Name: Albert Dale Palacio

Date: May 12, 2017

1. Communicating with natural language without any skill, contextual perception, and experience is hard because we purposely alter information to make it more understandable to other people. For example, I am a Cebuano, whenever I speak to our Tagalog brethren I usually switch to English just to get a point across. However, if the person I’m conversing to does not understand English, I would either do one of two things, I speak simpler slower English, or speak Tagalog up to my capability.
2. A lexicon is a person or a machine’s word bank; a dictionary is a language’s word bank. Say for the English language, there might be unknown words for some people who didn’t experience vocabulary training compared to the trained.
3. A lexeme is a part of a meaning system of a language and a morpheme is a meaningful unit. Lexemes are grouped by a meaning, for example, inflection of the base form, give, gives, giving, gave are all part of the lexeme give or give up, raise the white flag, and surrender might also be considered as part of a single lexeme. Words are composed of morphemes for example, in the word kind, we cannot remove the –d because this would represent the word kin, nor add –ness because this would change the meaning given a sentence that involves maybe the word ‘different’. In the example “She talks”, we can now consider the verb is in a third-person singular present tense form.
4. These are considered linguistic tasks because we need to tap our linguistic knowledge to perform these. Let’s say we don’t have linguistic experience on a language. We cannot recognize sentence if at first we don’t recognize the language itself. We may determine the structure by way of experiences and patterns on other languages however, this may lead to horrible results. We cannot extract their correct meaning because we didn’t establish a lexicon then once we interpret and manipulate the information to store and share, we might give off the wrong information and understanding.
5. A
6. Multi-tape Turing machines are in nature multiplicatively stateful. In a way, given a complex system we can model a transition from state to state using the multiple tapes as given. In NLU, this proves useful as for example, once we reach a certain topic state of a conversation we immediately go into a certain tape that would branch out to other multiple tapes until we reach a single tape and its end.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| S | B | S | B | S | B | S |
| S, A | S, B | S, A | S, B | S, A | S, B | S, A |
| a | b | a | b | a | b | a |

Not possible.