Linguistic relativity and ColorPerception : Testing Sapir Whorf Hypothesis on Assamese and Bodo Speakers

AnkurJyotiTalukdar

Research Scholar, Department of Assamese, Gauhati University

ORICID Id: 0000-0002-2522-8429

Manabendra Das

Research Scholar, Department of Anthropology, Cotton University

Abstract :

The Sapir Whorf hypothesis is one of the most debatable concepts of the twentieth century and it is still juggling the minds of researchers. Being anthropologists both supported the idea of influence of language over human cognition. Their idea on linguistic relativity said that our language determines how we see the world. Color perception has been under the radar of this theory since introduction. These debates often discuss how people with different first languages labeledcolor shades in a different way and due to that identifying color became hard for outsiders of that particular community. That theory can be tested in the context of the anthropological linguistic field of Assam. Both Assamese and Bodo languages are major languages of the region with rich history, constitutional status, political influence through language policy and size of the native speakers. Though both the languages influenced each other over the period of time but in some aspects both differ drastically. Linguistic terms to convey color perception is one of them. Bodo Speakers have six different names for six different shades of yellow. But Assamese language speakers don't have that luxury. In that situation, how did Assamese speakers label those shades? If they can distinguish them or not is gonna be the centre question of the paper. That might also give us some light on the dynamics of the Sapir Whorf Hypothesison the context of the Linguistic field of Assam and North-East as a whole.

Keywords : Anthropological Linguistics, Assamese Language, Bodo Language, Color Perception, Linguistic Relativity, Sapir-Whorf Hypothesis

Introduction

As an interdisciplinary area of study, Anthropological Linguistics comes into the surface in the third decade of the twentieth century. It was first discussed in 1929 by Sapir but got popularised in 1950. Edward Sapir, an American anthropologist and a leader of American structural linguists gave an enormous theory of language which was later followed by his pupil Benjamin Whorf. In linguistics the Sapir-Whorf hypothesis states that the thought of an individual is only understood by his own people who use the same language as the medium of expression but not by an individual who speaks another language. For example Some characteristics of Assamese language are well understood by the people who use the same language but not a person who speaks other than Assamese. This is well known as Sapir-Whorf Hypothesis. According to the hypothesis native language shows much more influence on individual thinking. The hypothesis was found controversial for two reasons, i.e. theoretical and empirical. Theoretically it questions the widely held belief of human thought

which rests on a universal cognitive foundation. Empirically this hypothesis found to be controversial as many evidence of inconsistent replication of the said hypothesis was found. The sapirwhorf hypothesis can be divided in three parts. They are-

1. Linguistic relativity
2. Linguistic determinism
3. Arbitrariness

According to Sapir and Whorf,the thinking of people differs from person to person and perception of people depends on their spoken language .Spoken language plays the key role in understanding the world view or cognition of a person. This is Linguistic relativity according to them. Again according to linguistic determinism the thinking ability of a person restricted by its native language, which is now totally proven as false.

The domain of Color has been the prime focus of the researchers across the globe who are interested in linguistic relativity. These debates create two different schools with different approaches. One is Universalist and the other one is Relativist. Unlike universalists, relativistsbelieve that color terms affect color perception. Both the schools are determined to find the answer of 'Are color categories determined by largely arbitrary linguistic convention?' on their own terms. It is obvious that Sapir Whorf Hypothesis is the core of the second school.

The People of India project has studied 115 of the ethnic groups in Assam. Forty five languages are spoken by different communities including three major language families: Austro Asiatics(5), Sino-Tibetan(24), and Indo European (12). Assamese Language belongs to the Indo-European language family and probably one of the most influential languages in the entire Assam with 1,53,11,351 persons identifying it as their mother tongue or first language in census of 2011. On the other hand Bodo is a sinotibetan language spoken by 14,82,929 persons from the region. Moreover, It is an associated official language in the state of Assam. Both the languages are similar in some aspects and differ with each other in some other aspects. When it comes to expressing color shades, there is a clear difference between the two languages. When it compares to Assamese language, Bodo languages do have more term words to describe color shades than Assamese. Specifically in the context of Yellow Color. There are six or seven shades of yellow in Bodo Culture. All the shades have different term names in Bodo language. For example, GwmwDaodwi (egg yolk yellow/chrome yellow), GwmwGwthang (mustard flower/lemon yellow), GwmwJati (orange-ish yellow), GwmwGwja (reddish yellow), GwmwFudla (Gamboge Yellow), GwmwBuri(Dead Yellow). Yellow color has a cultural significance in the Bodo Culture. Unlike Bodo language, Assamese doesn't have distinct names for different yellow shades. Some dialects try to identify a few shades of yellow with generalizing terms like Dark Yellow, Yellow and Light Yellow, which are also relative to the observer. These differences in term words might have an impact on color perception of both the Language speakers or night not. But these would share a new light on the anthropological linguistics domain of North-East India, that is certain.

Objective:

1. To validate the hypothesis in the context of anthropological linguistics of Assam

2. To see how color perception works within cross linguistic community with reference to the both community

Methodology :

To conduct the research data is collected from both Assamese and Bodo speaking Informants. There are total informants, which can be considered as systematic sampling as the first language of the informants were systematically observed at the time of collecting the data. Datas are collected through an online questionnaire method. In the questionnaire, informants were shown a color circle having different shades of yellow colour and they were asked to name each shade in their respective first language. They had also got a clear instruction to try every shade even if he or she didn't know its native names they could leave it blank. After collecting the raw data, they were processed with different statistical approaches. These statistical results were validated with other qualitative questions that the questionnaire poses. Discussions were finally raised to the occasion with an analytical approach and a bit comparative outlook.

Discussion :

As we all know, Sapir The Sapir and Whorf never get together to project a theory like the Sapir-Whorf hypothesis. It is all their ideas that influence their successor to come up something like that, which still has context in the present time. Sapir advocated that 'Human beings do not live in the objective world alone, nor alone in the world of social activity as ordinarily understood, but are very much at the mercy of the particular language which has become the medium of expression for their society. It is quite an illusion to imagine that one adjusts to reality essentially without the use of language and that language is merely an incidental means of solving particular problems of communication or reflection. The fact of the matter is that the `real world' is to a large extent unconsciously built up on the language habits of the group.' (Edward Sapir, 1929, p. 209) and his student whorf's perspective was 'We dissect nature along lines laid down by our native languages. The categories and types that we isolate from the world of phenomena we do not find there because they stare every observer in the face; on the contrary, the world is presented in a kaleidoscopic flux of impressions which has to be organized by our minds and this means largely by the linguistic systems in our minds.' (Whorf: Language, Thought and Reality p. 213)

Color differentiation happens to be a function of the eye and brain. although Impact of language on color selection is widely discussed all over the world. The specific color terminology varies from people to people, community to community as language varies. Every language differs from one another, so that their terminologies. The differences in color terminologies can be seen basically among the tribes.

In this paper we are carefully looking at color terminology of a major tribe of north-east india. 'Bodo' or 'Boro' has the largest tribal native speakers in Assam, accounting for almost 1.4 million according to the 2011 census of India. Apart from Assam it is widely spoken by the Bodo people of other north-eastern states of India, Bengal and in some parts of Nepal and Bangladesh. It is the official language of Bodoland and recently it was recognised as the co-official language of the state of Assam. Native speakers of this language are well equipped with the idea of natural dyes. They extract these different shades of different color from the

surrounding nature. Sometimes it could be a flower, sometimes it could be a fruit or sometimes it could be a bark of a tree or many at times it could be minerals. Their traditional knowledge system helps them to identify those particular objects and processes them accordingly. Among the all colours yellow is undoubtedly their favorite one. Yellow has a specific cultural reference too. It is the color that is associated with their identity and deity. Maybe because of its relevance it has so many shades or variations. More than that they have terminologies to represent those color schemes too.GwmwDaodwi (egg yolk yellow/chrome yellow), GwmwGwthang (mustard flower/lemon yellow), GwmwJati (orange-ish yellow), GwmwGwja (reddish yellow), GwmwFudla (Gamboge Yellow), GwmwBuri (Dead Yellow) are just a few name of those.
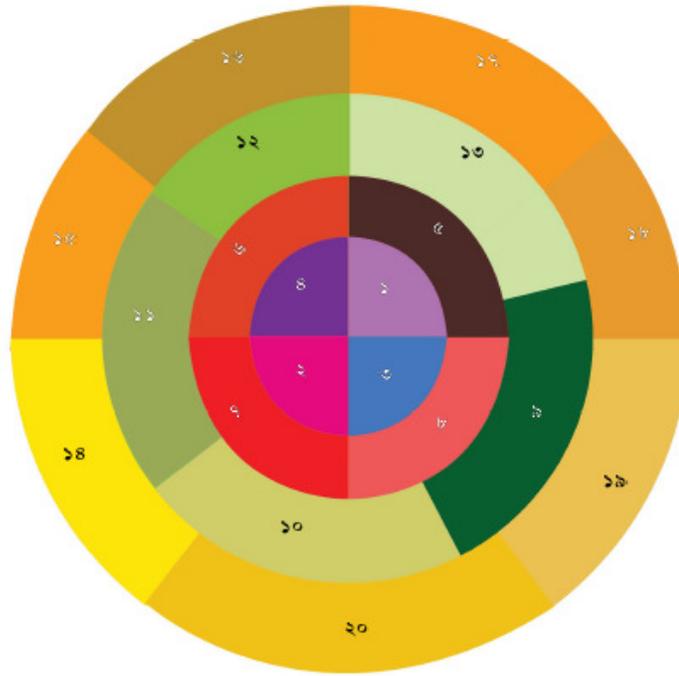
১. আওজাৰ বিবাৰ গাব (এজাৰ ফুলৰ ৰং)   ১১. লাইগাং গীথাং (সেউজীয়া)

২. গোলাপী   ১২. বাথ'গাং (ভাটো সেউজীয়া)

৩. নীলা   ১৩. বাদালি (পাতল সেউজীয়া)

৪. ফাঠাও গাব (বেঙুনীয়া)   ১৪. বেসৰ বিবাৰ গীমী (সৰিয়হ ফুলীয়া হালধীয়া)

৫. জাহাব (ক'লা-ৰঙা)   ১৫. গী মীজাথি (কমলা-হালধীয়া)

৬. জাৰৌ (উজ্জ্বল ৰঙা)   ১৬. গীমীবুটী (শেঁতা-হালধীয়া)

৭. জাথি (কমলা)   ১৭. গীমী দাওদৈ (কুহুমবৰণীয়া হালধীয়া)

৮. জাৰাং (ৰংচুৱা পাতল)   ১৮. গীমী ফুদলা (জেমবোজ হালধীয়া)

৯. সীমখীৰ গীথাং (উজ্জ্বল সেউজীয়া)   ১৯. গীমী গীথাং (নেমু হালধীয়া)

১০. গীমী-গীথাং (হালধীয়া-সেউজীয়া)   ২০. গীমী ফুদলা (জেমবোজ হালধীয়া)

Figure 0.1: Colour plate with native bodo terms

When this diagram is shown to the non bodo speakers and asked them whether they can distinguish between the major colours or not. 70% informants responded positively while 10% informants responded negatively and 20% are not sure to comment anything.
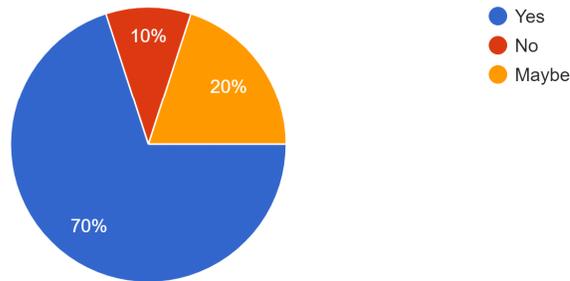

Figure 0.2: Informants response regarding distinguishability of different shades

These don't come up with any surprises as these colours are quite available in both the cultures and linguistics. But when they are asked which color shades are most difficult to distinguish most of the informants 66.7% came up with the yellow colour. This is an obvious choice because of the diverse availability of shades in Bodo native culture.
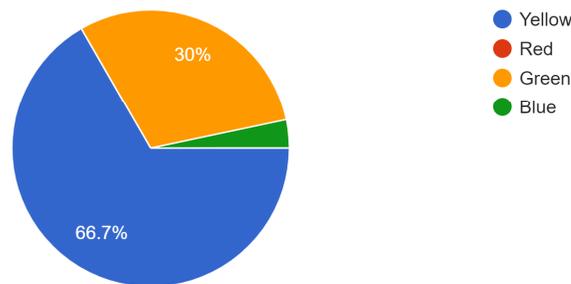

Figure 0.3: Informants response regarding the toughest colour shade to name

The real observation starts where informants are asked to name its colour shades in their first language. Because of the research design most of the informants were those people who spoke Assamese as their first language. These informants succeed to name only 22% of

colour shades. And shade numbers 17,18,and 19, 20 were most difficult to name for Assamese native speakers or to be very precise it is fair to say that Assamese native speakers didn't have colour terminologies to distinguish those shades as compared to bodo speakers. Bodo native speakers show much more success rate in naming different shades of the yellow colour. Bodo informants succeed to name 67% of colour shades, which is comparatively much higher than the Assamese native speaking informants.
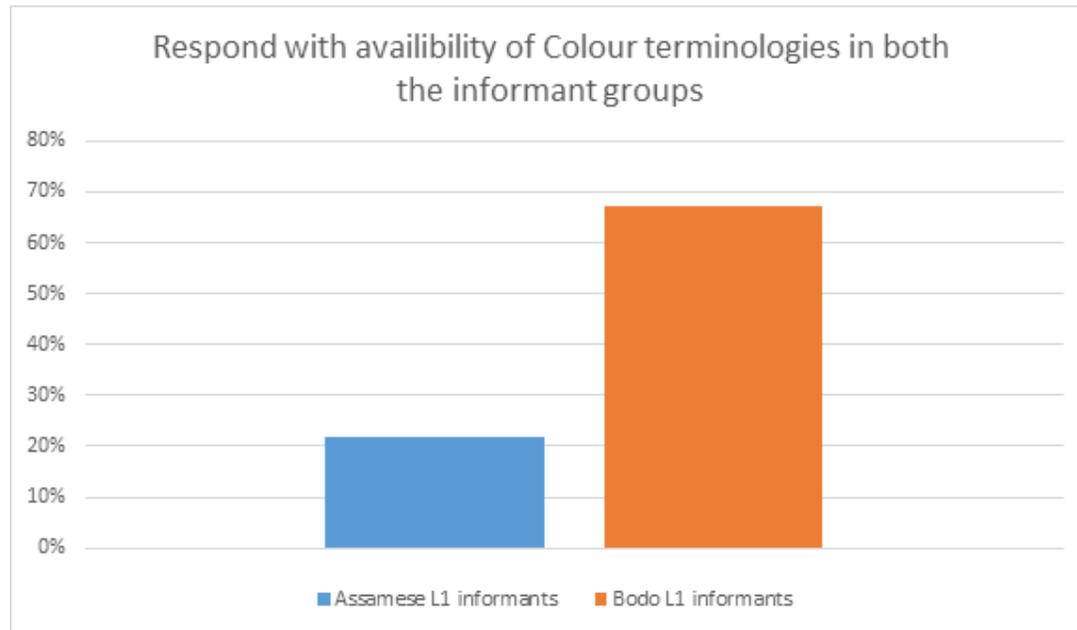

Figure 0.4: comparison between both the informant group.

Conclusion :

Numerous cross-linguistic investigations of color categorization have provided abundant evidence regarding the relationship between language and perception (Winawer et al., 2007; Roberson et al., 2008; Regier and Kay, 2009; Thierry et al., 2009). The present investigation compared shades of yellow colour between Assamese and Bodo speakers. The current results demonstrate that compared to Bodo speakers, Assamese speakers are weak in naming the different shades in their first language and sometimes it leads to indistinguishability of different shades of yellow colour. Results that we have seen so far are consistent with the Sapir-Whorf hypothesis, which suggests that different lexical codes for color may induce differences in color perception (Zhong et al., 2015). This finding was consistent with the data from Russian, Greek (Thierry et al., 2009) and Japanese (Athanasopoulos et al., 2011) speakers in the blue region and Korean speakers in the green region (Roberson et al., 2008). 'does language affect perception?' this question might not have the simple answer of all. Some scientists have proved that language might affect half of perception. Specifically, language might be expected to shape perception primarily in the right visual field (RVF), and much less if at all in the left visual field (LVF). This expectation follows from the observations that the left hemisphere (LH) of the brain is dominant for language, and that the visual fields project contralaterally to the brain. On this view, half of our perceptual world might be viewed through the lens of our native language, and half viewed without such a

linguistic filter. Going with this view it is very important to suggest that the basic relationship between language and cognition may be complex and that perception may be shaped by both relativistic and universal forces.

References:

Begum, LutfaHanum (2017) *Borosakalarparamparagatoboyonabhikalpana*[Doctoraldissertation, Gauhati University]http://hdl.handle.net/10603/222068

Kay, P. et al. (1997) Color naming across languages. In Color Categories in Thought and Language (Hardin, C.L. and Maffi, L., eds), pp. 21–56, Cambridge, Cambridge University Press

Kay, P. and Kempton, W. (1984) What is the Sapir-Whorf hypothesis? American Anthropologist 86, 65–79

Kay, P. and Maffi, L. (1999) Color appearance and the emergence and evolution of basic color lexicons. American Anthropologist 101, 743–760

Kay, P. and Regier, T. (2006) Language, thought, and color: Recent developments. Trends in Cognitive Sciences 10 (2), 51–54

O¨ zgen, E. and Davies, I.R.L. (1998) Turkish color terms: Tests of Berlin and Kay's theory of color universals and linguistic relativity. Linguistics 36, 919–956

Regier, T., and Kay, P. (2009). Language, thought, and color: whorf was half right. *Trends Cogn. Sci.* 13, 439–446. doi: 10.1016/j.tics.2009.07.001

Roberson, D. et al. (2000) Colour categories are not universal: Replications and new evidence from a Stone-age culture. Journal of Experimental Psychology: General 129, 369–398

Roberson, D., Pak, H., and Hanley, J. R. (2008). Categorical perception of colour in the left and right visual field is verbally mediated: evidence from Korean. *Cognition* 107, 752–762. doi: 10.1016/j.cognition.2007.09.001

Sapir, Edward (1929) The Status of Linguistics as a Science. *Language,* Vol. 5, No. 4, pp. 207-214, https://doi.org/10.2307/409588

Thierry, G., Athanasopoulos, P., Wiggett, A., Dering, B., and Kuipers, J. R. (2009). Unconscious effects of language-specific terminology on preattentivecolor perception.*Proc. Natl. Acad. Sci. U.S.A.* 106, 4567–4570.doi: 10.1073/pnas.0811155106

Winawer, J., Witthoft, N., Frank, M. C., Wu, L., Wade, A. R., and Boroditsky, L. (2007). Russian blues reveal effects of language on color discrimination. *Proc. Natl. Acad. Sci. U.S.A.* 104, 7780–7785.doi: 10.1073/pnas.0701644104

Whorf, Benjamin Lee. (1956). *LANGUAGE, THOUGHT, and REALITY Selected writings of Benjamin Lee Whor*f.Technology Press of Massachusetts Institute of Technology. Cambridge.

Zhong, W., Li, Y., Li, P., Xu, G., and Mo, L. (2015). Short-term trained lexical categories produce preattentivecategorical perception of color: evidence from ERPs. *Psychophysiology* 52, 98–106. doi: 10.1111/psyp.12294