

Lecture Note on LTS

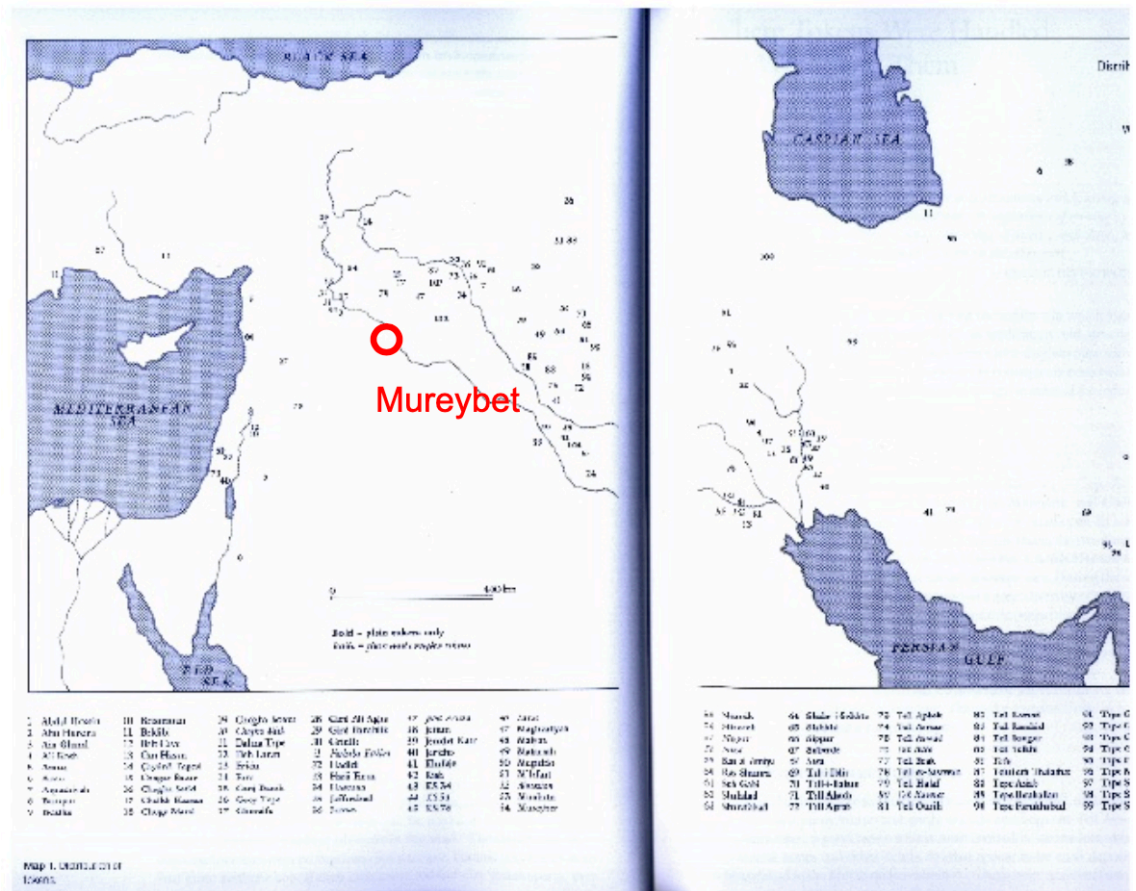
Lesson 1

- A language is a structured system of communication used by humans, based on speech and gesture (spoken language), sign, or often writing.
- Human Language
 - is natural rather than artificial
 - is first and foremost vocal, spoken in order to be heard
 - is creative, capable of combining the basic units to form an infinite set of well-formed grammatical sentences which are never before produced or heard
 - is acquired through social interactions
 - is imperfect, allowing ambiguity and redundancy

Lesson 2

- In this course we define “language” strictly as human language
 - natural language/ordinary language, for now
 - between humans, for now
 - in speech, for now
- Language → Linguistics
 - phonetics
 - studies the physical properties of *sounds*
 - phonology
 - studies the abstract properties of *sounds in a system*
 - morphology
 - studies the *forms of words*
 - semantics
 - studies the *meaning* of words, phrases and sentences
 - syntax
 - studies *the ways words combine* to form phrases and sentences
 - pragmatics
 - studies how we use language to do things in the world
- How did writing originate?
 - pictographic theory (William Warburton (1698-1779))
 - proposed the “pictographic theory” of the origin of writing
 - first *evolutionary* theory of writing

- all scripts developed from narrative drawings that became more simplified and abstract over time
- PICTOGRAPHIC → IDEOGRAPHIC → PHONETIC
- token theory
 - proposed by Leo Oppenheim, but most associated with Denise Schmandt-Besserat
 - early Mesopotamian people kept track of goods with unique tokens
 - Oppenheim showed that “clay envelopes” were used in Nuzi (northern Iraq) in 2000 BC
 - envelopes had to be broken to count tokens, so they were eventually impressed with the tokens to keep track of the contents within
 - impressions on clay tablets finally replaced the envelopes
 - unchallenged for ~200 years
 - problem: many symbols do not seem to have pictographic origin
 - excavations at Uruk (1929-30) unearthed Sumerian tablets from 4000 BC in which the 'pictograph' for sheep was a circle with a cross in it
- prior to the 18th century, the creation of writing was the stuff of myth and legend
 - writing systems usually came into being spontaneously and fully formed
 - granted by the gods as a form of divine communication
 - sages or lords needed a way to record important deeds
- writing invented at least three times
 - Mesopotamia: Mesopotamian cuneiform
 - China: inscribed Chinese oracle bone
 - pictographic inscriptions on ox bone or tortoise shell
 - 12th – 11th centuries BCE
 - earliest known Chinese writing
 - part of pyromantic divination ceremony
 - bones were inscribed with prophetic markings and burnt
 - prophets interpreted cracks through the inscriptions
 - Mesoamerica: carved Mayan glyphs
 - William Mason: “Owing to the limitations of primitive culture, the inexperience of the scribes and the lack of artistic ability, each scribe drew the characters in his own crude, faulty way, often incorrectly; so that it is quite impossible always definitely to distinguish the character and identify it with the object intended.”
 - token distribution



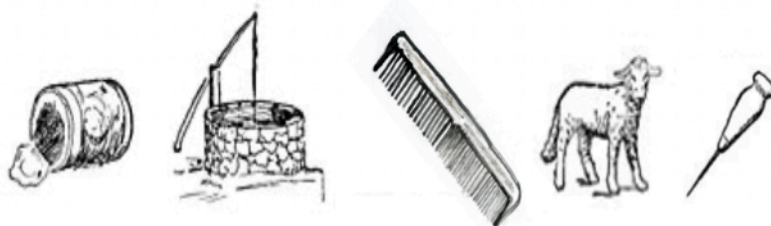
- 8000 BC, clay tokens used as a representational system for keeping track of goods
 - conical token = unit of grain
 - triangular token = bread

Lesson 3

- How sound is represented in writing
 - the Rebus principle
 - the Acrophonic principle
- the Rebus Principle
 - a rebus is a message spelt out in the pictures that represent sounds rather than the things they are pictures of
 -



I bee leaf






I bee leaf ant rose can well comb ewe awl


- a simple analysis of pronunciation
- establish homonymic relations (same/similar based on general impression of the word form as a whole)
- rebus as the most important type of old Chinese characters
 - 又 (originally pictogram of right hand), which is a homophone of the word for "again", therefore the graph "又" can be used to stand for the sound "yòu" which also means "again"
 - after the original graph was borrowed, a new graph was invented for the original meaning. In this case, 右 (yòu, "right, as opposed to left") was invented to stand for the original meaning of "the right hand"
 - 来 (originally pictogram of the wheat plant), which is a Homophone of the word for "to come" in old Chinese, after the original graph was borrowed, a new graph was invented: character 麥(麦) (mài, "wheat")
- exact meaning of Rebus principle: an existing graph is borrowed to be the graph of another homophonous referent
- problem of Rebus principle: too many homonyms
- Rebus as the basis for semantic- phonetic compounds
 - a semantic element, which represents or hints at meaning: 馱, 駿, 驥, 驹, 驼
 - a phonetic element, which represents or hints pronunciation: 妈, 玛, 码, 吗, 蚂, 犸, 骂
- the Acrophonic Principle
 - Acrophonic principle links the pictograph with the initial sound of the pronunciation


- deeper analysis of pronunciation → establish an initial sound and separate it from the rest of the pronunciation form → speech as a segmental structure below the level of syllable
- once speech is seen as segmental, and the segments are associated with individual characters, they become objects with an abstracted existence of their own
- how Egyptian Hieroglyphs work via the acrophonic principle

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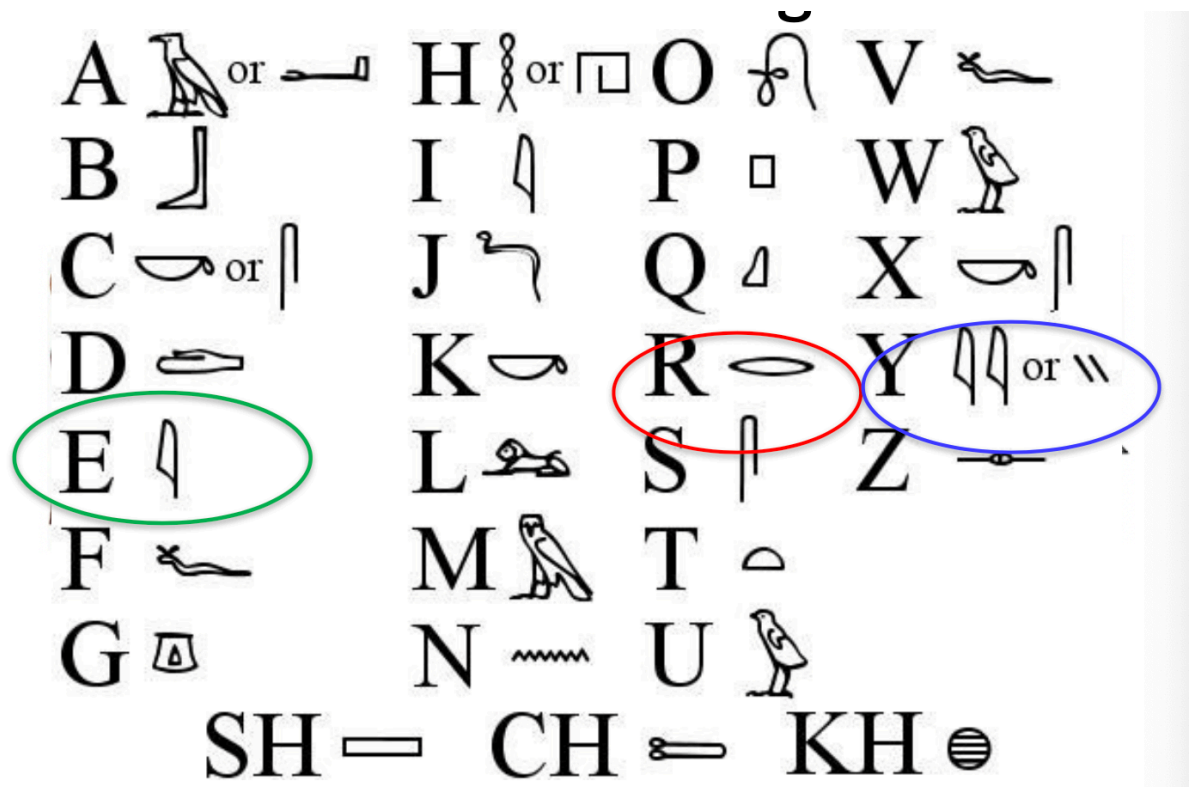
A hieroglyphic representamen (a T1 icon)	Referent Semantic value (meaning) : a single reed
	

A hieroglyphic representamen (a T1 icon)	Its phonetic value (i.e. pronunciation) of the Referent)
	/yodh/

A hieroglyphic letter (a phonemic symbol in certain contexts)	The phoneme (sound that carries/changes meaning) represented by the letter
	/y/ OR /i/

As a letter of the alphabet for the language spoken by ancient Egyptian	Its phonemic value
	/y/ OR /i/

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- Valério & Silvia Ferrara (2020) survey the evidence case by case, detailing trajectories of phonetisation following a scheme that considers:

1. Exclusive recourse to rebus: Sumerian and Chinese
2. Use of both rebus and acrophony: Egyptian, Anatolian Hieroglyphic, and Nahuatl
3. Exclusive recourse to acrophony: Maya and Proto-Sinaitic

- Symbol

- convenient & must be learned and agreed upon
- is it possible to develop a graphical symbol system that is universal?
 - attempt 1: the Voyager and Pioneer spacecraft
 - the “Pioneer Plaque”
 - the Voyager “Golden Record”
 - instructions, in symbolic language, explain[ing] the origin of the spacecraft and indicat[ing] how the record is to be played
 - contains sounds and images to portray diversity of life and culture
 - based on (hopefully) universal scientific concepts of physics and chemistry

- Charles K. Bliss

- born Charles K. Blitz in Austro-Hungarian Empire
- changed name to “Bliss” in order to avoid the negative connotations in war-time
- in 1938, detained in Dachau concentration camp
- Blitz’s wife secured his release and they fled to Shanghai where Blitz encountered Chinese characters
 - believed Chinese characters were ideograms

- created Blissymbolics, a universal, ideographic writing system to overcome language barriers
- Blissymbolics
 - ideographic writing system in which the characters do not correspond to the sounds of any spoken language
 - several hundred symbols representing different concepts
 - characters can be composed together to generate new symbols representing new concepts
- limitations of Blissymbolics
 - difficult to express specific names or detailed descriptions
 - non-general objects/concepts requires an arbitrary indexing system
 - blissymbolics has various non-universal features
 - SVO word order
 - left-to-right reading
 - copular "to be"
 - tense markers
- overtime, Blissymbols gradually becomes LESS universal
 - system constantly adapted to suit the needs of specific language communities
 - different users add symbols and combinations on case-by-case basis
 - Israel made Blissymbols run from right-to-left
 - teachers used it as a stepping stone to full literacy in native languages
- still primarily utilized only by speech and language therapists