COMPARE THE EVOLUTION AND DEVELOPMENT OF PROFESSIONAL AND UBIQUITOUS PERCEPTUAL DESCRIPTIVE LANGUAGE

ANONYMOUS AUTHOR 1[*1]

[*]Corresponding Author: name@domain.com
[1]This Department, University X, City, Country

1. Background

Communication has made our society value much more than the sum of individuals. Language as a tool of communication is vital to the development of our society. Researches on the evolution and development of language inspired us about the approach and behaviors of communication.

1.1 Descriptive Language and Language Evolution

In many of the language models, nouns and verbs were extensively discussed. Different from names and actions, the evolution of descriptors seems much more flexible and various in different language systems, which made it more difficult to study. However, descriptors play a much more important role in perceptual communication than words of names and actions. When we need to communicate our feelings on certain stimulus, sign language would become less efficient, since it expresses mainly representation(names) and movements(actions). Even with the aid of facial expression, emotions could not be easily decoded (Goldstein & Feldman1996).

If we assume the evolution of language is based on things that are necessary to communicate in our ancestors' lives, descriptors should have evolved at similar time as the words of names and actions. Perceptions of the environment helped our ancestors to get enough energy from food and avoid being poisoned. The perception of bitterness might be an indicator of poisonous or unwanted food (Reed & Knaapila 2010). The feeling of illness could be an indicator of getting poisoned. The descriptor "poisonous" described a thing that makes people feel ill. All the above descriptive terms could be very difficult to express by sign language without enough common ground.

The necessity of descriptive language during the language evolution might be an evidence of vocal or vocal-sign combined theories of language origin. Animals and human tend to scream or frown while they experience pain or illness (usually a scream could be more efficient grabbing attentions). Vocal signals and facial expressions could be better related to invisualizable perceptions and more efficiently evoke consensus.

1.2 Essay Objectives

Despite its importance for language origin, descriptive communication seems vary among different languages. In some language, the words of names and actions might be extended or combined into descriptors. In some other cases, descriptors can also be used as names or actions. Furthermore, in a relatively mature society, people have specialized roles. The development of specialization might have affected the development of descriptive language. Within the scope of perceptual descriptive language, I am particularly interested in the development differences of professional and ubiquitous descriptive language.

Therefore, in this assay I will review some related researches within the topic of "professional and ubiquitous perceptual descriptive language". My discussion will be concluded with a reflection and short proposals of further research.

2. Review of Current Researches

As addressed in (McAuley & Leskovec 2013), compared to amateurs, experts tend to use more sophisticated descriptors when reviewing certain products. This discussion evoked a question: "Are experts speaks a distinct language?" Expert language seems only used in the expert societies. People from other cultural societies might not even understand certain "professional descriptors" (e.g. astringent aftertaste).

Some theories regard expert language the same as daily languages. In the case of amateurs, their vocabularies could develop as they got more and more experience in the field. Mukherjee et.al (2016) developed a language model which take the continuous experience development into account modelling the descriptors used in comments. However, if we see amateurs as "language learners" who continuously learnt the professional language, shall we insist again that professional descriptors are distinct from common ubiquitous language?

A good way to proceed this question is to look at the development of professional and common descriptors. The development of common descriptors is based on common ground and highly influenced by environment and culture. For example, in the countries with more spices in their cuisines, aroma and mouthfeel related attributes might be much more developed in their language than those countries with less various cuisines.

In descriptive professions, despite their living culture and environment, experts try their best to delicately describe any subtle differences in their perception of certain products. Take the cheese case from Drake et.al (2001) as an example, the development of a cheese lexicon usually involves both language experts and tasting experts. The vocabularies were developed and modified in a very small society, with limited varieties of objects (cheese samples). It seems the professional language is developed from common language, then grow and mutate in a smaller society.

Comparing the development of professional and common descriptive language, we may infer that professional languages can be much more difficult to become ubiquitous in a less descriptive culture. For example, a cheese lexicon in an Eastern Asian country (in which cheese consumption is low) might be more difficult to develop, and at the same time, more difficult to be understood and communicated as common language.

In an assumed situation, the interaction of professional and common descriptive languages can loop with each other: Professional lexicon born and mutate from common language. Common language then merges professional lexicons while the societies gain more experience with more amateurs.

However, in most societies, professional languages stay within experts while the majority of the society tends to use simpler descriptors. As amateurs gain more experience, they would become a member of experts. Professional descriptors will have very little chance to become common language since they will only be used for the communications in expert societies.

3. Reflections and Further Researches

Since the professional descriptive language would probably remain distinct from common descriptive language, shall we make efforts to translate them?

It might be necessary if the professional organizations want to reflect their perception description to the common society and retrieve information back from them. A good example would be consumer-product companies.

In another case, if we want to teach robot semantic interpretation of perceptions, it is necessary to first understand our perceptual communication. Professional descriptive languages are usually closer to machine perceptions (since they tend to be more precise and delicate). It might be easier to translate machine perceptions to expert perceptions like some researches in Röck et.al (2008)'s review on electronic nose. In this case, with a translation of professional descriptors to common descriptors, robots would have a chance to step further in becoming semantically social.

In order to make these steps, more researches on the evolution of descriptive language are needed. For example, how do we transfer names and actions into descriptors (e.g. berry flavor in wine)? How do we relate different descriptors (e.g. roundness describing both shape and sound)?

New methods and models to obtain descriptive information will also help with the development of this field. Inspecting into online comments is a good way of studying common descriptive languages. Perceptionscape researches (e.g. soundscape) are also helpful in archiving descriptive language information.

Conclusion

Perceptual descriptive language can differ from cultural societies with different expertises. Evolution studies of this differences will benefit the understanding of language origin as well as inspiring the future development of ubiquitous perceptual communication.

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