

Lecture 03:

ASL Morphology

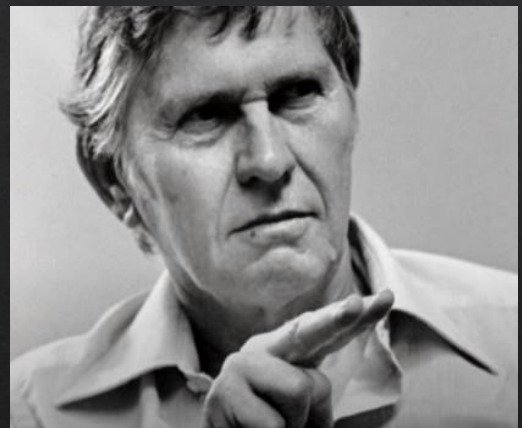


The Stokoe Model

Recall that **the Stokoe Model** was the first attempt to analyze the **internal structure** of signs and challenge the notion that signs are holistic **iconic gestures**.

Stokoe analyzed signs using **three parameters**:

- location
- Handshape
- movement



He assumed each parameter was produced **simultaneously**.

The Problem with The Stokoe Model

However, Stokoe's model was **unable to recognize sequential differences** occurring between signs because it does **NOT** require the parameters of a sign to be produced in a **prescribed order**.

This led to **inaccurate transcriptions** of signs with **missing information** and **unclear representations**.



The Liddell & Johnson Movement Hold Model

In response to the **limitations** of the Stokoe Model, **Scott K. Liddell** and **Robert E. Johnson** developed a system that represented the structure of signs called the **Movement-Hold Model**.

They claim that signs consist of **hold segments** and **movement segments** that are produced **sequentially**.



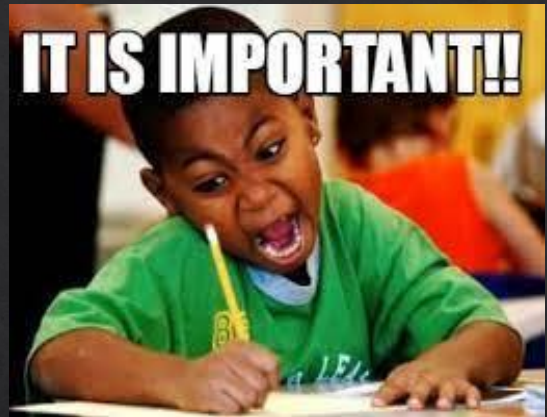
Significance of The Movement-Hold Model

The Movement-Hold Model is a significant departure from previous models because its basic units of **movements** and **holds** are produced sequentially, allowing for **precise representation** of sequences within signs.



Significance of The Movement-Hold Model

Though details of the model are numerous and complex, its **basic claims** about **sign language structure** are important.



The basic claims reflect a perspective about the structure of signs that **significantly differs from Stokoe's perspective**, and it is important to understand that difference in perspective.

The Movement-Hold Model

The Movement-Hold Model

divides each sign into sequential **hold** and **movement** segments.



A **bundle of articulatory features** is associated with each segment and contains information regarding the **segment's parameters** (handshape, location, palm orientation, and non-manual signals.)

Holds

Holds are defined as periods of time during which all aspects of the **articulation bundle are in a steady state**. There are no changes to the articulation bundle is a hold segment and it can be represented with an “**H**” for a full-length hold or an “**X**” for a shorter hold.



Movements

Movements are defined as periods of time during which some aspect of the **articulation is in transition.**

It refers to a segment in which some of the articulatory **features are transitioning** and can be represented with an “**M.**”

When you get stuck behind slow walkers

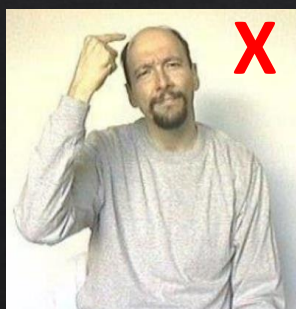


Examples of Holds and Movements

GOOD



THINK



Parameter Changes

More than one **parameter** can change **at once**. A sign may only have a **change** of handshape or location, but it may have a **change of both** handshape and location, and **these changes** take place during **the movement segment**.



Examples of Parameter Changes

For example, in the sign **UNDERSTAND**, only the handshape changes; in the sign **GRANDMOTHER**, only the location changes; however, in the sign **FASCINATING**, both the handshape and the location change, while the sign is moving.

Other Parameter Changes to Consider:

Handshape: **RUN-OUT, GET, GUESS**

Location: **PARENTS, KING, BODY**

Orientation: **DIE, DON'T-KNOW, DISOBEY**

Strong vs. Weak Hand

The transcription system uses the term **strong hand** to describe the dominant hand and the term **weak hand** to describe the non-dominant hand.

Sometimes, however, signers switch their hand dominance, but the **Liddell & Johnson transcription system** allows for this to be noted.



Contour and Contact

Contour allows a **movement shape** to be described (for example, straight vs. curved).

If any **contact** occurs during a segment, a plus sign (+) is used to show the contact.

Girls be contouring like...



The Movement-Hold Model Abilities

This system allows linguists to **precisely record** the hand configuration used in the sign (**handshape**), the focal site where the hand is placed (**location**), the direction the palm faces in relation to the body (**orientation**) and any nonmanual signals (**NMS**) that accompany the sign.

This ability was **missing** in other notation systems which makes **this system significant**.

Consider the ASL sign for WEEK

The sign **WEEK** begins with the **shorter hold (X)**, with the **strong hand** at the base of the palm of the **weak hand**. The strong hand then **moves (M)** to the fingertips of the weak hand and ends with a **full hold (H)** in that location.

The **only change** in this sign is in the **location of the strong hand**, from the base of the palm to the fingertips of the weak hand.

Movement-Hold Model: WEEK

			Unit 1	Unit 2	Unit 3		
	Timing Unit		X	M	H		
	Contour						
	Contact		+	+	+		
	Local Movement						
Strong Hand	Handshape		1		1	}	articulatory bundle
	Placement (Location)	focal site	Base of palm of weak hand		Fingertips of weak hand		
	Rotation (Orientation)		Palm facing down		Palm facing down		
	Nonmanual signal						
Weak Hand	Handshape		B		B	}	articulatory bundle
	Placement (Location)	focal site	In front of torso		In front of torso		
	Rotation (Orientation)		Palm facing upward		Palm facing upward		
	Nonmanual signal		—		—		

Can You Guess the Sign?

			Unit 1	Unit 2	Unit 3		
	Timing Unit		X	M	H		
	Contour						
	Contact						
	Local Movement						
Strong Hand	Handshape		C		S	}	articulatory bundle
	Placement (Location)	focal site	Ipsi nose		Contra nose		
	Rotation (Orientation)		Palm facing upward		Palm facing downward		
	Nonmanual signal		—		—		

Movement-Hold Model: GUESS

Movement-Hold Model: GUESS

- The sign **GUESS** begins with a **C handshape** and ends with an **S handshape**.
- The palm orientation begins with the palm facing **slightly upward** and ends with the palm facing downward.
- This sign begins with a **shortened hold (X)** on the **strong side** (also referred to as ipsilateral or ipsi) of the nose at about eye level. It moves to the **weak side** (also referred to as contralateral or contra) and ends in a **hold (H)** near the **weak side** cheek.

Examples of Possible Sign Structures



COLOR

H



GOOD

H M H



BLUE

X M X

FOR: X M H

SCHOOL: X M X M X M H

MAYBE: X M X M X M X M X

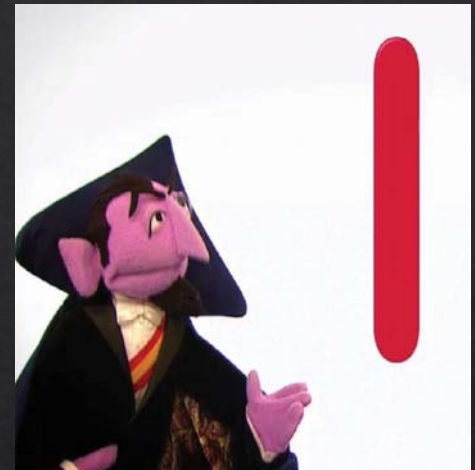
Liddell & Johnson Movement-Hold System

Though the details of the **Liddell & Johnson Movement-Hold transcription system** are beyond the scope of this course, it is important to understand **four basic components** of the system.



Liddell & Johnson Main Points #1

1. The **Liddell & Johnson model** makes the claim that the basic units of signs are **movements** and **holds** & are **produced sequentially**.



The information about handshape, location, orientation, and nonmanual signals is represented in **bundles of articulatory features** found in each unit.

Liddell & Johnson Main Points # 1

This claim is **very** different from **Stokoe's** assertion that the parameters of **signs are produced simultaneously**, but it parallels theories of the **segmental structure** of spoken languages.

Liddell & Johnson claim sign languages and spoken languages are the **same** in their **basic structure**, adding support to arguments that sign languages are **legitimate and viable languages**.

Sign languages are **not unlike spoken languages**, as Stokoe said. They are like them in the most basic way.

Liddell & Johnson Main Points # 2

2. The **Liddell & Johnson system** solves the descriptive problems presented by the Stokoe system.

It clearly shows that **sequence** is very important and **contrastive** in some signs, and it allows sequences to be **described efficiently**.



Liddell & Johnson Main Points # 3

3. The Liddell & Johnson system provides adequate detail for the description of signs.

Stokoe clustered the A, T, and S handshapes into one, despite their possible contrastive use.

Stokoe counted 19 handshape primes, while Liddell & Johnson counted more than 150. This level of detail allows the system to document any sign language.



Liddell & Johnson Main Points # 3

In addition, the location and orientation features have explicit descriptions that make distinctions Stokoe's system does not.

For example, the signs CONGRESS and CHRIST differ in the final location.

Stokoe's system describes both locations as on the torso which is not specific and cannot accurately represent these signs.

Liddell & Johnson Main Points # 4

4. The **Liddell & Johnson system** describes **thumb configurations** separately from finger configurations.



This is a **contrastive feature** of some signs, such as **LATER** and **TWENTY**. What sets this notation system apart is its **ability to provide a clear and precise way** to describe the **differences in any sign**.

Movement-Hold Model Summary

So what has this model accomplished?

- This model shows **sequential contrasts exists in ASL** just like in any other language.
- It provides a **more complete way to transcribe ASL signs** and solves the problems that Stokoe's System had.
- It claims that the **5 ASL parameters** are distinctive features within articulation bundles and not segments themselves.

Phonological Processes

Now that we have talked about the **parts of signs** and how they are **organized**, we can talk about ways in which **sign structure may vary**.

I don't judge people based on
race, creed, colour or gender.

I judge people based on
spelling, grammar,
punctuation and
sentence structure.



Phonological Processes

The **parts of signs** may occur in different order, and the parts of signs **may influence** each other. These variations are due to **phonological processes** (that is, the ways in which the parts of signs interact with each other).



Epenthesis

In phonology and phonetics, the **insertion of sound or letter** in the middle of a word is **Epenthesis**. According to some linguists, epenthesis is often motivated by the need to make consonant contrasts more distinct.

The pronunciation of “jewelry” as “jew**E**lry” is the result of **epenthesis**, as the saying “ath**A**lete” rather than “athlete.”

When Someone Pronounces The "L" In Salmon.



Movement Epenthesis

Signs occur in **sequence**, which means that the segments that make up signs occur in sequence. Sometimes a **movement segment is added** between the last segment of one sign and the first segment of the next sign. This process of **adding a movement segment** is called **movement epenthesis**.



Example of Movement Epenthesis

For example, **movement epenthesis** can be seen when signing **FATHER** followed by **STUDY**. The basic form of both signs is a **hold with internal movement**, as follows:

FATHER (H)

STUDY (H)

But when the two **signs occur in sequence**, a **movement is inserted** between the two holds, so that the sequence looks like this:

FATHER (H M)

STUDY (H)

Hold Reduction

Movement epenthesis is related to another phonological process called **hold reduction**. **Hold reduction** shortens holds between movements when **signs occur in sequence**.

For example, the sign **GOOD** is composed of a **hold**, a **movement**, and a **hold**. The sign **IDEA** is composed of a **shortened hold (X)**, a **movement**, and a **hold**.



I don't know why I can't lose weight.
Must be my trainers fault.

Hold Reduction Example

When the two signs **occur in sequence**, the last hold of **GOOD** and the first hold of **IDEA** become **shortened holds**. The whole process would look as follows:

GOOD (H M H) & **IDEA** (X M H)

Movement epenthesis: (H M H M X M H)

Hold reduction: (H M X M X M H)

This is a **fairly common** process in ASL, and occurs often when creating **compound signs**.

Metathesis in English

In phonology, **metathesis** is what occurs when two **sounds or syllables switch places** in a word. Many of the English words have been formed from **metathesis**, by changing a single letter and altering the spelling and meaning of the word. **Virtually all languages have examples of metathesis.**

Examples of metathesis in English:

- Instead of “**ask**” saying “**aks**”
- Instead of “**comfortable**” saying “**comfterble**”

Metathesis in ASL

Metathesis also occurs in ASL. Sometimes parts of the segments of a sign can **change places**. Simply put, **if a sign allows metathesis**, it can vary in its **start and end location** and both variations are considered correct.



ASL Metathesis Examples

Many signs **allow metathesis** such as:

- **CONGRESS**
- **FLOWER**
- **RESTAURANT**
- **TWINS**
- **PARENTS**



Other signs **DO NOT** allow metathesis such as: **BODY, KING, INDIAN, CHILDREN,** and **THING.**

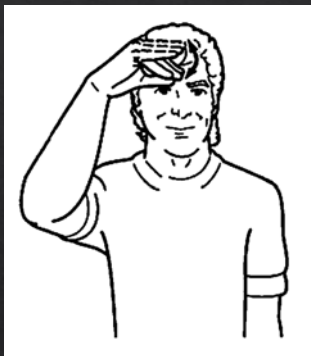
Assimilation

Assimilation means that a segment takes on the characteristics of another segment near it, usually the one just before it or after it. Many have also called this **contracting** or **merging** both signs into one new sign.



ASL Assimilation Examples

BOY



+

MARRY



=

HUSBAND



KNOW



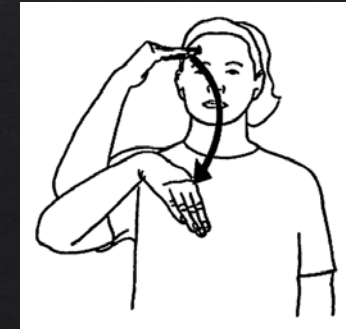
+

THAT



=

KNOW-THAT



Accidental Assimilation

Sometimes signers may show **assimilation** that is technically **not proper in ASL** due to **various reasons** such as signing too fast, being tired, or careless. Sometimes it can even be a “slip” the same way we sometimes mispronounce a word in English.

Example of Accidental Assimilation in ASL:

*Signing “**ME COOK**” but assimilating the handshape of **COOK** for the sign **ME**.*



Weak Hand Deletion

Sometimes the **weak** or **non-dominant** hand is **deleted** from two-handed signs. This is more likely to occur when both hands perform an identical action but this isn't always the case.

COW



CHILDREN



LATER



GOOD



In the examples above, the **weak hand** has been **deleted**. The original two-handed signs for each are **still considered correct** in ASL but **rarely used** by the Deaf.

Building New Signs

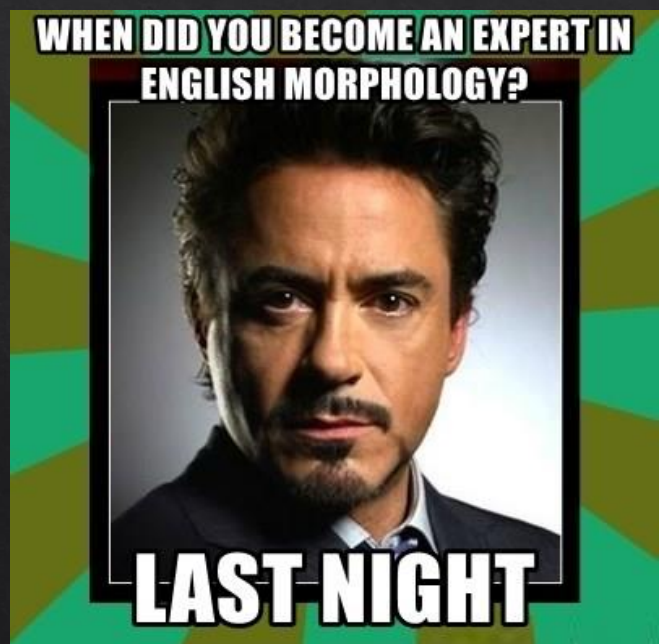
Recall **phonology** is the study of the smallest contrastive parts of language. The parts of language that we study in **phonology** do not have meaning. So when we study phonology and we look at the sign **THREE-WEEKS**, we are **only interested** in the fact that the sign has a handshape, a location, an orientation, and a movement.

The fact that the handshape has the specific meaning of the quantity three is part of **morphology**.

Morphology

Morphology is the study of the smallest **meaningful units** in language and of how those meaningful units are used to **build new words or signs**.

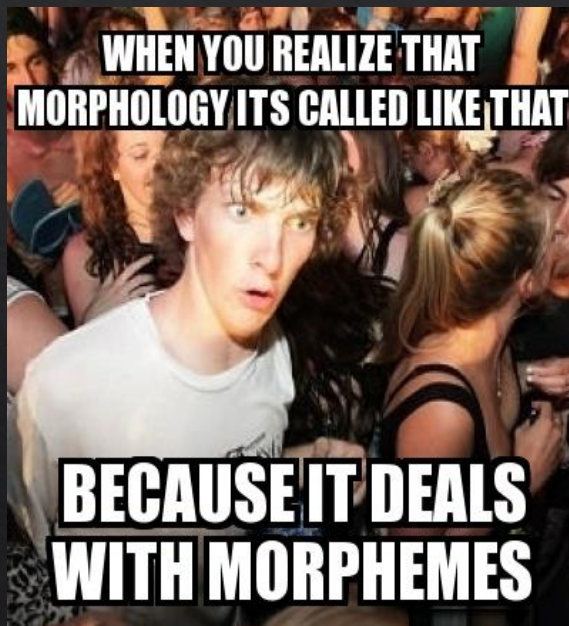
Put another way, morphology is the **study of word formation**, of how a language uses smaller units to **build larger units**.



Morphemes

The smallest meaningful unit in a language is a **morpheme**. Some morphemes can occur by themselves, as independent units. These are called **free morphemes**.

The English words **cat** and **sit** are examples of **free morphemes**; the ASL signs **CAT** and **LOUSY** are examples of **free morphemes**.



Morphemes

Some morphemes **cannot** occur as independent units; they **must** occur with **other morphemes**.

These are called **bound morphemes**.

The English plural **-s** (cats) and third person **-s** (sits) are examples of **bound morphemes**; the 3 handshape in the ASL signs **THREE-WEEKS** and **THREE-MONTHS** are examples of **bound morphemes**.



Examples of Morphemes

The smallest meaningful unit of a language.

A **free morpheme** is when it can stand alone as a word.

Examples: “dog” in English

There are many free morphemes in ASL.

Examples: AGAIN, LOVE, SEE, YOUR

Bound morphemes are the meaningful units that cannot stand alone. They are the affixes attached to a word.

Example: unstoppable (3 morphemes)

In ASL: **THREE-MONTH**, **FOUR-WEEK**, etc. The numeral handshape is a "**bound morpheme**" that is affixed to a ASL word, such as day, week, month, year and some other words/signs. (*Number Incorporation*)

How many Morphemes?

Remember: the smallest meaningful unit of a language.

- Unladylike – **3** morphemes (un – lady – like)
- Dogs – **2** morphemes (dog – s)
- Technique – **1** morpheme (technique)
- Boyish – **2** morphemes (boy – ish)
- Crocodile – **1** morpheme (crocodile)
- Desirability – **3** morphemes (desire – able – ity)
- Replacements – **4** morphemes (re – place – ment – s)
- Grandmothers – **3** morphemes (grand – mother –s)
- Bicycle – **2** morphemes (bi – cycle)

Building New Signs

Languages have **many ways** to build new words or in ASL, signs.

- Using the patterns of words or **signs that already exist**, they can create totally new forms
- They can also **make compound words or signs** by combining two forms that already exist.
- They can **borrow words or signs** from other languages
- ASL can create new signs **based on the writing system** of English.

Types of Morphology

As a language uses smaller units to build larger ones, **two different** processes are at work.

Some of the larger units built from smaller units are the result of a **derivational process**, and some are the result of an **inflectional process**.



Derivational Morphology

Derivational morphology is the process of making new units for the language, in other words, **deriving new units (new words or signs)**.

For Example:

When the suffix **-er** is added to the **verbs** write, read, and sign, the **result is a noun** with the meaning of "person who does the activity of the verb." The nouns **writer**, **reader**, and **signer** are examples of **derivational morphology** because they are new words (nouns) **derived** from the verbs write, read, and sign.

Affixes

In spoken languages, these pieces of added language are called **affixes**. Affixes are **bound morphemes** that attach to a **free morpheme**, also called a **root** or **stem**, to form a more complex **multimorphemic** word.



Prefixes and Suffixes

English **affixes** can be **prefixes** or **suffixes**.

- **Prefixes** come **before** the root: un-, in-, re- as in **un**decided, **in**decent, and **re**charge.

- **Suffixes** come **after** the root: -ness, -ing, -s, as in red**ness**, try**ing**, and cat**s**.



Derivational Morphology in ASL

ASL also contains examples of **derivational morphology**. In these cases, small units of ASL are put together to create new larger units.

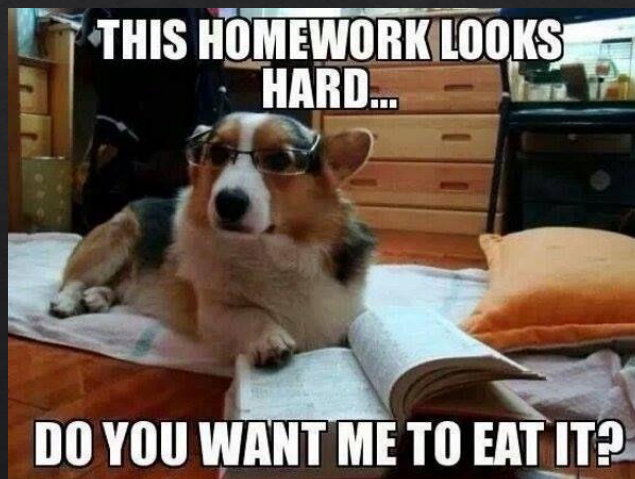
- As in English, ASL **nouns can be derived from verbs** (for example, CHAIR from SIT).
- **Compounds are formed** when individual signs combine to create a new sign with a new meaning (BOY + BABY = SON).
- **Fingerspelled words** can take on the characteristics of a sign by dropping some of the letters (J-O-B) becomes J-B, with a distinct movement of its own).

Derivational Morphology in ASL

- ASL also allows for **numeral incorporation**, in which a handshape representing a **specific number is incorporated** into the segmental structure of a sign to convey an explicit period of time (**THREE**-WEEKS, **FIVE**-MONTHS, **TWO**-DAYS).
- The **agent suffix can be added** to existing signs to make nouns like TEACHER, LAWYER, and ACTOR.
- New **signs can also be created via blending and depiction**.

Inflectional Morphology

Inflectional morphology is different from derivational morphology. While derivational morphology is about the creation of **new units**, **inflectional morphology** is the process of **adding grammatical information** to units that already exist.



Inflectional morphology Example

For example, when **-s** is added to nouns in English, the result is the **meaning of plural** cats**s**, dogs**s**, books**s**, and these units remain nouns. The **-s** is known as an **inflection**.

Another example is the **-s** that is added to verbs with the **meaning of "third person,"** as in walks**s**, writes**s**, or signs**s**. This **-s** is also an inflection.

The inflections **add grammatical information** to a unit; they **do NOT result in the creation** of a new unit.

English Nouns from Verbs

English has a group of **verbs** from which **nouns have been made**.

In each of these cases, the difference between the verbs and nouns is **found in the stress** placed on different syllables.

laid is pronounced like paid but not said and said is pronounced like bread but not bead and bead is pronounced like lead but not lead



English Nouns from Verbs

NOUN vs. VERB			
	increase	increase	
	decrease	decrease	
	import	import	
	export	export	
	discount	discount	
	refund	refund	
	conflict	conflict	
	contest	contest	
	insult	insult	

English Nouns from Verbs

Another example in English occurs when the suffix **-er** is added to verbs, which transforms the **verbs into nouns**. For example, adding **-er** to the English verbs write, dance, walk, and think **results in the nouns** writer, dancer, walker, and thinker.

Again, there is a **regular pattern** in the **relationship** between verbs and nouns. These patterns illustrate an earlier point- **morphology** is about the **creation of new units**, and one way to create new units is to take a form that already exists in the language and change it in some way.

Morpheme Form vs. Process

These two examples from English morphology illustrate the difference between a morpheme that is **a form** and a morpheme that is **a process**.



Morpheme as a Form

In the case of adding **-er** to a verb in order to form a noun (walk/walker), **-er** is **a form** that consists of two sounds.

It is **a form that is added** on to other forms to **create a new word**.

Since it **cannot** occur by itself, it is a **bound morpheme**.



Morpheme as a Process

In other cases, there is **no actual form** being added that **we can see**.

For example, the process of **moving the stress** to the first syllable results in the creation of a noun related to the verb. This concept of the **morpheme as a process** is important in understanding **ASL morphology**.

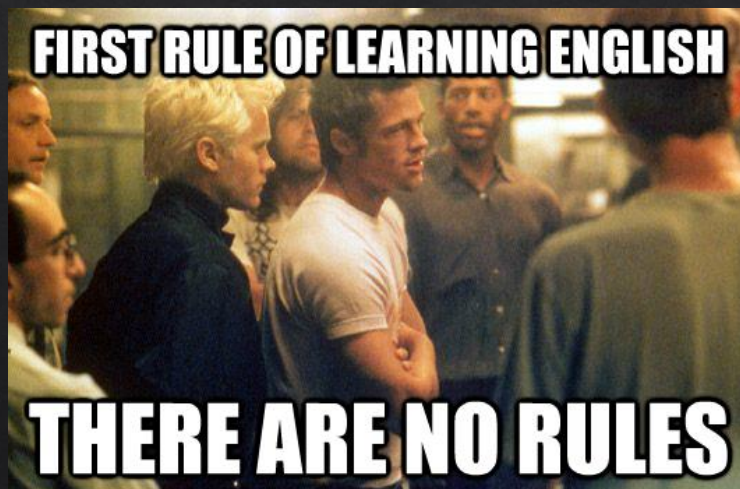
DO NOT TOUCH MORPHEME
WITH BARE HANDS.



RISK OF INFLECTION.

ASL Nouns from Verbs

ASL also has nouns that can be created from verbs. They are **minimal pairs** that **differ** only in **movement**. These signs are known as **Noun Verb Pairs**.



Noun Verb Pair Examples

The following are examples of **noun verb pairs** where the only difference in the signs is the **movement**, once indicating **a verb** and twice indicating **a noun**.

- **EAT – FOOD**
- **SIT – CHAIR**
- **GROW – PLANT**
- **FLY – AIRPLANE**

Once for a VERB,
twice for a NOUN!



Reduplication

In these examples, the **noun is formed** by **repeating the movement** of the verb. This process of repetition is called **reduplication**.

Similar to the **derivation of nouns** from verbs in English, the **morpheme** in ASL is **the process of reduplication**.

We do NOT add a form to the ASL morpheme **SIT** to derive the noun **CHAIR**; we **reduplicate** the morpheme **SIT**.

Review

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