideas in a way that can be accurately understood by the target audience. One example of the latter meaning would be a mismatch of connotations associated with the words used in a translation. For example, Jesus describes parental love by asking “Which of you fathers, if your son asks for a fish, will give him a snake instead?” (Luke 11:11, New International Version). The implied meaning is that a loving father would not give their children something harmful when they asked for something good; this communicates well in the many cultures which see snakes as unclean and inedible. But for the Folopa people of Papua New Guinea, “offering a meal of a snake is like serving roast turkey at Thanksgiving” while “fish in Folopa territory are very small [and] make a meal of no consequence” (Anderson 1992:128). A

Folopa translation of that verse which did not take these factors into account would imply that a loving father would not give his children something better than they initially asked for. In this example, the translation would be accurate to the source text without being accurate to the target language and culture; hence, both elements of accuracy are essential.

Naturalness addresses whether the text follows the syntactic, grammatical, and discursive patterns of naturally occurring, non-translated use of the target language. This value is similar to domestication; a foreignizing translation would be considered unnatural by most Bible translators, while a domesticating translation uses more of the linguistic patterns of the target language. While most translation scholars would consider both foreignization and domestication useful in different contexts, the majority of the BT community would say that a “natural” translation is inherently more desirable than an “unnatural” one.

Acceptability, the final principle, refers to whether the target community is satisfied with a given translation, a factor which is more important to the BT community than to general translation practitioners and scholars. Acceptability is impacted by several non-linguistic factors; one example of this would be the selection of the on-screen signer in sign language Bible translation projects (SLBTs). SLBT team members (most of whom use the sign language fluently) work together to unpack the meaning of the source text and collaboratively determine wording and phrasing in the target text. Once the target language rendering is decided, one of the Deaf team members stands in front of the

camera and reproduces the agreed-upon signed text. While the translation is decided upon by the entire team, it is the on-screen signer whose face is visibly connected to the message when the text is published. So, for example, if the on-screen signer is known to physically abuse his family, the community might reject the translation as a source of moral direction. This is just one example of a factor impacting acceptability.

These four translation principles are promoted by BT practitioners from different continents and across different translation organizations. This agreement has been cultivated by international meetings about translation standards, such as the Forum of Bible Agencies International (2018), and academic conferences such as the Bible Translation conference co-sponsored by the Graduate Institute of Applied Linguistics (GIAL) and SIL International (D. Gray 2017). Although there is a certain level of agreement about these four principles, there is also ready acknowledgement from the BT community that it is impossible to have a single translation that is simultaneously fully clear, fully accurate, fully natural, and fully acceptable; these principles often conflict with each other.

Take the fish and snake example from earlier. If the translation team chooses to include a detailed description about cultural perceptions of snakes in the early Roman empire, they would be fulfilling the translation goal of accuracy well. However, if they continue to pepper the target text with lengthy explanations of source culture phenomena, the text will read like a reference book. Naturalness

will be lost as the team departs from the target language discourse patterns and storytelling norms, and clarity will be lost as the main thrust of the text is obscured by parenthetical asides. Here, accuracy would be improved at the cost of naturalness and clarity.

In these sorts of conflicts between translation values, teams are aided by having a clear skopos. By agreeing on a target audience and goals before beginning a translation, teams can make consistent decisions when they encounter conflicts in translation values. One example of this is intergenerational language shift, such as is being experienced by the Salasaka Kichwa in Ecuador. Their writing system is shifting from representing the voiceless velar stop [k] with the letters <qu> to representing it with the letter <k>. When preparing to publish a portion of scripture in the language, the translation team faced a predicament: if they kept the <qu> spelling, the translation would seem more dated, and the younger people might be less interested in using it, but if they changed the text to use the <k> spelling, they risked alienating older readers (anonymous, personal communication, July 2017).

In this situation, the team referred back to their skopos and translation mandate. Because one of their main goals was for the translation to be usable by the next generation of speakers, the team decided to adopt the <k> spelling in the text, while still accommodating older audiences by using literacy resources to help them transition to the newer orthography. BT teams must frequently

make judgement calls about which CANA principles to relax, and the translation mandate guides them in this process. Two translation teams might address similar problems in different ways if they have different skopos goals.

In many ways, the tension between the four CANA principles is productive. Letting any one of these four principles dominate would have a detrimental impact on the other three. But it is possible to use these four as a system to promote balance within a translation by preventing it from, say, being very clear but inaccurate.

2.1.3 Naturalness and sign language Bible translation

Of the four CANA principles outlined above, my study most closely addresses the value of naturalness, which is especially essential for Deaf communities' BT work around the world. Globally, there are groups of Deaf people from over 50 countries who are translating portions of the Bible into their native sign languages. They form a distinct segment of the BT community, though they share many principles with the wider BT community of practice. They have distinct values, and beliefs about translation work, and ways of engaging their communities. They often meet at an international level to discuss their work.

Many Deaf communities share the experience of living dispersed among more powerful language groups.³ In the United States, less than 5% of Deaf children have even one Deaf parent (Mitchell & Karchmer 2004), and around the world, few parents who can hear decide to acquire a signed language to communicate with their Deaf children. As a result, most Deaf children's acquisition of their first language happens outside of the home. These children are often forced to acquire some expression of the hearing community's spoken language of wider communication (LWC) in the school system, though they do not have full sensory access to it.

As Paddy Ladd observes, most school systems' insistence upon spoken LWC-based forms of communication and education can be best understood as linguistic colonialism at the hands of oppressors who can hear (2003:178). Although there is strong pressure for Deaf people to culturally and linguistically assimilate, the lack of full access to audiological stimuli is one factor that keeps signed languages around the world in use. Even Deaf people who choose to get cochlear implants often still identify themselves as being Deaf (and sometimes

³ One exception to this is shared signing communities, in which a high genetic rate of deafness in a village or town leads to a greater percentage of Deaf people in the community, and consequently, more non-Deaf people who choose to learn sign language. This often leads to similar language prestige between the local sign language and the spoken language (Kusters 2014). But compared to "national" Deaf communities, these groups do not usually have large Deaf populations, and Bible translation organizations usually prioritize larger language groups. This paper addresses Deaf community sign languages, formed when Deaf people are brought together (through education, the establishment of a Deaf association, etc.) and form a sign language that is used throughout a larger region.

stop using the implants altogether) because of the ease of communicating in a modality in which they can fully participate (Blume 2010). However, the sway of hearing colonialism in Deaf communities around the world has led to signed/spoken language status disparities globally.

Many Deaf communities are proud of their signed languages and value fluency in them, yet the spoken/written LWC is often seen as the language of academics, business, and religion. A Deaf person in the United States, for instance, might use ASL when having a conversation with a close friend, but would expect to use English when settling a parking ticket. Even in religious settings, many Deaf people go to religious services held in the spoken/written LWC with sign language interpretation. Indeed, the very act of translating prestigious religious texts into a signed language is often a disruption of typical language status norms. This tension can cause teams to drift toward the spoken/written LWC grammar and discourse structure, which can hurt naturalness.⁴

This language status disparity is accompanied by the misconception that sign languages are signed versions of spoken languages; in the United States, for example, people often think that there is an ASL sign for every English word, and that “learning ASL” means learning the signs that correspond with words in English. Later, when people learn that ASL does not have easy lexical-level translation equivalents for English articles, for example, they sometimes assume

⁴ See Mark Penner’s (2009) discussion of five translation SLBT teams.

that ASL is less specific than English or deficient in some way. This misconception is roundly refuted by sign language linguists (Klima & Bellugi 1979; Valli & Lucas 1992; Sandler & Lillo-Martin 2006) and Deaf community leaders (NAD Board of Directors 2008). However, the widespread preoccupation with lexical translation equivalents influences the teaching of ASL as a foreign language and the teaching of Deaf children.⁵

The overuse of these translation equivalents and the high status of spoken/written LWCs can lead translators to forgo sign language features that do not have ready translation equivalents in the LWC. In a meeting I attended, Deaf BT practitioners from 13 different southeast Asian countries discussed the problems each team was confronting. Throughout this discussion, a recurring theme was sign language translations following the spoken language syntax.⁶ See Figure 1 and Figure 2 for two different signs these international practitioners used to express this tendency.



Figure 1: SIGN.WORD.FOR.WORD



Figure 2: TIED.TO.LWC

⁵ In this thesis, further use of the phrase “translation equivalents” refers to the lexical level, unless otherwise specified.

⁶ APSDA’s Translation Workshop and Board Meeting in Kuala Lumpur, November 2015.

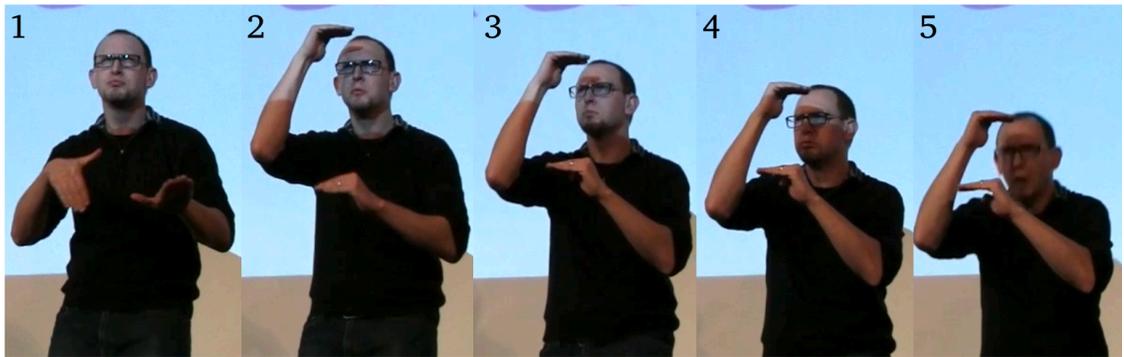
The movement in Figure 1 is small circles alternating out from the body. It is based off of a verb meaning “to sign”, but with the ASL handshape for WORD on the dominant hand (representing contamination from LWC words while signing). The movement in the sign in Figure 2 is repeated three times, from contra to ipsi.⁷ The non-dominant hand represents words in the spoken/written LWC, and the dominant hand represents signs being “tied” to the same structure. Both of these signs had negative connotations, and were discussed as undesirable.

The workshop participants were discouraged when they saw this tendency in their work, claiming that it was a departure from their respective natural signed languages. The workshop leaders encouraged them to push back against spoken language influence in BT work, and try to imitate the features inherent to their signed languages to the greatest extent possible. I was intrigued that Deaf practitioners from a variety of countries experienced the same problem and discussed it explicitly in terms of the CANA value of naturalness. In their work, the myth of lexical-level translation equivalents has manifested as an LWC bent that hinders their translations. Because this problem impacts BT practitioners from so many countries, it is a good topic of study for researchers affiliated with the BT movement. When teams have tools to break away from the overbearing spoken-language influence, they have freedom to make decisions that are consistent with their skopos, and can more fully pursue their translation’s goals.

⁷ “Contra” or “contralateral” refers to the side of the signer’s body opposite the dominant hand, and “ipsi” “ipsilateral” refers to the side of the signer’s body closest to the dominant hand (Valli & Lucas 1992:212).

2.2 Depiction

In a sign language Bible translation, this tendency to follow the structure of the spoken LWC poses the greatest threat to linguistic features like depiction, which are least able to be packaged into neat translation equivalents. Depiction can be seen in “words in signed languages [which] exhibit iconic mappings [and] have the ability to visually represent semantic components” (Dudis 2007:1). One example of this is the ASL classifier construction used in frames 2-5 of Figure 3.



Using the lexical sign for WALK (frame 1) followed by a depiction of a tunnel narrowing and the ceiling overhead getting closer to the depicted character’s head (frames 2-5). Here, the signer uses manual signs, affective facial expressions, and crouching body posture to animate the scene.

Figure 3: A classifier construction (Burke 2013)

Though this signed segment has a duration of less than two seconds, it contains quite a bit of semantic content that does not map in a one-to-one fashion to English. An English translation of that content might be, “The man entered the tunnel, but was surprised to find that the ceiling of the tunnel got progressively lower as he passed through. He was perplexed. By the end, he had to bend over just to progress through the tunnel.” This is a multi-propositional translation,

but it represents only one depictive sign; a one-word lexical-level translation equivalent for the one sign in frames 2-5 would be impossible here. Classifier constructions and other visual methods of depiction used in signed languages do not often permit simple translation equivalents in the LWC.

However, Bible translation teams often use a LWC source text. For example, all five of the SLBT processes described by Mark Penner (AUSLAN, LESCO, Japanese Sign Language, Kenyan Sign Language, and Filipino Sign Language) begin by consulting LWC translations of the Biblical texts (2009:13). Also, since the spoken/written LWC is often associated with formal, official, and religious domains, seeming departures from the written text can be met with skepticism from the community. And because most BT practitioners adhere to the tenets of Christianity, they might feel great pressure from their own belief systems and from the target culture's Christian community to translate very accurately; a translation that eschewed close lexical equivalents might be perceived as inaccurate or even blasphemous. But as this paper will discuss, native sign languages use depiction, and to depart entirely from the use of depiction would be to produce a translation that is dissimilar to the natural language use of the community. As Deaf members of the BT community acknowledge, "Deaf communities are more apt to use natural translations" (Deaf Development Group 2017). A target language community's use of the translated scriptures is part of most BT teams' skopos, and a better understanding of the interaction between depiction and translation will help them achieve it.

Ferdinand Saussure (1916) claimed that the relationship between a word's signifier (audible material) and signified (the concept being referred to) is necessarily arbitrary, or unmotivated by resemblance. More recent studies have refined this principle by exploring how both signed and spoken languages use depiction.⁸ This can be seen in English, for example, when a speaker lengthens a vowel in an utterance used to describe a prolonged length of time. Spoken language also use depiction in the visual-gestural channel: as Sotaro Kita notes in her cross-cultural review of co-speech gesture, "to date, there is no report of a culture that lacks speech-accompanying gestures" (2009:146). Linguists like Jürgen Streeck (2008) and Mandana Seyfeddinipur & Marianne Gullberg (2014) have written extensively on the use of gesture by people who can hear.

However, these spoken language depiction strategies are rarely represented in writing systems. Because of this, Deaf people are less likely to be fully aware of the linguistic meanings of these strategies, since many Deaf people's main interaction with the LWC is through written text. However, signed languages make much greater use of depiction strategies, because of their visual nature. One possible reason for their greater use of depiction might be that, of the stationary objects that human beings encounter, many are visible, while only some are audible. The nature of human experience of the world lends itself to the visual modality of iconic mapping with semantic meaning.

⁸ For a good review of resemblance strategies in both signed and spoken language from a relevance theoretic framework, see Daniel Eberle (2013).

Within sign language linguistics, the field of depiction is related to the more widely-recognized term “iconicity,” but the two terms do not fully overlap. Paul Dudis, whose work on depiction has most influenced my conception of it, defines iconicity as any sort of mapping between real-world things and signed utterances (Dudis 2007:1). However, this iconic mapping is not always depictive; that is, it does not always visually represent semantic components. He gives the example of the ASL word BIRD (Figure 4), which does have iconic mapping between the beak of a bird and the configuration of the dominant hand. But Dudis would say that this sign is not depictive, because it can be used for a wide variety of birds, regardless of beak morphology. A pelican, for example, which has a very different beak, could still accurately be called a BIRD; the sign is unanalyzable, and does not represent distinct semantic components.



Figure 4: BIRD (iconic, but not depictive) (Dudis 2007:1)

Depiction, instead, has the capacity to map details of meaning onto the details of a sign. An example of this would be the two signs used in a story of someone motorcycling up a hill, as seen in Figure 5.



MOTORCYCLE

RIDE.UP.HILL

Figure 5: Depicting a motorcyclist riding up a hill (Dudis 2007:14)

In both signs, the signer's facial expressions and body movements are depicting those of the motorcyclist. In the first sign, the signer is constructing the action of riding a motorcycle, and the second sign shows that motorcyclist going up a hill. The second sign is a classifier construction, with the dominant handshape representing the motorcycle and the non-dominant hand representing part of the hill.

By constructing the action of the motorcyclist in the first sign and keeping his dominant hand somewhat centered in front of his face in the second sign, the signer communicates that the referent riding the motorcycle in the first sign is the same referent riding the motorcycle in the second sign. Unlike BIRD in Figure 4, these mappings are meaningful; a slight change to the signs would change the meaning of the phrase. If RIDE.UP.HILL were signed with the dominant hand positioned just a few inches to the left, it would establish a new discourse participant riding a motorcycle to the left of the participant described with the sign MOTORCYCLE.

Signs like the second sign in Figure 5 have been described a variety of ways: verbs of motion and location, verbal predicates, lexical verbs, noun incorporation, classifier predicates, and depicting verbs (Supalla 1982; Schick 1987; Emmorey 2003; Liddell 2003; Sandler & Lillo-Martin 2006). This study uses a depiction framework and the typology Dudis developed to identify depictive utterances, a simplified version of which can be seen in Figure 6. This chart has existed at least since 2008 (Dudis et al. 2008); Dudis makes revisions to the depiction typology periodically, and names each chart by either version number or date. The iteration below is not the most recent, but the minor changes in the latest version (Dudis 2018) have not impacted the classification of CACD, which is the focus of this thesis. Because this chart covers every type of depiction, it provides a good overview of the wider field in which most research about CA and CD is situated.

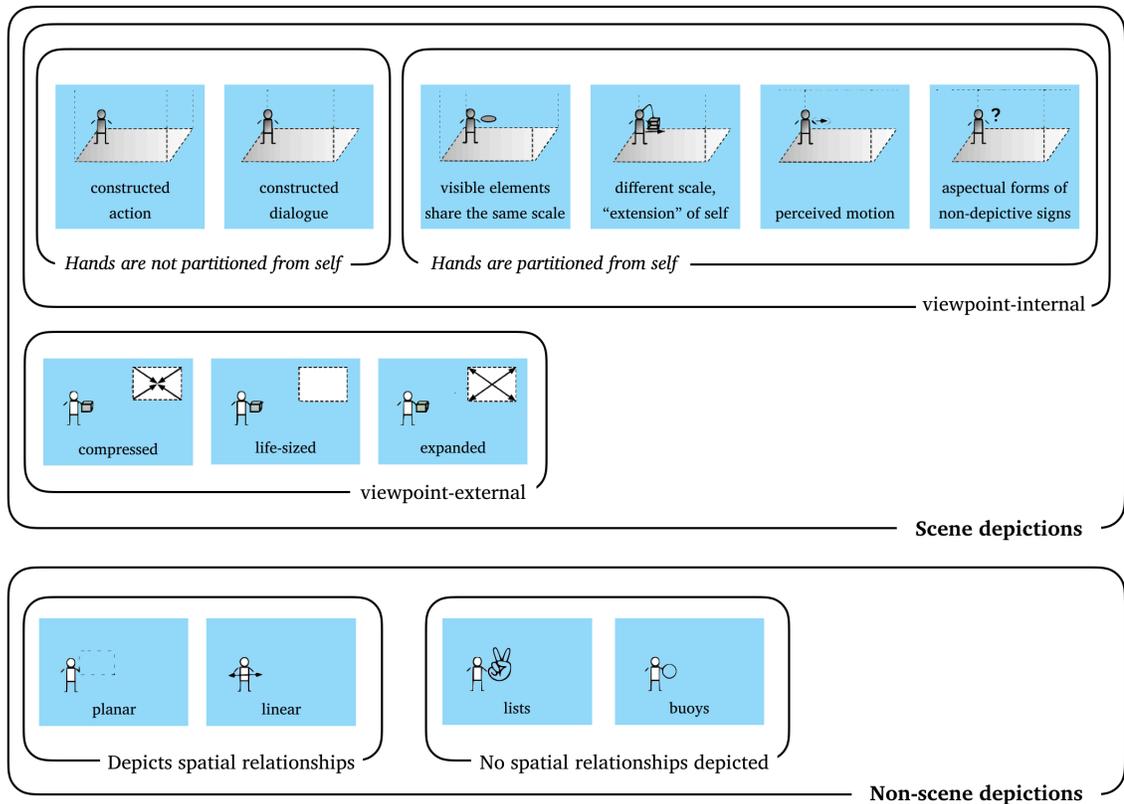


Figure 6: Depiction typology (adapted from Dudis 2016)

In the chart, each blue square represents a different type of depiction. The first major distinction between types is whether a three-dimensional scene is being depicted or not. Because humans are three-dimensional beings, depictions of what people do, see, and experience are three-dimensional often, but not always. Two kinds of non-scene depiction that still show spatial relationships are two-dimensional planar depiction, such as the layout of weeks on a calendar, and one-dimensional linear depiction, such as a timeline. Two other types of non-scene depiction do not depict spatial relationships at all. These are lists, where a signer uses the fingers of their non-dominant hand to represent entities and refer back to them, and buoys, where a signer's non-dominant hand

functions as a “conceptual landmark” by holding one position while the dominant hand continues producing new signs (Liddell 2003:223). Planar depiction, linear depiction, lists, and buoys are all considered non-scene depictions.

Within three-dimensional scene depictions, the next grouping is based on whether the signer’s viewpoint is inside or outside of the scope of the depictive utterance. In viewpoint-internal depictions, the signer’s deictic center (the point of reference for words like “here” and “now”) is representing the viewpoint of an animate participant in the depiction. In viewpoint-external depictions, the signer’s deictic center has no relationship to the scene being depicted. An example of this would be a description of an overhead fluorescent light. Figure 7 is a viewpoint-external depiction, and Figure 8 is a viewpoint-internal depiction.



Figure 7: Viewpoint-external depiction of a fluorescent light



Figure 8: Viewpoint-internal depiction of a fluorescent light

In the viewpoint-external depiction, the object is being depicted without a referential viewpoint. It is unlikely that the signer is intending to indicate that she is standing half-way through the ceiling. In the viewpoint-internal depiction, however, there is a viewpoint associated with the depiction; an animate entity is located below the object being depicted. It is important to note that the exact distance is not represented; this utterance would be grammatical even if the participant was six feet away from the light, although the signer's face is only inches away from her hands depicting the light. What is being depicted is the participant's location in relationship to another depicted element. Viewpoint-external depictions can happen at either a compressed, life-sized, or expanded scale.

Within viewpoint-internal depiction, the next distinction between types is whether the signer's hands are partitioned from the participant that the signer is representing. One of the underpinnings of the concept of partitioning is sign languages' great capacity for communicating different types of information through different articulatory channels simultaneously. Sandler and Lillo-Martin

claim that simultaneity of structure is “a property that is far more characteristic of sign languages than of spoken languages” (2006:7). Though simultaneity woven throughout the linguistic systems of most sign language, the feature has an especially interesting impact on depiction, as Figure 9 shows. This frame comes from a longer story, in which a man playing poker notices a stranger glaring at him from across the room.



Figure 9: Simultaneity in partitioning (Dudis 2004:235)

This frame shows a complex combination of depicted elements. The signer’s viewpoint and deictic center are that of the man playing poker. His eye gaze is directed at the stranger, and his non-dominant hand is constructing the action of holding playing cards. The signer’s dominant hand is using a non-depictive (while iconic) ASL sign that represents the other man looking back. The man playing poker is not using ASL; instead, the signer is simultaneously depicting a participant in the discourse and giving mainline narration. Furthermore, the face of the signer is depicting the expression of the stranger, even though his eye

gaze is depicting the eye gaze of the man playing cards. This complex simultaneity is possible because of partitioning, in which “different parts of the signer’s body [are] projected as separate visible real-space elements” (Dudis 2004:225). There are several parts of the body that can be decoupled in this way, and each of those body parts can be considered partitionable zones. These include facial expressions (excluding eyes, as seen in Figure 9), the head, the mouth, the torso, and each manual articulator. See Dudis 2004 for a more detailed discussion about partitioning.

This partitioning distinguishes CA and CD from other types of viewpoint-internal scene depiction; while many of these types of depiction allow for the hands of the signer to be partitioned from the body, CA and CD do not. The hands of a signer using CACD are generally also the hands of the discourse participant being constructed. So, while RIDE.UP.HILL from Figure 5 shows partitioning of the hands (one depicts a vehicle and the other depicts a hill), MOTORCYCLE from Figure 5 is a depiction in which the hands of the signer are the hands of the depicted participant (showing a motorcyclist holding on the motorcycle). The signer is constructing the action of that participant. This part-for-part correspondence between the signer’s hands and the discourse participant’s hands is a hallmark not only of CA, but of CD as well.

This study focuses on CA and CD for two reasons. First, these types of depiction have been studied by several researchers over a span of decades, albeit under various names. This has led to several analyses of CACD from different

perspectives, providing a rich environment for identifying and analyzing the presence of these elements in translated ASL texts. Additionally, the hand-for-hand correspondences between the signer and the depicted participant make these utterances straightforward to identify, benefitting researchers interested in replicating this study or translation practitioners wishing to evaluate their own work.

2.3 Constructed dialogue and constructed action

Because this study uses a framework which was developed for CD and adapted for CA, the topics will be introduced in that order.

2.3.1 Constructed dialogue

Deborah Tannen's work on constructed dialogue (CD) critiques how people typically analyze reported speech, or situations "in which a speaker repeats another's words at a later time" (Tannen 1989, 2007:102). Tannen challenges the idea that reported speech comes in two easily distinguishable varieties: direct and indirect. She explains that indirect quotation/discourse/speech, such as "*Sam said she would come,*" is assumed to be more interpretation-laden and gives a reporter more license to change the words of the reported utterance, while direct quotation/discourse/speech, such as "*Sam said, 'I'll come,'*" is assumed to represent a person's words verbatim (2007:102). To problematize this assumption of a clear distinction between these two, Tannen analyzes English and modern Greek personal narratives, and claims that all reported

speech is interpretation-laden. Because reported speech never precisely reproduces original utterances with the same meaning, Tannen uses the term constructed dialogue, indicating that these utterances are “primarily the creation of the speaker rather than the party quoted” (2007:103).

As evidence that CD primarily originates within the conversational context in which it locally occurs, Tannen offers ten types of CD that could not possibly be reported. These types were inspired by narratives collected from modern Greek and English speakers recounting personal experiences. These types are listed in

Table 1, with Tannen’s original category names in bold, category descriptions in normal font, and original language data examples italicized.

Table 1: Tannen's types of non-reported dialogue (2007:12-19)

Representing what was not said

This is a clear example of dialogue constructed rather than reported as the speaker states explicitly that the line of dialogue was not spoken... [a speaker] represents, in the form of dialogue, what she did not say to her father:

(1) You can't say, "Well Daddy I didn't hear you."

Dialogue as instantiation

Specific dialogue is often constructed to illustrate an utterance type that is represented as occurring repeatedly... [a speaker] establishes that his mother set his father up as the one to fear:

(3) Whenever something happened, then "Oh wait until your father comes."

...although this may well be the gist of what the mother said, there is no reason to believe that these are precisely the words she always spoke every time... [also] the teller of this story is a native of a Spanish-speaking country, so anything his mother said to him when he was a boy was said in Spanish.

Summarizing dialogue

(5) ...and this man is essentially saying, "We shouldn't be here because Imelda Marcos owns this restaurant."

[this] dialogue that is explicitly identified as representing the gist rather than the wording of what was said in a single discourse.

Choral dialogue

(6) And then all the Americans said "Oh in that case, go ahead."

In this example, the dialogue is attributed to more than one speaker: “all the Americans.” This is impossible unless one imagines the line of Americans speaking in unison like a Greek chorus... Rather, the line of dialogue is offered as an instantiation of what many people said.

Dialogue as inner speech

People often report their own thoughts as dialogue.

(8) *And I thought "Oh God, if I am going to get someone's slightly psychotic attitude on pervers, I really don't feel like riding this train."*

It is unlikely that these words actually represent the words the speaker spoke to himself at the time, if he spoke to himself in words at all, especially since the phrase "slightly psychotic attitude" seems stylized for performance effect.

Inner speech of others

...the animation as dialogue of the thoughts of a character other than the speaker... [one speaker of Greek] casts her interpretation of [her attacker's] motivation for suddenly leaving in the words of his (projected) thoughts:

(9) *Sou leei, "Afti dhen echei kalo skopo."*

[English idiomatic translation: *He says, "she's up to no good."*]

When a speaker reports what someone else thought, the words thus animated in dialogue cannot correspond to words actually thought by the other person.

Dialogue constructed by a listener

... a listener often supplies a line of dialogue animated in the role of a character in someone else's story. In (2), the listener, Mary, constructed an utterance in the role of Daisy (or any parent) addressing her children:

(2) *DAISY The minute the kids get old enough to do these things themselves, that's when MARY "You do it yourself."*

Fadein, fadeout

(15) *And uh finally the mother opened up the stroller you know and uh told the kid to "SIT THERE."*

...the mother's speech is introduced with the word "to," suggesting that indirect discourse is to follow. But by assuming the voice quality of a mother giving instructions to her child, the speaker ends by animating rather than reporting the dialogue.

Vague referents (p. 119)

In (16), the use of vague referents makes it clear that the dialogue was never actually spoken as reported:

(16) *He was sending me out to get tools or whatever [imitating father] "Go get this and it looks like this and the other"*

If her father had uttered precisely these words, not even he could have expected her to locate what he wanted.

Nonhuman speaker (p. 119)

A guest notices the hosts' cat sitting on the window sill and addresses a question to the cat: "What do you see out there, kitty?" The host answers for the cat:

(17) *She says, "I see a beautiful world just waiting for me."*

The host animates the cat's response in a high-pitched, childlike voice. ...a fleeting but finely coordinated verbal pas de deux...

Tannen claims that use of constructed dialogue (as well as conversational repetition and imagery, the other two strategies covered in the same book) is motivated by a desire to involve the reader/listener/viewer as a co-constructor of the meaning of the text, what she calls creating involvement. By creating involvement, familiar discourse strategies like these make "discourse effective

because the more work readers or hearers do to supply meaning, the deeper their understanding and the greater their sense of involvement with both text and author” (Tannen 2007:37). Thus, to the extent that depiction in sign languages encourages viewers to supply meaning, texts that use depiction well have a heightened capacity to draw in the viewer of the text.

Tannen’s observations about use of involvement and CD cross-linguistically lead her to posit that “the use of constructed dialogue is associated not only with Greek but also with other individual and ethnic styles that come across as ‘vivid,’” such as Brazilian Portuguese and African American English” (2007:128). Many communities like this value storytelling and have characteristics of orality, or “pass[ing] along their cultural traditions, including their history, identity, and religion, through their stories” (ION n.d.). Many signed languages share these elements of this face-to-face tradition, and have been called oral in this sense (Bragg 1993; Bahan 2006; Sauter 2016).⁹ This could be one reason that constructed dialogue and involvement strategies have yielded such rich avenues of research in sign language linguistics. Because “casting ideas as dialogue rather than statements is a discourse strategy for framing information in a way that communicates effectively and creates involvement” (Tannen 2007:112),

⁹ The term “oral,” in this sense, is not to be confused with the ‘oralism’ or ‘the oral method’ associated with educational authorities depriving Deaf children of access to a sign language or visual communication method and emphasizing assimilation into spoken-language culture through attempting to teach speech and lip-reading (Ladd 2003). As a way to prevent the conflation of these two senses of the word ‘oral,’ Ben Bahan uses the phrase “face-to-face tradition” to describe orality in both spoken language and sign language communities (2006:22).

depiction (by creating involvement) can convey many cognitive effects in a relatively compact way.

Constructed dialogue in signed languages has been called many things: role playing, role shifting, referential shift, and body shift, to name just a few. Though researchers focus on different aspects of this linguistic phenomenon, “there seems to be general agreement that signers use their body, head, and eye gaze to report the actions, thoughts, words, and expressions of characters within the discourse” (Metzger 1995:256). Elizabeth Winston was the first to use the term constructed dialogue to refer to these phenomena in American Sign Language and describe Deaf audience involvement (Winston 1991).

2.3.2 Constructed action

In addition to studying constructed dialogue, Winston describes another involvement strategy: “action performatives,” in which “action and character are vividly portrayed in ASL by the signer’s adopting the pose or actions of the character and imitating them, either as mime, or while signing about that character” (1991:98). Melanie Metzger (1995) furthered this idea by using Tannen’s (1989) framework to identify types of non-reported dialogue in ASL texts.¹⁰ Metzger also elaborates on Winston’s category of action performatives by using the term “constructed action,” claiming that actions are non-literal, non-reported, and primarily authored by the reporter rather than the person whose

¹⁰ Tannen calls the ten groupings “types,” while Metzger calls them “categories.” I will use these two terms interchangeably.

action is being depicted. With this, she extends Tannen's system of categorizing non-reported CD by developing similar categories for CA. Some examples of these new categories include "choral action," where one constructed action is used to represent the actions of a group, and "nonhuman actions." She then applies the combined twenty-category system to interviews with Deaf native ASL users to examine occurrence of CACD in ASL. See Table 3 on page 53 for a complete listing of the combined Tannen-Metzger categorization system.

Though Metzger's study looks at frequency of CACD in her texts, she concedes that frequency is not the most useful measure of these types of utterances. While Winston (1991) describes CD and CA as parallel strategies, Metzger describes the relationship between the two as more complex. In her study, "constructed actions of various types seem to be occurring within the discourse, and constructed dialogue is simply one type" (Metzger 1995:262). In addition to observing this pattern in her data, she also offers an ontological motivation, namely that "communicating is a form of human behavior" (1995:266). Many sign language linguists see CD as type of CA while still finding it useful to study these two types of construction as distinct (Dudis 2016; Quinto-Pozos & Mehta 2010; Thumann 2011).

CA and CD have also been examined by Mary Thumann (2011), who drew from Liddell's (2003) and Dudis's (2007) work on depiction to measure instances of depiction (and specifically, instances of CACD) in academic presentations given by Deaf lecturers in ASL. In 40 minutes of video text, she found 987

instances of depiction and 248 instances of CACD (2011:53). She points out that, while ASL and interpreting students are often taught to look for body shift to mark the beginning of CACD, only 8% of CACD instances were introduced by body shift alone (2011:60). Instead, there were four nonmanual behaviors that introduced CACD (2011:52):

- “changes in the direction of the presenter’s eye gaze...”
- “changes in head position...”
- “changes in the facial expression of the signer...”
- “changes in the body position of the signers...”

These features, while sometimes used in isolation, were often used in tandem to introduce CACD. In fact, it was most common for two or three of these changes to be used at the same time, with the frequency seen in Figure 10.

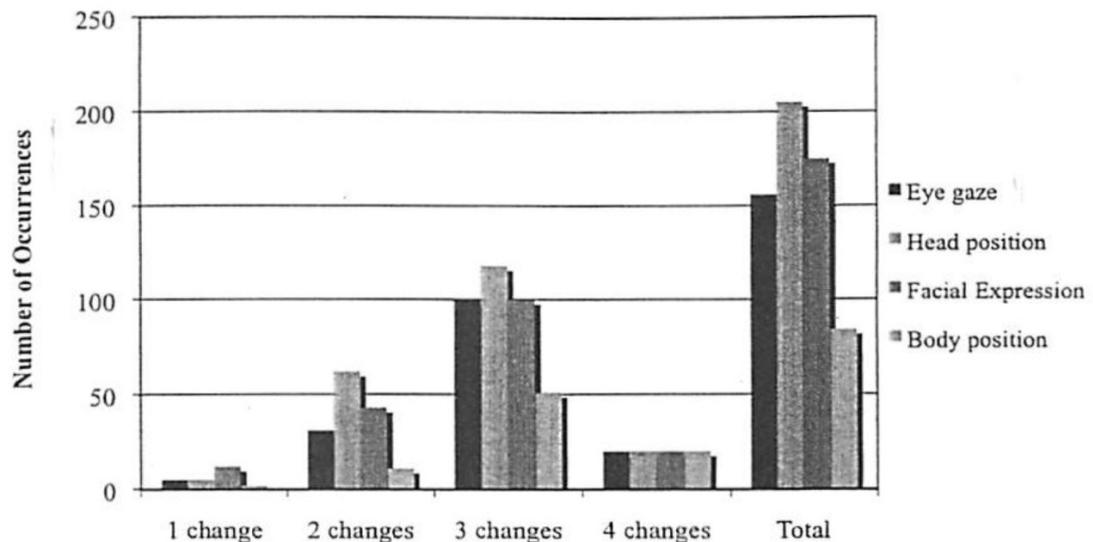


Figure 10: Number of Changes with CACD (Thumann 2011:61)

Thumann concludes that, for second-language learners of ASL to improve their understanding of the language, educators must teach about the broader range of strategies ASL signers use to introduce CACD.

2.4 CACD in the context of translation

The Tannen-Metzger framework for CACD has been applied to a variety of topics, such as sociolinguistic variation in Black ASL (Thumann 2011) and descriptions of blends and surrogate space (Liddell 2003). The focus of this section, however, will be those studies which have applied this framework to translation and interpreting.

In 2016, Michael Sinclair looked at a 17-minute TED-Talk presented in ASL by a Deaf university professor and translated into spoken English for the audience. The ASL-English interpreters worked with the presenter to prepare their rendering of her lecture beforehand, which is why Sinclair refers to their work as translation. He identified each span of CA and CD in the ASL source text, and then made note of the English strategies used to convey those concepts. The most common translation strategy was to restructure ASL instances of CA and CD as indirect action/dialogue in English, with the constructed participant as the subject. Sinclair's goal is to give interpreting practitioners and educators tools to improve their rendering of CACD (although, he does not specify what this would entail).

David Quinto-Pozos and Sarika Mehta designed a study that, though not framed in terms of translation, examines “versions” of the same English source text by two Deaf men in ASL (2010:565). They gave these two native users of ASL a written English text and an English outline of the same story about a prominent figure in the Deaf community. The researchers asked each signer to present the story in ASL in three settings with different audience types: children at a Deaf school, adults at a formal event, and adults at an informal event. One week before the first presentation, the researchers sent copies of the English text, but gave the participants no guidance about how to render the narrative. Each presentation was video recorded, and the researchers later analyzed how use of constructed action was conditioned by the setting.

While they acknowledge that “constructed action is likely gradient in nature as opposed to categorical,” they used a tripartite system of slight, moderate, or exaggerated CA to “document, for comparison purposes, the relative degree of each constructed action variable (i.e., body parts) used in the narratives” (Quinto-Pozos & Mehta 2010:568). The metrics they use outlines thresholds for each degree, which can be seen in Table 2.

Table 2: Qualitative metrics for degrees of CA (2010:568)

Body Part	“slight”	“moderate”	“exaggerated”
Arms/hands	Hardly noticeable movement In signing space Not tense	Modest movement In signing space Does not appear tense	Very noticeable movement Outside signing space Appears tense
Face (facial expressions)	Mouth opening: narrowly open, perhaps for brief time Eyebrows: movement hardly noticeable Facial muscles: hardly appear tense	Mouth opening: modestly open Eyebrows: modest movement Facial muscles: appear moderately tense	Mouth opening: significantly open, possibly for extended time Eyebrows: significantly raised Facial muscles: appear very tense
Head	Orientation change: hardly noticeable Movement: hardly noticeable	Orientation change: slight reorientation Movement: depicting character’s movement, some displacement	Orientation change: significant change from default (e.g., 90° reorientation) Movement: significant displacement from default
Torso (CA)	Hardly noticeable displacement Brief	Modest displacement to depict character Modest duration	Significant displacement during movement Extended duration
Lower body	Hardly noticeable movement (e.g., body shifting or possibly lifting of feet in place)	Modest movement (e.g., small steps to reorient body)	Significant displacement (e.g., taking steps) of possible extended duration
Torso (transitional)	Hardly noticeable shift	Modest shift to either left/right or downward/upward, etc.	Significant shift (e.g., 90° turn)

Though Quinto-Pozos and Mehta analyzed many aspects of CA in their study, they found that the main statistically significant variable that correlated to setting was use of exaggerated degree of CA. When the Deaf presenters were

rendering the story in a formal setting with adults, they used less exaggerated constructed action than they did in the other settings (see Figure 11).

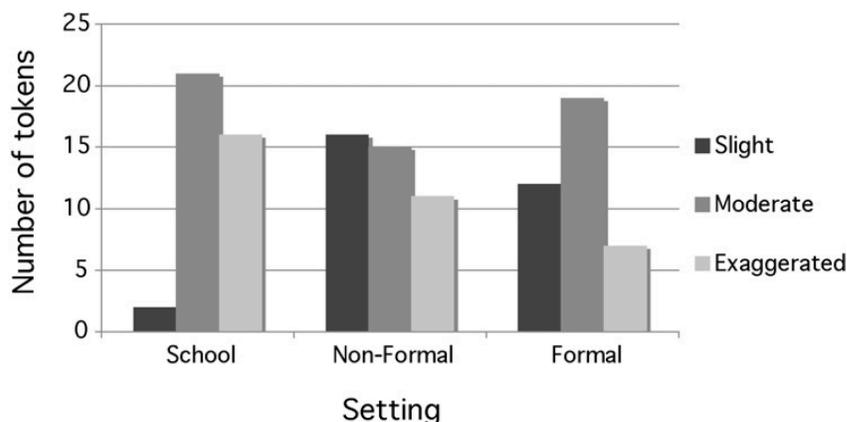


Figure 11: Degree of CA within each setting (2010:572)

They explain that the signers' audience design impacted their renditions of the text. Building on concepts from Bell (2001), they describe how "a speaker will choose a style and also style shift (or move towards another style linguistically) in accord with the perceived interlocutor and non-present referees" (Quinto-Pozos & Mehta 2010:564). Speakers and signers naturally accommodate their perceived audience's phonetic variants, syntactic patterns, and phonology. They note that "if a speaker is doing most or all of the talking, then it is likely that she is accommodating to perceived or assumed characteristics of her addressees" (2010:564). This is similar to the concept of translatorial skopos. Just as different actual audiences in this study resulted in different translations, different target audiences would necessarily produce different translated works in the three translations my study examines.

There has been little research at the intersection of sign language Bible translation and these aspects of CACD. But for translators pursuing naturalness, appropriate depiction and other features of organic language use are essential. Analyzing CACD, non-reported CACD types, and degree of CA in translated texts can bolster the work of these translators by identifying divergences from natural texts.

CHAPTER 3

METHODOLOGY

This chapter discusses the selection of texts for this study, the criteria used to identify constructed action (CA) and constructed dialogue (CD) in the texts, and how the annotations were structured.

3.1 Text selection

This study compares three non-translated texts with six translated texts, all of which come from publicly available sources. Because some of the translated texts might be revised and re-published, the video texts in their current iteration and the accompanying ELAN annotation files have been archived. I encourage readers (and those interested in replicating this study) to access these files at <https://www.sil.org/resources/archives/75222> (Gray 2018).

3.1.1 Non-translated texts

To ensure the non-translated texts were optimally comparable to the Biblical narratives being analyzed, this study looked for non-fictional rehearsed stories performed by Deaf people. Also, the video quality of the texts had to be sufficiently clear for formal analysis. These criteria established the range of possible texts. To hone the selection further, this study did not consider:

- poetry
- stories intended for children
- stories intended for second language learners
- translations (of books, articles, poems that were originally in English)
- texts that showed obvious English influence
- texts from non-native/non-fluent storytellers

Three narratives were chosen that met these criteria. The first text, “Henry Ford,” was taken from a presentation by Adan Burke at a DeafNation Expo in Minneapolis (Burke 2016). “Speeding,” a story by Ben Bahan, was taken from the National Center for Sign Language and Gesture Resources (NCSLGR) corpus, curated by linguists at Boston University (Neidle & Vogler 2012). The final text, “Visual Expression,” was a narrative portion in a TED talk presented in ASL by Wayne Betts Jr (2010). All three of these Deaf presenters were male, ranged in age from 29 to 45, and would be considered good storytellers. Bahan is a well-known ASL performer, Betts is one of the most-watched ASL TED presenters, and Burke’s signing was considered to be so natural that he was selected to be one of the on-screen signers for the Deaf Harbor translation of the Bible into ASL. These three texts served as a baseline for natural depiction in ASL.

The text from the NCSLGR corpus, “Speeding,” was accompanied by a file containing extensive annotations in ELAN, software for video annotation. These ELAN files contain 34 distinct lines of annotations (or “tiers”), which include phonetic details, such as eye aperture and head tilts, syntactic details such as topic and part of speech, and discourse details such as the presence of role shift.

All of these preexisting tiers were hidden (except for main gloss & English translation), and this file served as a base to which additional annotations were added, as detailed in Section 3.3, Annotation.

3.1.2 Translated texts

While there are several groups that have translated religious texts into ASL, there are three that have translated large amounts of similar content: Deaf Missions, Deaf Harbor, and DeafGo Bible.¹¹ These three Protestant Christian groups are involved in activities other than Bible translation (BT), but they are all teams of Deaf people translating segments of the Christian Bible into ASL in a video medium. Because these three have the most comparable content, they are the focus of this study.

Deaf Missions was the first organization to translate portions of the Bible into ASL. They began translation work in 1981, and had published every book of the New Testament by the year 2004 (Deaf Missions 2016).¹² They are still translating books from the Old Testament, and aim to complete that work by 2020.¹³ Their approach focuses on translating one entire book of the Bible at a

¹¹ Other translations of religious texts include the Jehovah's Witnesses' Bible (New World Bible Translation Committee 2006), the ASLWrite book of Ruth (Clark 2018), and the Qur'an (Global Deaf Muslim), to name a few.

¹² The New Testament is the second part of the Protestant Christian Bible, recording the life and teachings of Jesus and his earliest followers.

¹³ The Old Testament is the first part of the Protestant Christian Bible, recording the law, prophecy, history, and wisdom literature of the ancient people of Israel.

time.¹⁴ Because their work was pioneering, their earlier methodology was less standardized between books, and some of the decisions about how to translate the texts were left to the person who was the on-screen signer. In the past few years, Deaf Missions has begun participating in the Deaf Development Group, a forum of Deaf BT practitioners from around the world that sets minimum standards for appropriate BT practice (Forum of Bible Agencies International 2017). Deaf Missions has translated the largest amount of scripture of all of the organizations in this global community of practice.

Deaf Harbor is “an association of Deaf churches and ministries who want to work together to accomplish shared goals” (Deaf Harbor 2018). From this project’s inception, it has complied with the wider BT community’s standards by, for example, hiring an external translation consultant to check for compliance with CANA principles described in Section 2.1.2. In the early 2010s, Deaf Harbor began partnering with DOOR International to translate Biblical passages using a format different from Deaf Missions’ approach. Instead of focusing on whole books of the Bible, DOOR International uses an approach they call Chronological Bible Translation, translating key narrative passages from the Bible and publishing them as sets following the chronology of Biblical events. DOOR says that this approach is “the most culturally appropriate way to communicate God’s Word with Deaf communities,” stating that, “repeatedly, the Deaf say that they

¹⁴ The Protestant Christian Bible is a compilation of sixty-six “books”, each one of which is an independent work. They were composed by various authors, for various intended audiences and with different purposes, over a period of hundreds or thousands of years.

never really understood the Bible until they saw a Chronological Bible Translation” (DOOR International). However, both Deaf Missions and Deaf Harbor are involved in the Deaf Development Group, and (along with other partners) they are working in tandem to make both formats of the ASL Bible available to the American Deaf community (Seed Company 2017).

DeafGo was started by Aric Randolph, the Deaf pastor of Brentwood Baptist Deaf Church, in 2013, and they call the translation component of their work DeafGo Bible (Randolph 2017).¹⁵ They translate sections of Biblical text by genre, and present these sections in chronological order. The web and mobile apps they use to distribute their translated content have no English words or chapter & verse references, and they explicitly reject spoken language terminology or cultural influence (Randolph 2017, timestamp 6:10¹⁶). Instead, the information is grouped by a three-tiered set of icons representing Biblical themes. They describe their work as the “first version of the Bible made for the Deaf, by the Deaf” (Brentwood Baptist Church 2016) and are not working with Deaf Missions or Deaf Harbor as of the time this thesis was written.

There are a few differences between the three translating organizations. For example, while Deaf Missions hires translation staff outside of their religious

¹⁵ The original name for DeafGo is in ASL, and it has been translated/stylized in English as both “Deaf Go” and “DeafGo.” Also, for the sake of concision, DeafGo Bible will henceforth be referred to as DeafGo, as the other activities of DeafGo are not the focus of this thesis.

¹⁶ This is the minute and second where this sentence can be found in the cited video document. In the rest of this thesis, when timestamps or durations with colons are used, the right two digits refer to seconds.

heritage (Christian Churches / Churches of Christ) and Deaf Harbor was founded as multi-denominational, DeafGo's translation team members have all been recruited from within the Southern Baptist denomination. Also, while Deaf Missions and Deaf Harbor only distribute their final drafts, DeafGo self-publishes translated portions at many points in the drafting and revision process, updating and republishing the drafts as they edit them. This fact is relevant for their translation of Genesis 8, which had a few false starts (words that the signer began forming before stopping and deciding to use a different sign). It is likely that this text was published from an earlier draft stage. False starts were not annotated as discrete lexemes, and all of the other translated passages were prosodically similar to the non-translated texts. There are other differences among these three translations, but the ones mentioned here are those which are most relevant to this study.

To select passages from these translations for this study, I made a list of all of the available translated materials from each of the organizations above. I then narrowed this list to those passages which were available in all three translations (see Appendix A), excluding stories which pulled content from more than one source passage. To further narrow the available content to a manageable amount, Exodus chapter 3 and the first fourteen verses of Genesis chapter 8 were selected, both of which were longer portions of narrative text. The content of Exodus 3 is mostly dialogue, which allows for comparison of the internal structure of CD, and the content of Genesis 8:1-14 has no dialogue. The Deaf

Missions texts (published in the 1980s or 1990s) and Deaf Harbor texts (published in 2013) are available online at www.DeafBible.com (Deaf Missions, Deaf Harbor 2013), while the DeafGo texts (published between 2013 and 2017) were downloaded from app.DeafGoBible.com (Brentwood Baptist Deaf Church).

Finally, it is worth noting that Adan Burke, one of the presenters of the non-translated text “Henry Ford,” is also one of the on-screen signers in the Genesis and Exodus texts from Deaf Harbor. However, Burke feels that those translated texts reflect the decisions of the translation team, not his personal language use patterns (Adan Burke, personal communication, November 2017). Thus, the non-translated text and the translated texts he signs are not uniquely comparable.

3.2 Coding criteria

This section describes how CA and CD were identified, how the boundaries of each CACD utterance were delineated, degrees of CA, and non-reported types.

3.2.1 Constructed action and constructed dialogue

This section outlines the criteria I used to identify CA and CD (CACD) in this study’s texts. Because CD can be best understood as a type of CA, the characteristics for identifying CA apply to CD as well.

David Quinto-Pozos and Sarika Mehta describe CA as “an iconic mapping of form to meaning... so that the body part would be configured – to various degrees – like the real-world action or entity that it is attempting to represent”

(2010:559). For the purposes of this study, this definition is operationalized as *utterances in which the signer's lower body, torso, arms, hands, head, or facial expressions take on characteristics of one of the discourse participants*. This differentiates CA from other types of depiction, such as what are commonly referred to as classifier constructions. For example, one indicator of CA is an affective eyebrow lift in which a signer's eyebrows move to indicate concern or surprise that is being experienced by one of the discourse participants, rather than by the signer. In this study, the entire duration of such an utterance is counted as an instance of CA (or CD).

When a signer's CA has the capacity to convey information to a participant in the text (even if that participant is the character's self, as with internal dialogue), it is considered CD. One obvious example of the distinction between CD and non-CD can be seen in the NCSLGR corpus story "Speeding," which is one of the non-translated texts I examined. At the beginning of the story, a character who can hear and does not know ASL hitches a ride from a Deaf driver, and the two use gestures to communicate. While constructing the gestured dialogue between the two of them, the signer takes on the non-manuals and eye gaze of the hearing person and uses the ASL sign GESTURE at time 0:31.1 (see Figure 12). Because this sign is being used to summarize actual communication, it is marked as an instance of CD occurring inside of a longer stretch of CA.

Later in this narrative, however, the signer constructs action of a hearing police officer who pulls the duo over and begins vocally speaking to the Deaf driver. In this section of the story, the content of the officer's utterance is never relayed (an intentional exclusion, as the hearing passenger ostensibly heard and understood it). Because of this, the sign TALK at time 0:52.9 (see Figure 13) is marked as CA, but not CD. GESTURE is used in tandem with direct quoting of the conversation; the gesture is understood meaningfully. But the hearing police officer is not engaging in the activity TALK in a way that serves a communicative function in context. I encourage the reader to watch this pair of utterances in their full context by looking at the original video data, which can be found at <https://www.sil.org/resources/archives/75222> (Gray 2018).

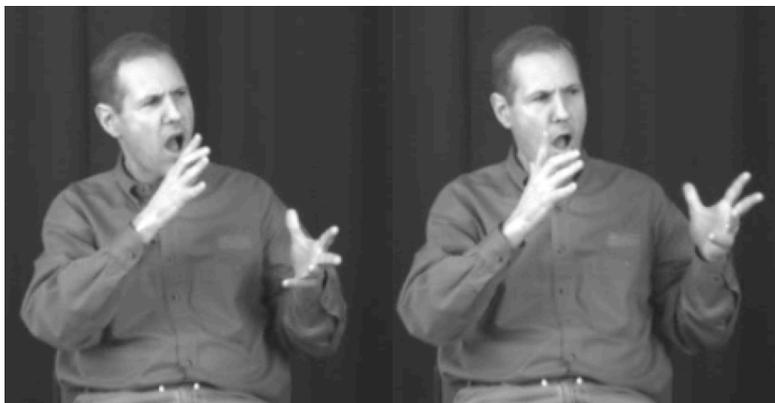


Figure 12: GESTURE



Figure 13: TALK

Parts of the iconic mapping of CACD may be attenuated without disrupting the classification of the entire utterance as constructed. In her work on ASL texts, Melanie Metzger describes this capacity as simultaneous direct and indirect action (1995:263). One example is a larger segment of direct quotation

that is punctuated by indirect quotation, such as when an instance of constructed dialogue has some words that would more often be used by a narrator reporting a character’s speech. As Metzger explains, these narrator-like interjections are “understood not to be a comment by the character whose actions are being constructed. Rather, while constructing this character's actions, the signer is adding an indirect description, simultaneously, with his free hand” (Metzger 1995:264). Another example would be eye gaze that gradually shifts back to the addressee, while the rest of the face maintains the affective expression of the constructed participant. This can be seen in Figure 14 in which the signer is constructing dialogue of a boy (who is addressing his mother).



Figure 14: Attenuated eye gaze (“Visual Expression”)

Here, the signer uses the position of his head, open mouth, and slightly narrowed eye openness to construct the role of the boy. In frames 1 and 2, the signer also directs his eye gaze toward the boy’s mother. But in frames 3 and 4, the eye gaze drifts to the audience, while the other three markers of CD remain. By remaining in the role of the boy while reconnecting with the audience, the

signer attenuates his construction of the dialogue. Such spans of continued quoting are annotated as unbroken instances of CACD, albeit attenuated ones.

When an instance of CACD is interrupted by narration that is not a continued “reporting” of speech or action, each explicitly constructed instance is coded separately. This, also, follows the approach used by Metzger, who counts two separate instances of CD when “a single character might construct commentary, to be followed by narration, and then additional commentary” (Metzger 1995:260). She also marks breaks in CD at the end of each conversational turn between two constructed participants, much in line with what is frequently taught as being the “shift” in ASL “role shift” (Valli & Lucas 1992:77). While this distinction is straightforward for CD, the spirit of marking breaks at shifts in what is being constructed can also apply to CA. Often in CA, the signer will construct, back-to-back, different actions from different viewpoints within the same constructed scene. To capture these shifts in CA, a break in eye gaze or non-manual markers will be marked as a break in CA.

Narration with the signer’s dominant hand does not cause a break in the annotation of CA if the non-dominant hand continued constructing action and the signer’s nonmanuals still depicted those of a participant rather than the narrator. If the nonmanuals return to what would be expected of a signer narrating a story, then the non-dominant hand is useful in determining how to classify the utterance. If the non-dominant hand is stationary, it is likely functioning as a buoy, or a sign produced with the non-dominant hand “held in

a stationary configuration as the strong hand continues producing signs” (Liddell 2003:223). If the non-dominant hand is holding some characteristics of CA, but it isn’t moving, then it is likely functioning as a buoy and not CA. However, if the non-dominant hand is still moving, the utterance is considered continued CA, since buoys are stationary by definition.

3.2.2 Degrees of CA & non-reported CACD

After marking instances of CA and CD, I analyzed two types of information about each constructed span: degrees of CA and non-reported types of CACD. David Quinto-Pozos and Sarika Mehta’s 2010 study of renditions of the same source story by two different storytellers is similar to the scope of this study. I adopt their criteria for marking slight, moderate, and exaggerated degrees of CA (detailed in Table 2 on page 38), following their practice of marking degrees in all CA segments except those which are CD. In their study, the two authors came to agreement about the degree of each CA to ensure consistency. For my study, after all nine videos had all been annotated, I examined all of the annotations again to ensure that I was being consistent in annotating CA degree.

The second way I looked at CACD was by analyzing non-reported instances. Deborah Tannen and Melanie Metzger’s combined, twenty-category system (described in 2.3.2 Constructed action) has been used to analyze narrative texts in ASL (Metzger 1995), TED-style ASL lectures, (Thumann 2011) and English strategies used to voice interpret ASL source text with CACD (Sinclair 2016). The

system, along with the coding shorthand I use to annotate the texts, can be seen in Table 3.

Table 3: CACD category codes (adapted from Metzger 1995:259)

Constructed Dialogue	Constructed Action
ND representing what was not said	NA representing what was not done
ID dialogue as instantiation	IA action as instantiation
SD summarizing dialogue	SA summarizing action
TD choral dialogue	TA choral action
MD dialogue as inner speech	MA action as inner action
OD inner speech of others	OA inner action of others
LD dialogue constructed by a listener	LA action constructed by a listener
FD fadein, fadeout (direct/indirect quote)	FA fadein, fadeout (direct/indirect action)
VD vague referents	VA vague ‘action’
HD nonhuman speaker	HA nonhuman actions

These categories describe specific types of CACD that, logically, could not be reported.¹⁷ Tannen initially developed these types to support her chapter’s main thesis: “In many, perhaps most, cases, however, material represented as dialogue was never spoken by anyone else in a form resembling that constructed, if at all” (Tannen 2007:112). The categories were not intended to be an exhaustive CACD typology, and they do not account for potentially directly quoted constructions. However, several researchers have chosen to use this system because of its

¹⁷ Although technically, all of the dialogue in the translations of Genesis and Exodus is inherently non-reported, since it was all initially uttered in spoken Hebrew rather than ASL. For the purposes of my study, that fact was not encoded.

descriptive potential. It provides semantic categories of utterances that can highlight specific CACD usage patterns, which is why I use it here.

These categories are not mutually exclusive. Whenever there is obviously non-reported dialogue that could fall under more than one category, I annotate it as whichever of the categories best describes why the utterance could not be reported. It must also be noted that Tannen developed these categories in response to a corpus of first-hand narratives, which is not the case with many of the texts I analyzed. This means that the distinction between the category “dialogue as inner speech” and “inner speech of others” is not meaningful; there is no “self” in most of the texts I used, so I categorized all such CD as “dialogue as inner speech,” for the sake of consistency. Finally, the category “dialogue constructed by listener” is only possible to measure when the audience of a narrative is present in the video, which does not apply to any of my texts. So, in my analysis, there are no instances of OD, OA, LD, or LA, but their absence is a function of this study’s range of selected texts.

3.3 Annotation

I used ELAN video annotation software (The Language Archive 2018; Brugman & Russel 2004) to link time-aligned annotations to the video files, allowing for detailed comparison of the texts. Some of the video texts needed to be re-encoded to work smoothly with ELAN.¹⁸ Also, some of the videos were

¹⁸ HandBrake (HandBrake Team 2018) was used to convert the video files into an .mp4 container and H.264 codec for use in ELAN.

split apart or spliced together with iMovie (Apple 2018) to allow for uniform text content and length. When a video had to be both re-encoded and edited, some video quality was lost, but ELAN processed these smaller file sizes well. The original video files were kept separately, to be consulted or re-encoded as needed.

The specificity of the annotations in these ELAN tiers allowed for a very detailed analysis of what can be observed in these texts. Because of the complex criteria by which CACD instances were split up as discrete (see 3.2.1, Constructed action and constructed dialogue), these time-aligned tiers provided enough flexibility to measure the total number of seconds during which the signer was engaged in CACD and the proportion of signs contained in the utterance, in addition to counting raw occurrences. Because of this, I counted how many signs were in each text by marking the approximate beginning and end of each lexical item. This study does not examine lexical units in detail, so granular precision in the timing of the lexical annotations was not necessary. I also added an English free translation which roughly follows clause breaks for ease of navigating the videos. The NCSLGR text already had “main gloss” and “English translation” tiers which served the same functions. For all of the videos, I added twelve additional notation tiers: one identifying switches in on-screen signer, one identifying degree of CA, six identifying presence of CA and CD, two identifying CACD which could not have been reported, and two which contained notes and observations (see Figure 15).

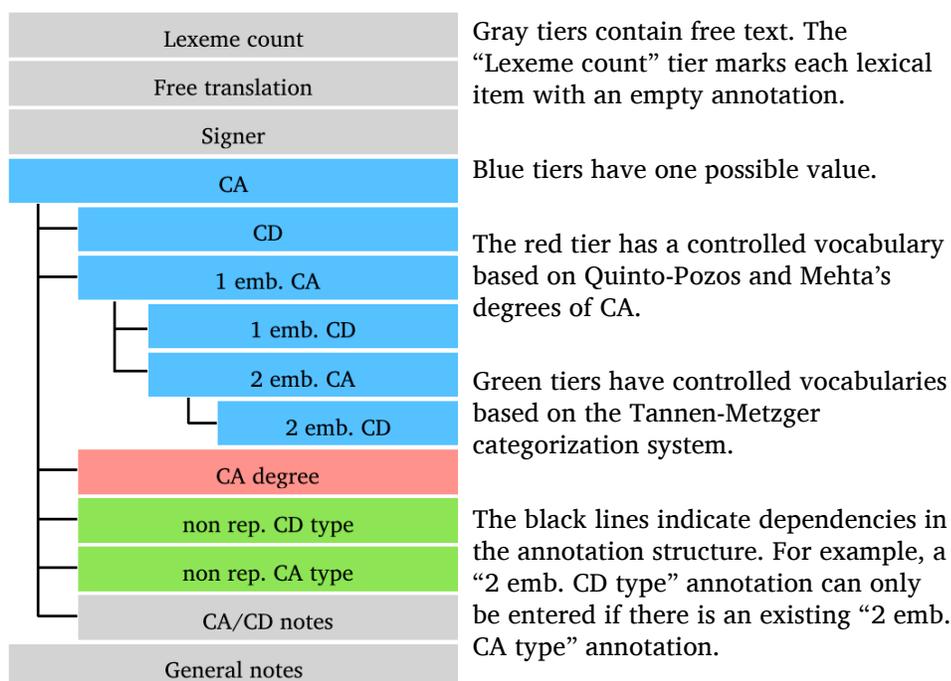


Figure 15: ELAN annotation tiers

In the Deaf Harbor translation of Exodus 3, shifts in participant reference and CD were represented by different on-screen signers assuming the roles of Moses and of God. This did not strongly impact annotation of CACD (as the signers were still constructing dialogue) but it did lead to fewer instances of simultaneous narration and construction, since there was no one in a narratorial role. Because the switch between signers was significant to the structure of the CD in this text, the annotation tier “signer” was used to track which signers were on screen throughout the video. The Deaf Harbor translation of Genesis 8:1-14 also had more than one signer, but it did not seem to impact the discourse structure in the same way.

Metzger, in her work on CA, observed that because “communicating is a form of human behavior, it seems possible that in ASL constructed dialogue is

one type of constructed action” (Metzger 1995:266). My data had no examples of CD occurring outside of CA, and logically, it would seem that the presence of CD is sufficient evidence to posit the presence of CA. Because of this, I set up the CD tiers to be dependent on their respective CA tiers. The tier system I used allowed for two levels of embedding, each level consisting of a CA tier and an optional CD tier.

While these six tiers marked the presence of CACD, three additional tiers were used to mark properties of CACD. Two tiers notated non-reported types of CACD, using a controlled vocabulary of the terms from Table 3. Degree of CA was marked on all CA segments that were not CD, and used Quinto-Pozos and Mehta’s categories of ‘slight,’ ‘moderate,’ and ‘exaggerated’ as a controlled vocabulary. Both the non-reported tiers and the CA degree tier usually annotated smaller sections of a longer segment, since a single instance of CACD often exhibited various properties. I also used one tier for notes which related to a specific instance of CACD, and one tier for notes about other things in the text (such as why a specific segment was not marked as constructed).

Like Metzger, I measured “single occurrences of constructed dialogue... as the span between the beginning and end of a constructed ‘commentary’” (1995:260). Many of the constructed commentaries were about the length of a clause, but they could be as long as several sentences (such as one discourse participant giving detailed instructions to another) or as short as one word (such as one participant giving a one-word reaction to another participant). Because of

this, the annotations in ELAN are aligned to the constructed part of the utterance as precisely as possible. Often, eye blinks occurred at the beginning or end of a stretch of CA, so blinks were sometimes used as a more specific frame-by-frame guide for marking CA boundaries. Sometimes, the signer began taking on characteristics of a participant before naming that participant, such as “Speeding” 1:23.9 where the signer constructs the facial expression of the hearing passenger before using the sign HEARING (Figure 16).

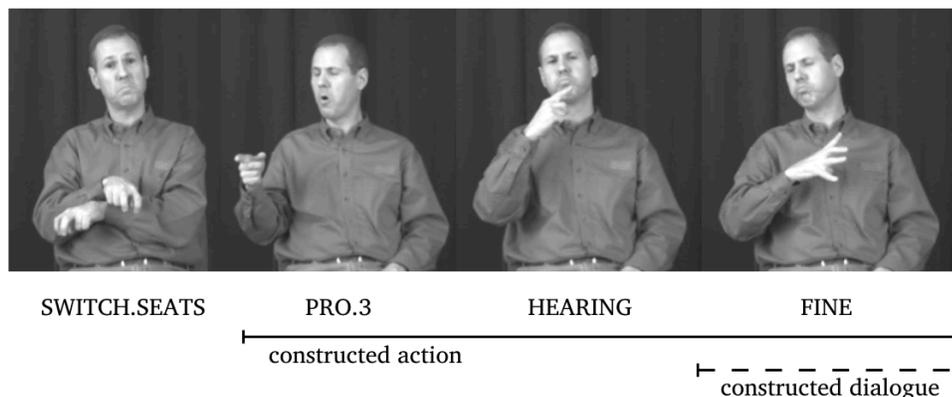


Figure 16: Structure of constructed action onset

In these situations, the CA annotation was aligned to the onset of the depictively mapped characteristics (non-manuals, eye gaze, posture, etc.) regardless of a later lexical identification of that participant.

After all of the files were annotated, each ELAN file was exported to a spreadsheet for analysis (see Table 4 for an example of the data in that format).¹⁹

¹⁹ Each ELAN file was exported as a tab-delimited text (.txt) file. These files were then opened through Microsoft Excel, saved as .xlsx files, and imported into Google Sheets, which handled large amounts of data without crashing and losing progress.

Table 4: Annotations as spreadsheet

Begin Time	End Time	Duration	Signer	CA	CD	Emb. CA1	Emb. CD 1	Emb. CA 2	Emb. CD 2	CA degree	non-rep CA	non-rep CD	CA/CD notes	general notes
01:34.6	01:35.9	00:01				CA							no attending eye gaze	
01:48.0	01:54.0	00:06	A											
01:48.1	01:54.0	00:06		CA						3 exaggerated				
01:54.6	03:03.2	01:09	B	CA	CD									
02:01.9	02:03.2	00:01				CA				1 slight			NMM	
02:08.0	02:11.0	00:03				CA								
02:08.0	02:09.3	00:01								2 moderate	FA			
02:09.3	02:11.0	00:02					CD					FD		
02:44.8	02:46.5	00:02				CA				1 slight			torso	
02:49.4	02:51.0	00:02				CA				2 moderate	TA		NMM	
03:03.7	03:23.5	00:20	A											
04:44.8	04:45.0	00:01												marked as a break in CD because of HEY marker

This table is a sampling of 12 of the 116 annotations for the Deaf Harbor translation of Exodus chapter 3.

CHAPTER 4

RESULTS AND DISCUSSION

This chapter begins with a presentation and explanation of the data from this study. Then, findings from the study are presented by topic: properties of constructed action and constructed dialogue (CACD), differences between translation organizations, and differences between translated and non-translated texts. Finally, implications for further research and practical applications are described.

4.1 Data

This section will explain one text in detail and compare text-level data, giving brief explanation of the data. Once this study's texts had been analyzed, the annotations were exported to a spreadsheet (Table 4 on page 59). See Table 5 for the lexeme counts, lengths, and speeds of all nine texts. Note that the translated text names are abbreviations, with the first letter referring to the textual content and the last two to three letters referring to the translating organization (i.e., E:Har is the Deaf Harbor translation of the Exodus text).

Table 5: Text length, lexeme count, speed

text	Non-Translated			Translated					
	Ford	Speed	Visual	Exodus 3			Genesis 8:1-14		
				E:Go	E:Har	E:Mis	G:Go	G:Har	G:Mis
lexeme count	186	235	178	370	489	597	225	134	157
video duration	01:40	02:02	01:37	05:59	07:29	10:43	03:19	02:18	03:19
video as minutes	1.67	2.03	1.62	5.98	7.48	10.72	3.32	2.63	3.32
lexemes / min	111.6	115.6	110.1	61.8	65.3	55.7	67.8	50.9	47.3

For each of these texts, the number of instances and total length of each feature were totaled on a separate sheet. Table 6 is one such summary sheet for the Deaf Harbor translation of Exodus.

Table 6: Summary sheet for the Deaf Harbor translation of Exodus 3

	count	length	count/100 words	length/total
CA mainCL	16	06:24	3.3	85.5%
CA emb 1	19	01:11	3.9	15.8%
CA emb 2				
CA emb 3				
CD mainCL	14	06:06	2.9	81.5%
CD emb 1	7	00:43	1.4	9.6%
CD emb 2				
CA deg: 1 slight	8	00:12	1.6	2.7%
CA deg: 2 moderate	9	00:16	1.8	3.6%
CA deg: 3 exaggerated	1	00:06	0.2	1.3%
FA	1	00:01	0.2	0.2%
HA				
IA				
LA				
MA				
NA	1	00:02	0.2	0.4%
OA				
SA				
TA	4	00:12	0.8	2.7%
VA				
FD	1	00:02	0.2	0.4%
HD				
ID				
LD				
MD	3	00:09	0.6	2.0%
ND				
OD				
SD				
TD	2	00:04	0.4	0.9%
VD				

The first row of this chart (CA mainCL) records unembedded CA in the texts.

The next three rows (CA emb 1, CA emb 2, and CA emb 3) show CA embedded in another instance of CA. The fifth row (CD mainCL) records unembedded spans

of CA that were also CD, and the following two rows (CD emb 1 and CD emb 2) show CD embedded in another instance of CA. The next three rows record the degree of CA at each qualitative level defined by Quinto-Pozos and Mehta (see Table 2 on page 38 for details). The next ten rows record instances of each type of non-reported CA, and the final ten rows record non-reported CD.

The first column (count) lists instances of that feature in this text, and the second column (length) shows the combined duration of all instances of a feature in the text. Count and length are the two values taken directly from the annotation data. However, because the texts for this study vary in length and speed, the sheer number of instances are not ideally comparable. To compensate for this, I calculated feature instance per 100 lexical items. For example, 16 instances of main clause CA divided by 489 lexical items in the text gives 0.033 instances of main clause CA per word, or 3.3 instances per 100 words. These totals are recorded in the third column (count/100 words).

There was also variation in feature length, a fact to which the count/100 words metric was not sensitive. That metric would give equal weight to this text's shortest (0:03) and longest (1:08) instances of main clause CA. However, the combined length of one feature (recorded in column length) accounts for features of various lengths within one text. To make this comparable between texts of various lengths, combined feature length was divided by the total length of that text. Dividing this text's total main clause CA duration of 6:24 by the total text length of 7:29 shows that 85.5% of the entire text is spent engaging

main clause CA. These percentages are expressed in the fourth column (length/total). The percentages for these features are calculated in relation to text length, not in relation to any other feature.

This sort of summary of all the annotations for one text was repeated for all of the texts. Then, the data from each individual text was compiled in

Table 7 and Table 8 below for ease of comparison. Notice that, while Table 6 records each type of non-reported CA and CD, the tables below combine all instances of non-reported CA and of non-reported CD. To see the full annotation details for every text, see Appendix B.

Table 7: Instances of feature per 100 words

text	Non-Translated			Translated					
	Ford	Speed	Visual	Exodus 3			Genesis 8:1-14		
				E:Go	E:Har	E:Mis	G:Go	G:Har	G:Mis
CA mainCL	3.8	17.4	6.2	6.2	3.3	2.0	9.8	17.2	16.6
CA emb 1				4.1	3.9	3.0			
CA emb 2				1.6		0.7			
CA emb 3				0.3					
CD mainCL	4.8	11.5	3.4	2.7	2.9	1.7	0.9	3.0	3.8
CD emb 1				2.4	1.4	1.3			
CD emb 2				0.5		0.3			
CAdeg: slight	1.6	4.7	1.1	3.5	1.6	1.2	4.0	3.0	3.8
CAdeg moderate	1.6	8.1	3.4	5.7	1.8	1.5	4.4	10.4	10.2
CAdeg: exagg.	2.7	2.1	1.7		0.2	0.7	0.4	6.7	3.8
TOT non-rep. CA	1.6	3.0	0.6	4.9	1.2	0.8	1.3	1.5	3.8
TOT non-rep. CD	1.6	8.5	2.2	2.4	1.2	0.5	0.4	3.0	2.5

This table captures instance frequency in the texts well.

The second way of measuring the texts, shown in Table 8, accounts for the length of each individual feature.

Table 8: Feature length as a percentage of total length

text	Non-Translated			Translated					
	Ford	Speed	Visual	Exodus 3			Genesis 8:1-14		
				E:Go	E:Har	E:Mis	G:Go	G:Har	G:Mis
CA mainCL	33.0%	57.4%	33.0%	75.8%	85.5%	84.9%	20.1%	29.7%	48.2%
CA emb 1				22.3%	15.8%	26.4%			
CA emb 2				8.4%		15.6%			
CA emb 3				1.1%					
CD mainCL	21.0%	30.3%	22.7%	59.1%	81.5%	81.2%	1.0%	9.5%	7.5%
CD emb 1				15.6%	9.6%	22.4%			
CD emb 2				5.6%		14.6%			
CAdeg: slight	2.0%	9.8%	2.0%	6.7%	2.7%	2.2%	6.5%	3.2%	10.6%
CAdeg: moderate	3.0%	12.3%	4.1%	17.5%	3.6%	3.9%	11.1%	8.2%	17.1%
CAdeg: exagg.	7.0%	5.7%	4.1%		1.3%	1.1%	1.0%	8.2%	7.0%
TOT non-rep. CA	3.0%	6.6%	1.1%	11.7%	3.3%	1.7%	2.0%	1.3%	4.0%
TOT non-rep. CD	12.0%	23.8%	6.2%	6.4%	3.3%	2.2%	1.0%	9.5%	5.5%

These two tables represent two metrics for looking at the same features in each of the texts.

It is also useful to examine the body of non-translated texts, as these natural narratives are most reflective of ASL discourse patterns (see Table 9).

Table 9: Feature as a Percentage of Total, Non-translated Texts

text	Feature Length by Text			Features Across Texts		
	Ford	Speed	Visual	features: length	features: minutes	features / total length
text length	01:40	02:02	01:37	05:19	5.32	
CA mainCL	00:33	01:10	00:32	02:15	2.25	42.3%
CD mainCL	00:21	00:37	00:22	01:20	1.33	25.1%
CAdeg: slight	00:02	00:12	00:02	00:16	0.27	5.0%
CAdeg: moderate	00:03	00:15	00:04	00:22	0.37	6.9%
CAdeg: exagg.	00:07	00:07	00:04	00:18	0.30	5.6%
TOT non-rep. CA	00:03	00:07	00:01	00:11	0.18	3.4%
TOT non-rep. CD	00:12	00:29	00:06	00:47	0.78	14.7%

This table's first three columns show the total length of all instances of a feature in each text; these values are similar to the "length" column from Table 6. The "features: length" column totals each of the features length from the individual texts, and the "features: minutes" column converts minute:second lengths to fractions of a minute. The final column shows total feature length compared to text length across all of the non-translated texts. As this table shows, in the natural texts studied, CA was present 42.3% of the time (with 3.4% of total video length being non-reported CA), and CD was present 25.1% of the time (with 14.7% non-reported CD).

While this study does not rely on instance per minute metrics, which fail to account for text speed, the published study which is most similar to this study did measure instance per minute. Mary Thumann's (2011) study found 248 instances of CACD in 40 minutes of text (6.2 instances per minute), while this study's texts used CACD an average of 11.6 times/minute (or 10.3 times/minute, when excluding embedded CACD). Because Thumann's texts were hortatory, non-narrative texts, I do not believe her results are directly comparable to those in this study.

4.2 Properties of constructed action and constructed dialogue

This section outlines properties of CACD in these texts that other researchers have discussed (concurrent narration, embedding) and describes emergent

properties of CACD (CACD category patterns, embedding restrictions, and benefits of analyzing CA and CD as distinct).

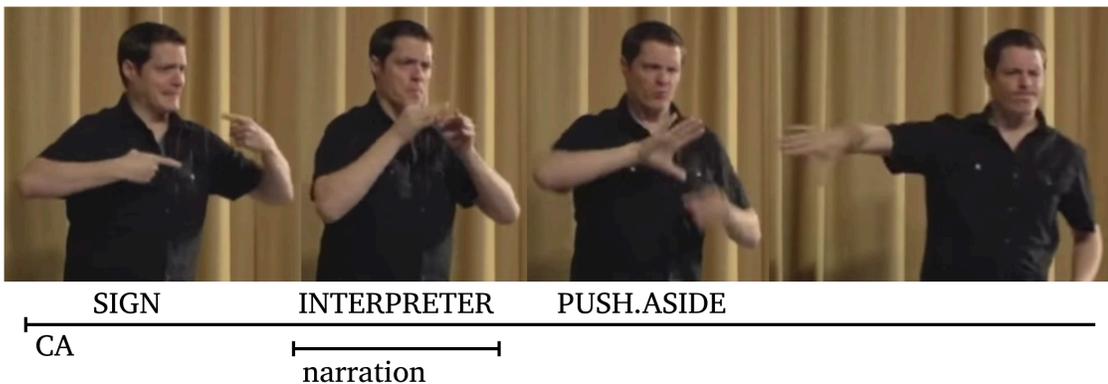
4.2.1 Concurrent narration

As Metzger (1995) and Engberg-Pedersen (1995) both found in their texts, CACD in my texts was frequently accompanied by manual narration. One example of this can be seen in Figure 17, from the non-translated text “Visual Expression.”

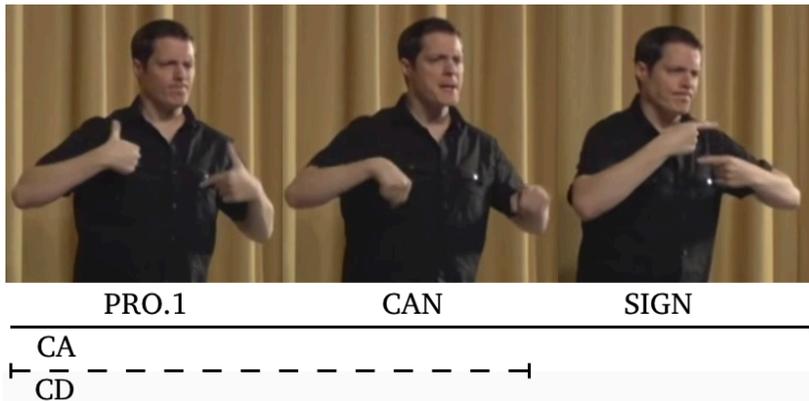
Line 1



Line 2



Line 3



Translation: He was hearing, and didn't sign fluently. He signed laboriously, but he refused to use an interpreter, insisting that he could sign for himself.

Figure 17: Concurrent narration (“Visual Expression”, timestamp 3:55)

In this utterance, Lines 2 and 3 are both constructing the action of the hearing man. This can be identified by the change of facial expressions from neutral to determined and change of body posture to be slightly more hunched, two of four criteria given by Thumann for identifying CACD (2011). What is of note here is the inclusion of the sign INTERPRETER during the constructed utterance. The non-manuals and body posture are still depicting the hearing man, but the narrator is using the manual expression to introduce a new participant into the discourse. As Metzger describes, “this sign is understood not to be a comment by the character whose actions are being constructed... but rather a narrated comment” (1995:264). In addition to the sign INTERPRETER in Line 2 of Figure 17, there are several other instances of concurrent narration in my texts.

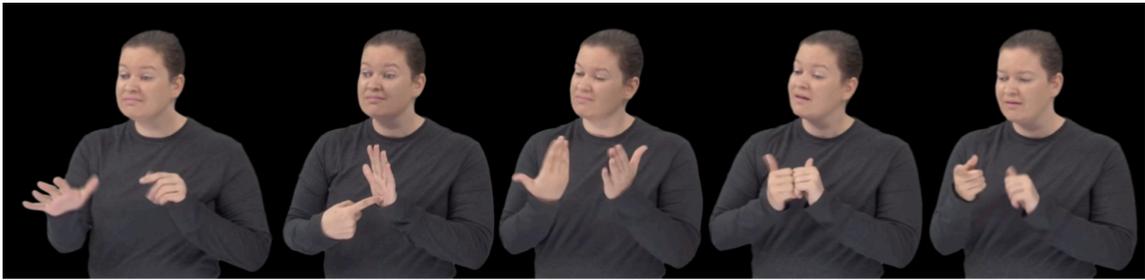
4.2.2 *Embedded CACD*

In my data, every instance of CD occurred inside an instance of CA, and the two often were used in tandem. In Line 2 of Figure 17 above, for example, the character's actions are constructed before the character begins communicating in Line 3. All of my other texts followed a similar pattern, supporting Metzger's (1995) observation that CD is best understood as a type of CA. However, this would not be considered embedding, as CD is one semantic type of CA. Instead, one could say that the above span of CA switches to a CD type of CA, and then switches back to a non-CD type of CA.²⁰

However, an utterance constructing the action or dialogue of one discourse participant can have embedded in it an utterance constructing the action or dialogue of a different discourse participant. One example of this can be seen when God is commanding Moses to go to Pharaoh (see Figure 18 below). In this figure, a dotted line is used to represent the span of CD to emphasize that it is a type of CA, rather than an embedded layer.

²⁰ To my knowledge, little research has focused on other types of CA, though the analysis of CD as one type of CA is uncontroversial (Metzger 1995; Engberg-Pedersen 1995; Liddell 2003; Quinto-Pozos & Mehta 2010; Thumann 2011).

Line 1



HEY

SHOW

PROOF

HOW?

PRO.2

CA: God

CD: God

Line 2



WILL

TAP

AREA

POSS.PRO.1

PEOPLE

CACD: God

CA: Moses

CD: Moses

Line 3



HEBREW

PRO.1

BRING.OUT

THREE.DAYS

CACD: God

CACD: Moses

Translation: This will be the evidence. You will approach Pharaoh and tell him, "I am taking my people, the Hebrews, away for three days."

Figure 18: Embedded CACD in Exodus 3 (DeafGo, timestamp 3:46)

In Line 1 and the first sign of Line 2, the signer is using her body position, head tilt, and eye gaze to construct the action and dialogue of God addressing Moses (a discourse participant who has been referentially established in the space to the signer's right). However, as God begins giving Moses a command in Line 2, the signer's body position, head tilt, and eye gaze shift to her left, to show Moses addressing Pharaoh. Also, while the second-person pronoun PRO.2 in Line 1 refers to Moses, the first-person pronoun PRO.1 in Line 2 refers to Moses, as well. Dianne Lillo-Martin's work explains that this is to be expected, as "any first person pronouns in the embedded clause are co-referential with the subject of the point of view" (1995). This can also be seen in unembedded CD like Figure 17 above, where the deictic center of the CD in Line 3 (which could be loosely translated "I can do it myself") is clearly not that of the presenter.

4.2.3 Embedding restrictions

While other researchers have discussed CACD embedding, there seems to be a restriction to the embedding: in my texts, CACD was only embedded in spans of CD, as seen in Figure 18 above. There are no examples in the texts of CACD being directly embedded in a span of CA that is not CD. This problematizes the analysis of CD as merely one semantic type of CA. If that were the case, one might expect to see embedding in other types of CA, of which there are no examples in this data.

Furthermore, it is difficult for me to imagine how CACD could be embedded in a non-CD span of CA. This could be because the act of construction, itself, is

communicative. Perhaps it is impossible for a constructed participant to construct the action of another participant in a way that is not dialogical. Regardless of the reason, the fact that CACD can only be embedded in CD might be a starting point for delving into the relationship between CA and CD, or exploring the types of CA that are not CD.

4.2.4 Benefits of analyzing CA and CD as distinct

Additional benefits of analyzing CA and CD as distinct include the applicability of Tannen's categories and of Quinto-Pozos & Mehta's degrees.

Tannen's categories of obviously non-reported CD were more readily applicable than Metzger's categories of non-reported CA. When looking at the non-translated texts, non-reported CD was used during 14.0% of the total text length (an average of the "TOT non-rep CD" values for the non-translated texts in Table 17 in Appendix B). In comparison, and non-reported CA was used during an average of 3.5% of the total text length (an average of the "TOT non-rep CA" values for the non-translated texts in the same table). Also, in eight of the nine texts, there was greater duration of non-reported CD than non-reported CA. Even in situations where Metzger's categories do apply, they do not make an argument for the non-reported nature of the utterance as precisely as Tannen's categories do.

For example, Tannen analyzes non-human dialogue as obviously non-reported, because non-human entities rarely speak in the real world. Metzger's parallel to that is non-human action, but in the real world, non-human entities

often act, and so can easily be reported. Thus, the category of non-human action is so broad that it includes utterances that could have been directly reported, missing the original spirit of the categories. This could be seen in the Genesis 8 texts, in which CA was used to depict a dove carrying an olive branch in its beak (Figure 19).

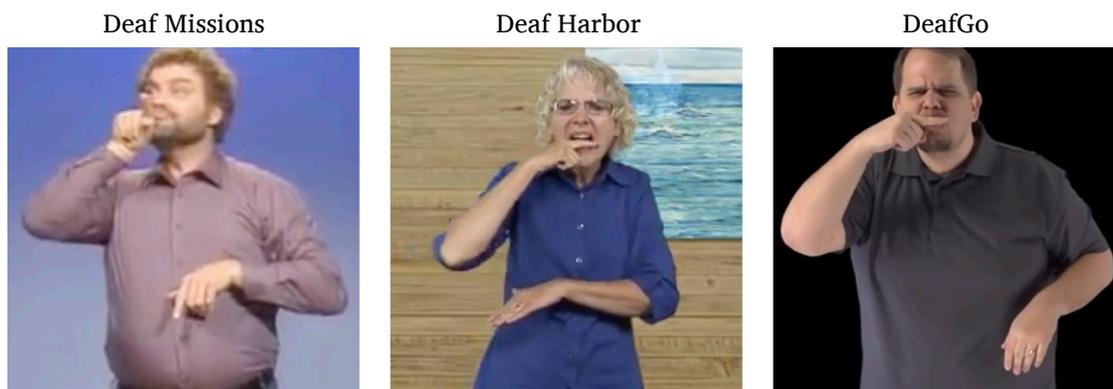


Figure 19: Non-human action, Genesis 8

While this is clearly CA, it is not a clear representation of a non-reported utterance. To preserve the goal of Tannen's original category system, the non-human action category could be re-defined so that examples like Figure 19 do not fall under it. A better corollary to non-human dialogue might be non-animate action.

The distinction between CA and CD is also necessary for Quinto-Pozos and Mehta's degrees of constructed action. They apply readily to CA, but are not relevant for CD (which is unexpected, again, as CD is usually analyzed as a type of CA). Their three-level coding system for degrees of CA was reproducible and

straightforward, but it was not clear how it could apply to CD (and indeed, they never intended it to). This schema, then, is only relevant for non-CD CA.

4.2.5 Non-reported CACD by category

Because there were not very many instances of non-reported CACD in each category, the raw number of instances was a useful metric. See Table 10 for a summary of the instances of non-reported CACD per text in each of Tannen's and Metzger's categories.

Table 10: Non-reported CACD instances

	Non-Translated			Translated						Total
	Ford	Speed	Visual	Exodus 3			Genesis 8:1-14			
				E:Go	E:Har	E:Mis	G:Go	G:Har	G:Mis	
FA		2	1		1	3			2	9
HA							3	1	3	7
IA		1		1						2
LA										
MA	1	2		1				1	1	6
NA				2	1					3
OA										
SA		2		4						6
TA	1			10	4	2				17
VA	1									1
TOT non-rep. CA	3	7	1	18	6	5	3	2	6	51
FD	1	1	1		1					4
HD										
ID										
LD										
MD		9	1	2	3	1	1	4	4	25
ND				1						1
OD										
SD	2	8	2	6						18
TD					2	2				4
VD		2								2
TOT non-rep. CD	3	20	4	9	6	3	1	4	4	54

All of the types of non-reported CA that were possible were, indeed, present in these texts.²¹ However, there seemed to be no significant pattern in the use of non-reported CA across the texts or the translation organizations. Of the eight types of non-reported CD that were possible in these texts, all were found except for “vague referents,” “dialogue as instantiation,” and “non-human speaker.” Because ASL utterances fitting these categories have been found in other studies of ASL (Metzger 1995), I interpret their absence as a function of this study’s sample size, rather than a pattern emergent from the texts.

Overall, I found fewer instances of non-reported CA and non-reported CD than I expected. The only pattern that surfaced is that “internal dialogue” was found in eight of the nine texts from this study, and that there were more instances of this category than any other (25 instances across all texts). The CACD category with the second-most instances was “summarizing dialogue” at 18 instances, and the categories with the second-most prevalence across texts were “fadein, fadeout action” and “internal action,” both of which can be found in five out of the nine texts. While internal dialogue is prevalent across the texts, a larger corpus would be needed to use any single CACD category as a point of comparison between texts or text types.

²¹ See the end of Section 3.2.2 for a discussion of why LA, OA, LD, and OD could not have been present in these texts.

4.3 Translation organization

In my study, there are more similarities between the texts translated from the same source story (all translations of Exodus 3, for example) than within one translating organization's texts, as the translated passages' semantic content had great impact on the presence of CACD. For example, over 70% of the content of Exodus 3 is two people having a conversation, a fact which forces these translations to use more CACD than they otherwise might. Because of this, the amount of CACD in the translations are not directly comparable to that in the non-translated texts. Also, looking for trends correlating with the different translation organizations is an endeavor based on the assumption that each translation is a coherent whole, rather than a compilation of individual texts translated differently; this is not always the case. However, the texts from each translation organization are marketed as parts of a whole, so it is still useful to examine them as such.

This section will discuss differences between the three translating organizations' use of exaggerated CA and of their overall use of CACD.

4.3.1 *Exaggerated CA*

As can be seen in Table 9, all three of this study's non-translated texts had CA that was slight (5.0% across texts), moderate (6.9% across texts), and exaggerated (5.6% across texts). Of the three translations, the one that showed the most departure from this distribution of CA degree was the DeafGo translation. While the Deaf Harbor and Deaf Missions texts had amounts of

exaggerated constructed action (4.8% and 4.1%, respectively) similar to that of the non-translated texts (5.6%), the DeafGo texts only had an average of 0.5%.

Quinto-Pozos and Mehta (2010) found that less exaggerated CA was used in formal settings than in other contexts. This poses the question of whether the DeafGo texts have a more formal presentation style. However, other elements of the DeafGo translation seem less stylistically formal than the other two translations. For example, the on-screen signers for Deaf Missions, Deaf Harbor, and DeafGo wear long-sleeve dress shirts, short-sleeve polo shirts, and short-sleeve tee shirts, respectively. Ultimately, more texts would need to be examined before making broader claims about the reasons behind the difference in CA degree.

4.3.2 Differences in overall amount of CACD

Averaging the texts from each translation organization did not reveal noticeable differences in CACD use. However, looking at each text individually gives more useful insights.

Table 11 shows instances of CA (including embedded CA), instances of CD (including instances of embedded CD), and then a total for CA and CD per 100 words in the Genesis texts.

Table 11: CA and CD per 100 words in Genesis texts

	G:Go	G:Har	G:Mis
CA	9.8	17.2	16.6
CD	0.9	3.0	3.8
CA and CD	10.7	20.2	20.4

This table shows that, while the Deaf Harbor and the Deaf Missions translations use CACD at similar rates in the Genesis text, the DeafGo translation of the Genesis text has less CA and less CD. Looking at these three texts alone would suggest that the DeafGo translation uses less CACD than the other two translations. But the same metric in the Exodus translations (see Table 12) shows that DeafGo uses CACD more.

Table 12: CA and CD per 100 words in Exodus texts

	E:Go	E:Har	E:Mis
CA	12.2	7.2	5.7
CD	5.7	4.3	3.4
CA and CD	17.9	11.5	9.1

In the Exodus texts, again, the Deaf Harbor and the Deaf Missions translations use CACD at similar rates. However, here, the DeafGo translation uses more CACD than the other two translations. As mentioned in Section 3.1.2, the DeafGo translation of the Genesis text seems to have been released from an earlier stage of the drafting process. As they refine their translations, they intentionally incorporate more ASL grammatical features with each draft. This may be one reason that patterns of overall CACD use differ between the Genesis and Exodus selections from DeafGo.

More DeafGo texts would need to be analyzed to see whether this pattern – less CACD than other translations in early drafts, more CACD than other translations in late drafts – extends throughout their entire collection of texts. To

determine this, such an analysis would need to find a way to measure or control for differences in draft progress in the texts.

Overall, I expected to find more differences between the work of these three organizations. Aside from differences in exaggerated CA and possible differences in CACD use (depending on draft quality), it seems that differences between the work of these three organizations is not best measured through sheer use of CACD, or through analysis of non-reported CACD types.

4.4 Differences between translated and non-translated texts

The two biggest differences between translated and non-translated texts were the use of non-reported CD and speed.

4.4.1 Non-reported CD

There was significantly more non-reported CD in the non-translated texts. Because non-reported CA and CD were typically short segments of longer instances of CACD, the count per 100 words metric was useful. In non-translated texts, there were 27 instances of non-reported CD across 599 words, while in translated texts, there were 27 instances across 1,927 words. The differences in instances of non-reported CD per 100 words can be seen in Figure 20 below.

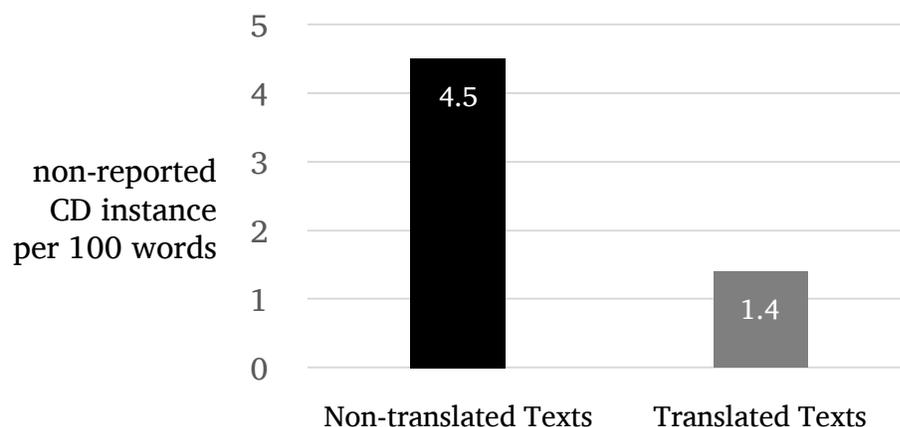


Figure 20: Non-reported CD comparison

On average, the non-translated texts used 4.5 instances of non-reported CD for every 100 words, while the translated texts used only 1.4 instances in the same amount of text. The three translations use non-reported CD only 31% as much as the narratives originally composed in ASL.

There are many possible reasons for this discrepancy. Anecdotally, as I interact with fluent users of ASL and fluent users of spoken English, the users of ASL seem to make much greater use of non-reported CD. If this is true, the discrepancy could spring from the translation teams starting with an English source text, or scripting their translations in a word-for-word English gloss to represent each sign (such as the capitalized words in Figure 16 on page 58). However, further investigation is needed to ascertain the reason behind the non-reported CD discrepancy between translated and non-translated texts.

4.4.2 Speed

A final pattern that surfaced when comparing translated and non-translated texts is not related to CACD, but could impact naturalness: the non-translated texts were around twice as fast as the translated texts. Each text's word per minute (WPM) speed is represented in Figure 21 below.

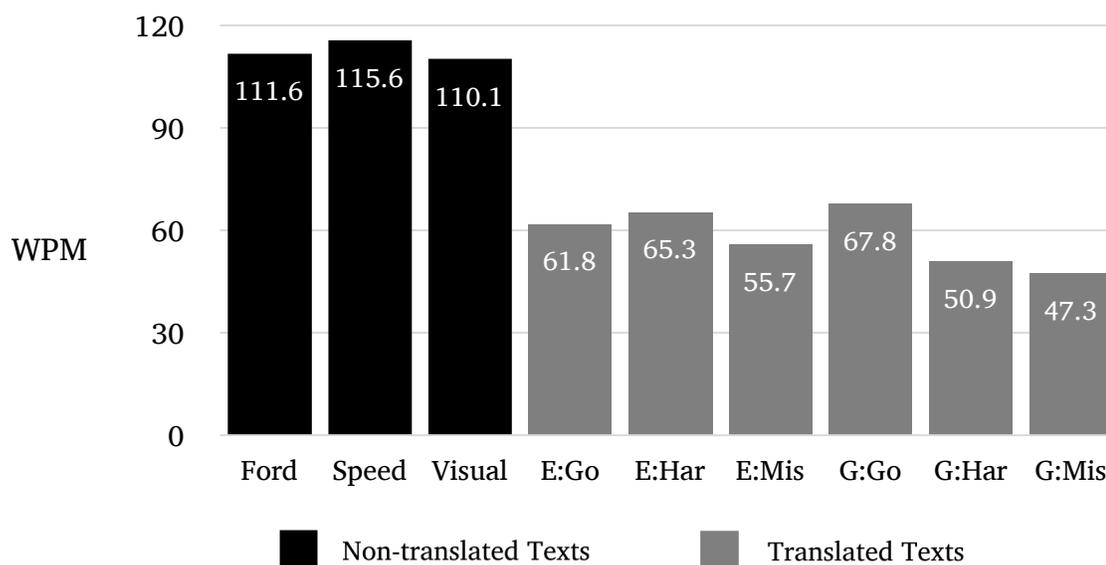


Figure 21: Text Speed

The translated texts had a mean speed of 58.2 WPM (with a standard deviation of 7.5), and the non-translated texts had a mean speed of 112.4 WPM (with a standard deviation of 2.3). An independent-samples t-test resulted in $p > 0.000001$, so the speed difference is highly significant. Other studies of ASL's natural rate measured in words per minute have found rates of around 140 (Klima et al. 1979) and 120 (Wilbur 2009). Ronnie Wilbur's study grouped ASL texts into slow, normal, and fast signing speed, and the slow speed was over 90

WPM (2009), which is still faster than the fastest of the translated texts (67.8 WPM).

It is unclear why the speed of the translations is different. In English, for example, the WPM rates of spoken English and audio Bibles are similar (though, obviously, not comparable to the WPM speeds of ASL.) Dom Barnard looked at five popular TED talks²² “from a wide range of speech topics,” and found speech rates of 154, 165, 170, 176, and 201 WPM (mean 173.2, SD 15.6) (Barnard 2018). For comparison, I examined five audio versions of Exodus 3 from popular English translations²³ and found WPM rates of 167, 167, 171, 174, and 184 WPM (mean 172.7, SD 6.17). Because the mean speeds of non-translated and translated spoken English lectures are so close (173.2 and 172.7 WPM), it seems that the act of Bible translation itself does not necessitate a slower speed, at least, not in all situations.

One possible reason for the speed differences is that many Deaf translators memorize the signs they use in producing the utterance live for a video camera (a departure from the spoken English narrators, who are likely reading from the written translation). The act of recalling the exact signs from memory could

²² These rates are from “The power of vulnerability” by Brené Brown, “Do schools kill creativity?” by Sir Ken Robinson, “How great leaders inspire action” by Simon Sinek, “The power of introverts” by Susan Cain, and “Why we do what we do” by Tony Robbins, respectively. All of the source videos and transcripts are available at www.ted.com at the time this thesis was written (TED).

²³ These rates are from the King James Version, New Living Translation, English Standard Version, New International Version, and New American Standard Bible, respectively.

cause slower production of signs than, say, extemporaneously deciding which signs to use when telling a non-translated story. Another possibility is that the translation teams are aiming for a formal register in their translations, and some teachers of ASL have noted that “in frozen and formal registers, signing is usually at slower pace...” (Lapiak 2018). However, two of the non-translated texts used as a speed baseline were taken from presentations at large events, neither of which were especially informal.

A final possible motivator for the speed differences is the varied level of first-language fluency within the American Deaf Community. Because over 95% of Deaf children are born to parents who can hear (and who usually do not sign), many of them are not exposed to a language they can fully understand until later in life (Mitchell & Karchmer 2004). Because of this, many Deaf Americans use ASL as their first language, while not having the native fluency demonstrated by those who were exposed to their primary language from birth (such as Deaf children of Deaf parents.) Because of this, some translation organizations intentionally make their translations more accessible to those who do not have full native fluency in the sign language. For example, DOOR International (an organization partnering with the Deaf Harbor team) has stated that, if language fluency can be seen as a continuum with new Deaf signers as one endpoint and Deaf children of Deaf parents as the other endpoint, they intentionally craft their translations to match the center of the continuum, with the goal of reaching as many people as possible (Ninan 2015). This awareness

that their audience is less than fully fluent may influence translators to slow down their delivery.

4.5 Steps forward

To aid in moving forward this line of research about CACD and translation, there are several possible avenues of further research applications for translation teams.

4.5.1 For further research

This study paves the way for other research opportunities in ASL and in other sign languages. In ASL, this study's methodology could be replicated with more texts, both natural texts and more passages from these three ASL translations. This could either be done for additional narrative texts or be broadened to include more textual genres. For example, there are several TED talks by Deaf presenters in ASL with very little English influence. The analysis of more natural texts would help establish a reliable baseline for CACD use in ASL. Also, analyzing more translated texts would allow for generalizations about the patterns related to translation organization, and could provide specific insights for each organization. One factor that could be measured would be the level of revision or polishing of each DeafGo draft; controlling for this would unearth more trends in the organization's work.

Second, the methodology from this study could be applied to other texts that have been translated from English into ASL, of which there are many. In the

course of looking for suitable baseline texts for this study, I found ASL translations of Edgar Allen Poe poetry, several children's books, articles from Time Magazine, and an entire Steve Jobs biography, among others. This would clarify which differences between Bible translations and the natural texts are attributable to the constraints of the general activity of translation, and which are unique to Bible translation specifically.

Finally, the methodology used here could be used by researchers from other countries to examine CACD patterns in their naturally occurring texts and identify areas for improvement in translated texts. For researchers interested in replicating this study or modifying it to fit their needs, the ELAN template file used to annotate the texts can be found in the archived files accompanying this thesis at <https://www.sil.org/resources/archives/75222>.

4.5.2 Practical applications

This section lists suggestions for ASL translation teams and for practitioners working in other sign languages.

If Deaf Missions, Deaf Harbor, or DeafGo were interested in examining their translated products in light of this study, there are some straightforward ways they could do that. First, they could look for opportunities to include non-reported CD in their texts, and when making translation decisions, bear in mind ASL's natural use of non-reported strategies. One example of this is an excerpt from Exodus 3 in which God explains that Pharaoh will not be willing to let

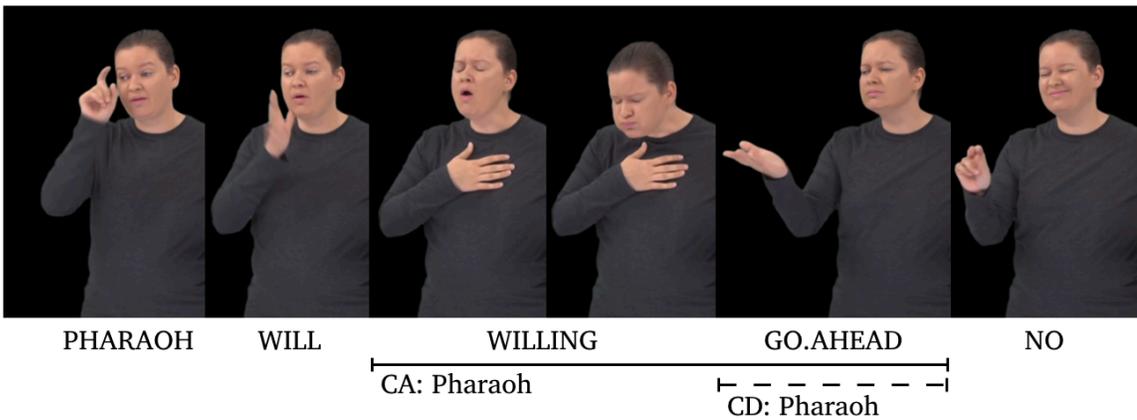
people go. The Deaf Missions and Deaf Harbor conveyed this by having God narrate this fact, as can be seen in the Deaf Harbor translation below.



Transliteration: Will Pharaoh allow them to go? No.
 Free translation: Pharaoh will not let them go.

Figure 22: Clause with no embedded non-reported CD

The DeafGo translation of the same content has several similar features, but includes non-reported constructed dialogue, as can be seen in Figure 23.



Transliteration: Will Pharaoh be willing and say “you can go”? No.
 Free translation: Pharaoh will not let them go.

Figure 23: Clause with embedded non-reported CD

Here, the signer shifts her eye gaze and facial expressions to construct the action and dialogue of Pharaoh embedded in the action and dialogue of God.

Furthermore, the type of CD that is constructed here could not possibly have been reported, as it both takes place in the future and is ultimately negated by

the signer; the utterance fits Tannen's category of "representing what was not said." This is just one example of a translation team choosing to exploit an opportunity for non-reported CD. Because the most common type of non-reported CD found in the texts was "internal dialogue," that may be a natural starting point for teams looking to increase the frequency of non-reported construction in their translations.

The ASL translation teams could also examine the speed of their translations. Because of the factors mentioned in Section 4.4.2 above, I am not necessarily suggesting that the ASL translation teams make their translations faster. There could be valid reasons to translate the Biblical texts slower than natural ASL, such as wanting to provide translations that can be easily understood by Deaf people who, because of late exposure to ASL, are not fully fluent in the language. However, teams could analyze their work to see whether the slower speed of the translated texts are achieving their goals. One way to measure this would be to record the same translated text at various speeds, and then show these texts to focus groups of Deaf Americans. Then, they could ask comprehension questions designed to measure the accomplishment of their particular skopos goals. For example, if their goal is to accommodate late learners of ASL, they could gather demographic information before the session began (e.g. "what age were you when you first learned ASL?"), ask general comprehension questions about the text themselves, and see whether the slower

text speeds were actually more comprehensible to those who acquired ASL at a later age.

It is possible that the translation teams are not intending to translate slower than what is typical for natural ASL texts. If this is the case, there are some solutions that are already being implemented by sign language Bible translation teams in other countries. For example, to reduce the burden of the on-screen signer memorizing each draft, the ViBi team in Japan arranges multiple computer monitors in front of the on-screen signer, and uses them to play a video draft (Matsumoto 2014).²⁴ This way, the signer can follow the draft by looking at the monitors, reducing reliance on memorization of each draft. Also, varying the speed at which the prompt video is displayed allows for more control over the speed of the final translated product. An additional strategy used by other practitioners is to incorporate speed control functions into electronic scripture distribution platforms. The ViBi team has implemented this feature in their mobile app; it has sliding speed controls which allow the user to watch the video at either a slower or faster pace than it was originally recorded (APSDA 2017).

While the suggestions above might be useful for ASL translation teams, they are not the best place for international teams to start. For Deaf translators and others working in other signed languages, the best first step would be to do basic

²⁴ As this paper has discussed, eye gaze is a meaningful feature in ASL and other sign languages. Having more than one screen allows the signer to use eye gaze in grammatically appropriate ways while still following the video draft.

research similar to what is done in this paper. For example, if a Deaf translation team is preparing to translate the Biblical book of Exodus, they could begin by eliciting historical narratives from Deaf community members who are known to be excellent storytellers. Then, the use of CACD could be marked in these texts, either using ELAN or simply through counting words and instances of various features.²⁵ This could then serve as a reference point for their translation of Biblical texts of a similar genre.

4.6 Conclusion

We have seen that Deaf Bible translators who wish to approximate natural use of their sign languages have many forces to contend with: colonial influence of spoken/written languages of wider communication, varying first-language fluency in the Deaf community, and their sign languages' natural depiction patterns, among others. However, as these teams (and those supporting them) become more aware of depictive strategies like CA and CD, their work can grow in naturalness and better serve the Deaf communities who use these texts.

²⁵ While not all Deaf translation teams have had training about the linguistic annotation software ELAN, they often are connected with people who know this software and could train the team to use it for themselves.

APPENDICES

APPENDIX A
SCRIPTURE AVAILABLE IN THREE TRANSLATIONS

This is a list of scripture portions that were available in all three translations as of November 2017. For the sake of easy comparison between texts, this list does not include any stories which drew content for more than one source text for the same story (such as a “harmonized” version of a story about Jesus taken from different books of the Bible and biblical authors).

Table 13: Available translated texts

Book	Deaf Missions	Deaf Harbor	DeafGo
Genesis	whole book	1:1-2:3	1:1-25
		2:7-25	2:4-25
		3:1-24	3:1-12
		4:1-17	3:14-23
		6:3-22	6:5-21
		7:1-24	7:7-24
		8:1-22	8:1-22
		12:1-20	12:1-9
		22:1-19	22:1-19
Exodus	whole book	3:1-4:20	3:1-22
		12:1-19	12:1-27
		19:1-19	19:1-25
		20:1-21	20:1-26
Matthew	whole book	27:1-5	27:3-10
		28:16-20	28:1-20
Luke	whole book	7:36-50	7:36-50
John	whole book	3:1-18	3:1-22
		4:1-42	4:4-42
Acts	whole book	2:1-8	2:1-13
		2:12-24	
		2:29-34	2:31-47
		2:36-39	
		2:41-47	

APPENDIX B

ANNOTATION SUMMARY SHEETS

The following sheets are summaries of the annotations in each text from this study.

Table 14: Feature instance count

text	Non-Translated			Translated					
	Ford	Speed	Visual	Exodus 3			Genesis 8:1-14		
				E:Go	E:Har	E:Mis	G:Go	G:Har	G:Mis
CA mainCL	7	41	11	23	16	12	22	23	26
CA emb 1				15	19	18			
CA emb 2				6		4			
CA emb 3				1					
CD mainCL	9	27	6	10	14	10	2	4	6
CD emb 1				9	7	8			
CD emb 2				2		2			
CAdeg: slight	3	11	2	13	8	7	9	4	6
CAdeg: moderate	3	19	6	21	9	9	10	14	16
CAdeg: exagg.	5	5	3		1	4	1	9	6
FA		2	1		1	3			2
HA							3	1	3
IA		1		1					
LA									
MA	1	2		1				1	1
NA				2	1				
OA									
SA		2		4					
TA	1			10	4	2			
VA	1								
TOT non-rep. CA	3	7	1	18	6	5	3	2	6
FD	1	1	1		1				
HD									
ID									
LD									
MD		9	1	2	3	1	1	4	4
ND				1					
OD									
SD	2	8	2	6					
TD					2	2			
VD		2							
TOT non-rep. CD	3	20	4	9	6	3	1	4	4

Table 15: Feature duration

text	Non-Translated			Translated					
	Ford	Speed	Visual	Exodus 3			Genesis 8:1-14		
				E:Go	E:Har	E:Mis	G:Go	G:Har	G:Mis
CA mainCL	00:33	01:10	00:32	04:31	06:24	09:06	00:40	00:47	01:36
CA emb 1				01:20	01:11	02:50			
CA emb 2				00:30		01:40			
CA emb 3				00:04					
CD mainCL	00:21	00:37	00:22	03:32	06:06	08:42	00:02	00:15	00:15
CD emb 1				00:56	00:43	02:24			
CD emb 2				00:23		01:34			
CAdeg: slight	00:02	00:12	00:02	00:20	00:12	00:14	00:13	00:05	00:21
CAdeg moderate	00:03	00:15	00:04	01:06	00:16	00:25	00:22	00:13	00:34
CAdeg: exagg.	00:07	00:07	00:04		00:06	00:07	00:02	00:13	00:14
FA		00:03	00:01		00:01	00:07			00:03
HA							00:04	00:01	00:03
IA		00:02		00:02					
LA									
MA	00:01	00:02		00:02				00:01	00:02
NA				00:04	00:02				
OA									
SA		00:01		00:08					
TA	00:01			00:26	00:12	00:04			
VA	00:01								
TOT non-rep. CA	00:03	00:07	00:01	00:42	00:15	00:11	00:04	00:02	00:07
FD	00:03	00:02	00:02		00:02				
HD									
ID									
LD									
MD		00:16	00:02	00:02	00:09	00:11	00:02	00:15	00:11
ND				00:01					
OD									
SD	00:09	00:10	00:02	00:20					
TD					00:04	00:03			
VD		00:01							
TOT non-rep. CD	00:12	00:29	00:06	00:23	00:15	00:14	00:02	00:15	00:11

Table 16: Instances of features per 100 words

text	Non-Translated			Translated					
	Ford	Speed	Visual	Exodus 3			Genesis 8:1-14		
				E:Go	E:Har	E:Mis	G:Go	G:Har	G:Mis
CA mainCL	3.8	17.4	6.2	6.2	3.3	2.0	9.8	17.2	16.6
CA emb 1				4.1	3.9	3.0			
CA emb 2				1.6		0.7			
CA emb 3				0.3					
CD mainCL	4.8	11.5	3.4	2.7	2.9	1.7	0.9	3.0	3.8
CD emb 1				2.4	1.4	1.3			
CD emb 2				0.5		0.3			
CAdeg: slight	1.6	4.7	1.1	3.5	1.6	1.2	4.0	3.0	3.8
CAdeg moderate	1.6	8.1	3.4	5.7	1.8	1.5	4.4	10.4	10.2
CAdeg: exagg.	2.7	2.1	1.7		0.2	0.7	0.4	6.7	3.8
FA		0.9	0.6		0.2	0.5			1.3
HA							1.3	0.7	1.9
IA		0.4		0.3					
LA									
MA	0.5	0.9		0.3				0.7	0.6
NA				0.5	0.2				
OA									
SA		0.9		1.1					
TA	0.5			2.7	0.8	0.3			
VA	5.4								
TOT non-rep. CA	1.6	3.0	0.6	4.9	1.2	0.8	1.3	1.5	3.8
FD	0.5	0.4	0.6		0.2				
HD									
ID									
LD									
MD		3.8	0.6	0.5	0.6	0.2	0.4	3.0	2.5
ND				0.3					
OD									
SD	1.1	3.4	1.1	1.6					
TD					0.4	0.3			
VD		0.9							
TOT non-rep. CD	1.6	8.5	2.2	2.4	1.2	0.5	0.4	3.0	2.5

Table 17: Feature length as a percentage of total length

text	Non-Translated			Translated					
	Ford	Speed	Visual	Exodus 3			Genesis 8:1-14		
				E:Go	E:Har	E:Mis	G:Go	G:Har	G:Mis
CA mainCL	33.0%	57.4%	33.0%	75.8%	85.5%	84.9%	20.1%	29.7%	48.2%
CA emb 1				22.3%	15.8%	26.4%			
CA emb 2				8.4%		15.6%			
CA emb 3				1.1%					
CD mainCL	21.0%	30.3%	22.7%	59.1%	81.5%	81.2%	1.0%	9.5%	7.5%
CD emb 1				15.6%	9.6%	22.4%			
CD emb 2				5.6%		14.6%			
CAdeg: slight	2.0%	9.8%	2.0%	6.7%	2.7%	2.2%	6.5%	3.2%	10.6%
CAdeg moderate	3.0%	12.3%	4.1%	17.5%	3.6%	3.9%	11.1%	8.2%	17.1%
CAdeg: exagg.	7.0%	5.7%	4.1%		1.3%	1.1%	1.0%	8.2%	7.0%
FA		2.5%	1.1%		0.2%	1.1%			1.5%
HA							2.0%	0.6%	1.5%
IA		1.6%		0.6%					
LA									
MA	1.0%	1.6%		0.6%				0.6%	1.0%
NA				1.1%	0.4%				
OA									
SA		0.8%		2.2%					
TA	1.0%			7.2%	2.7%	0.6%			
VA	1.0%								
TOT non-rep. CA	3.0%	6.6%	1.1%	11.7%	3.3%	1.7%	2.0%	1.3%	4.0%
FD	3.0%	1.6%	2.1%		0.4%				
HD									
ID									
LD									
MD		13.1%	2.1%	0.6%	2.0%	1.7%	1.0%	9.5%	5.5%
ND				0.3%					
OD									
SD	9.0%	8.2%	2.1%	5.6%					
TD					0.9%	0.5%			
VD									
TOT non-rep. CD	12.0%	23.8%	6.2%	6.4%	3.3%	2.2%	1.0%	9.5%	5.5%

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