

**Language, Culture and Cognition: An Introduction**  
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**Module - 02**  
**Lecture - 05**  
**Categorization: contd**

Welcome to the second part of the 2nd module, module 2. We were discussing about Categorization as a fundamental mental process. We have already seen that categorization is a process that is at the core of, in the thought processes and the language output, linguistic output and how it is the categorization as a process that creates concepts. So, basically this is at the root of conceptualization.

So, and we have from that point we have we have talked about the conceptual categorization as a process and what is the outcome of those processes and we have also seen that through various theories of categorization, through the classical theory of categorization and then we went on to look at the prototype theory and the exemplar theory with the help of color terms and so on.

While discussing color terms we have seen that languages in the world differ in terms of the number of basic color terms they may have; it ranges from 2 to 11. So, there are languages which has only two color term and on the other hand there are languages that has 11 color terms. All the other languages are in the middle of these two extreme points on the spectrum.

Now, the question is if a language does not have the names, that is the codes for the chromatic colors what does this mean? does it mean that they will have only one particular focal color? So, if in case of Dani, it is 'mola' and 'mili' do they have similar kind of focal colors or are there possibilities of differences and so on and Rosch has shown us that even there, even if you ask different speakers of the language about the focal color.

So, what is the representative color of 'mola' there are differences across speakers. So, through this we have seen that the theory of prototypicality holds in case of color terms. Another important aspect of color terms and their possible relationship with cognition itself, in terms of color cognition, has also been has also been explored.

So, if a language has very small number of basic color terms does it limit our possibilities to understand and learn about languages and talk about languages in any way; this was the other strand of research that was carried out by Rosch and her group and it turns out that it does not. Limitation in numbers of terms for the colors does not really mean limitation in terms of your capability to either identify or to learn the names.

So, Rosch actually conducted studies in this community and succeeded in teaching them both basic and non basic color terms. So, if that if the language had a limiting factor this would not have been possible. So, this means that color cognition does not depend on color terms.

Now, why are we talking about color cognition depending on color terms? because we already know that there is a very important theoretical position taken by Sapir and Whorf and their followers, which is called 'linguistic relativity' that says that the language that we speak, the structure of the language, the semantic structure of the language, actually has a strong impact on the way we slice up the universe; in the sense that the way we look at the universe, the way we understand the universe, cognize the world around us is dependent on the language.

So, it is in this context that the Dani's understanding of color terms, their color cognition is understood, is looked at from the perspective of the terms of color that they have. So, we already know that Sapir Whorf hypothesis talks about this kind of a relationship between language we speak and the way we think. Now, it has two versions, as we will see. The strong version of the hypothesis says that language determines the way we think. So, it has a deterministic role that we have that language has.

So, this is the strong version very very strong claim that the language we speak decides, this is the only glass through which we look at the world; however, there is a weaker version of the theory as well, it says, which says that language may not really decide the way we look at the world, but it certainly has an influence on the way we think. So, these are the two versions of Sapir Whorf hypothesis.

Now, keeping this in the background, if we look at the color terms and the color cognition in various communities, we would see that if the strong version were true it would be next to impossible to learn a new second language, a second language that has a different way of looking at the world; for example, a Dani would not be able to, Dani speaker will not

be able to learn English and English color terms if a strong Sapir Whorf hypothesis is to be true, because his color cognition has been already decided, it is already determined by the words that his language offers, which is only a two way differentiation.

So, that way it will be and the it will be imprisoned, our understanding, our cognition, our entire mental mechanism would be imprisoned, very very limited by the language; however, this is not that case. Dani, Rosch was capable of able to make them learn the English some of the non basic and basic color terms. Ok, so, the strong version is not tenable. What about the weaker version? Weaker version does not claim that language decides the way we think, weaker version claims that there is a relationship there is an amount of give and take there is an amount of influence. Now, though research in many domains have actually refuted the strong hypothesis. There is actually a new wave of research that is happening for last sometime that actually has some amount of proof in support of the weaker version.

So, there is a some amount of proof of interaction; of course, this is remember this is a more objective way of looking at this at the relationship, this is about interaction, not about deciding. So, there is an impact of the language that we speak on the way we think apparently. So, there is the there is an amount of research that has given us this new information.

So, new research on language cognition interface have brought the relativity issue back to the forefront, because relativity the entire debate about relativity was sidelined after Chomsky's innateness hypothesis became a very strong theoretical position and it was no more tenable; however, this idea, this relationship has been recently brought into the foreground and this actually has happened after the cognitive revolution, after many, you know newer way of probing human cognition and the relationship with language and so on came into being.

There are many many points of departure. One important domain one important field of linguistics that has looked into this issue in detail is that of cognitive linguistics. Simultaneously, also bilingualism research in last few decades has brought certain very interesting insights onto the forefront of the relationship between language and the context in which that language is spoken, be it first language or second language and so on.

And similarly, some work on remote languages are also bringing out newer insights into this relationship and its probable connections.

There is no hard and fast rule as to what exactly ah what is the, you know, the extent of the impact, but there is certainly an amount of interaction that happens. So, these insights are for are found in the following domains, these are the domains that have given us a lot of data in terms of finding out what is the relationship between these.

So, language and space actually has a lot of data to offer us in terms of the relationship; however, we will discuss this in a separate segment because this is important enough. Right now we will discuss on the gender, number, tense and object categorization, primarily and we see we will see how these grammatical aspects how this grammatical patterns in languages have some amount of relationship with the way the concepts are actually internalized by the community.

So, this way of looking at language structure and connecting them with the human thought process, with the way with the way humans create a worldview. So, to say is called Neo Whorfism. So, Neo Whorfism is a revised and newer version; let us say a software take on the same theory that language has a relationship with our mental processing, with our cognition.

So, the first topic, first grammatical aspect that we will discuss is that of grammatical gender. Now, languages differ in terms of grammar whether they have a grammatical gender or not. What does it mean to have a grammatical gender? some languages in the world assign gender to the to an inanimate object; of course, animate objects have gender biological gender, but in cases of some languages, the inanimate objects that are that are not biological entities will also have some amount of some kind of a gender assigned to them; some languages of this type are French, Spanish, German, Hindi, Punjabi and so on.

What does it mean? It means that objects something like a chair, a table, a fan and a house and so on will have a gender assigned to it; each of them will be either feminine or masculine. For example, in German you have this three-way differentiation between der, die and das, in terms of what we call determiner, in linguistics it is called determiners it is like the. So, if it is the book, the car and so on that the determinant that is 'the' part of the in German changes depending on the noun to which it is prefixed. So, that is how you see das auto.

Similarly, in French you have a distinction in terms of determiners. In Hindi, in India in Hindi language, gender agreement is base is used in both the verb and the adjective and the possessive marker. So, here is an example. So, in Hindi this the term 'police' as an entity not necessarily a policeman or a policewoman, but police as an entity as an abstract category has is treated as feminine that is how you will see 'police aa gayi' this part denotes the feminine gender of the entity in this case. So, this is how you have an agreement between the noun and the verb, because it is feminine.

Similarly, 'topi' so this is a possessive. So, this is 'topi' is has feminine gender that is how you have [meri topi], but if [ghar] is considered in masculine. So, it would be [mera ghar]. So, similarly, so this is how what we mean by the grammatical gender in some languages now neither [topi] nor police as an abstract entity has a gender in the strictest sense, but this is how that grammatically we assign gender.

Now, fine yes; languages have gender in for inanimate objects, but does it really matter? why are we even discussing this. The funny thing is that apparently the gender that we use for certain inanimate objects also has some role to play as to how we look at them. Apparently we even conceptualize them differently. So, there was a very well known study between German and Spanish speakers.

Now, the interesting thing about German, Spanish pairing is that these two languages assign opposite gender to a same set of nouns. So, the same noun like 'bridge' or 'keys' and so on will have opposite gender in these two languages and that is how it becomes very interesting to see what will how the speakers treat these words.

So, the study was carried out on these two different speech communities, there was a list of nouns that were prepared and the subjects were asked to write appropriate adjectives for those words. So, like the words included bridge the it also had keys and many it is a long list of nouns.

So, bridge had got elegant, fragile, slender, beautiful, pretty and so on in German, because in German bridge the noun bridge is feminine; however, the same noun bridge is masculine in Spanish and we had the researchers found that the Spanish used adjectives like this in to describe the bridge in Spanish. So, you see typical you can already see that these adjectives are typically feminine in case of German and typically masculine in Spanish.

So, one can easily understand the gender of these objects in these two languages is actually having some amount of impact on the way you look at it, because there was no instruction to think in terms of you know either feminine and masculine, they were just asked to give adjectives appropriate adjectives for these nouns and this is how it turns out.

Similarly, another study on Arabic and English speakers had similar results when asked about their the subjects to assign a male or female voice to a list of objects. So, if objects, that is inanimate objects, have a gender assigned to it we ought to we tend to think of them in terms of actually having a gender; this is the basic finding of this set of studies.

Now, we move on to the category of number. The category of number also is a very interesting one and it seems to have some impact on the way we conceptualize. So, one interesting aspect in case of grammatical number is the differentiation between the classifier languages and the noun class languages.

Now, what is the classifier language? Classifier languages have a particular grammatical entity called classifier, that sometimes will prefix be prefixed or sometimes be suffixed to all the nouns in that particular language; we will look at classifiers in greater detail in the next segment. So, in case of numeral classifiers, numeral classifiers are those classifiers that are suffixed or prefixed to the number, in a particular language.

So, in classifier languages what happens is that, the distinction between count noun and mass noun is often blurred, as opposed to languages that are considered noun class languages. So, noun class languages have a possibility of having assigning singular versus a plural number to objects like one book, two books, three books and so on.

However, in case of classifier languages it is possible to use the same, these languages noun typically denote substances because classified languages nouns will not talk about the shape and size of the object, but the substance with which it is made and hence it is unbounded and discrete as a result of which it is possible to use the same number marker for both kinds of; both kinds of all kinds of numbers so both singular and plural.

So, noun class language for example, a count and mass nouns are treated differently as you see a candle, two candles and there is a marker here, but in case of uncountable mass nouns you have to use a glass of water not one water, but in case of classifier languages it is possible to say a glass of a water as well as a book; that is the difference and there will be

a classifier that will be that will come in the bit in between these two parts of the grammatical aspects.

Now, comes the much researched area of tense, tense marking. How what does tense mark? Tense marks the time at which the action was taken, when the verb was unfolding. So, some languages in the world do not mark tense in the verb system, in the way when we say do not mark the tense system, we mean the way we are usually used to seeing them like it is in English there is a past and present and a future distinction but not all languages follow the same way of you know cutting time continuous time into segments.

So, that is what we mean by do not mark tense in the verb system; however, that does not really mean they do not really understand that the difference that there is a difference between these two these three possibilities.

But what happens is what really happens in these languages is what is interesting to see is whether this lack of overt marking of tense system does it look does it make them look at the object, does it will make them look at the event differently, this is what is more interesting to see and once particular study that was that is very well known it was carried out on Indonesian languages.

So, speakers of these languages may use separate words for expressing that particular information, but not use a particular grammatical entity like in English, you can say 'I played' versus 'I will play' versus 'I am playing' and so on; this particular distinction is missing in this language; however, there are other ways of understanding the context.

Particular study was carried out to ascertain if this lack of grammatical tense marking in Indonesian has a direct impact on the way they look at the event. So, the study went like this, there were photographs; now showing people who were either about to perform an action, were performing an action or had finished an action. So, which means that there were people doing something, there was an action depicted in the photographs; however, the actions were divided into three tense systems as from our perspective, from perspective of English language.

So, about to perform an action meaning it will happen and then that is performing an action this is present tense and this is past tense and this is future tense and they all have because these things have corresponding tense in English, but not in Indonesian. So, that was the distinction between these two languages. There was another variable that was brought into the study which was that this studies action was performed by three different agents.

So, there were three different kinds of people doing the same action. In one case, it was people wearing different color jersey, football jersey, in another case there were different people and so on. So, there were pictures of some action happening these actions were differentiated on in one, on the term of the tense at in terms of when the action happened and also the difference was there in terms of the agents who perform these actions.

Now, the task was the task that was told to the subjects was to put similar pictures together, put similar pictures together. Now, remember there are three possibilities in terms of tense and three possibilities in terms of agents. Indonesian monolinguals, more often than not, tended to sort the pictures depending on the agents. So, if a person if the one of the agent is wearing green another blue and another yellow; so the differentiation or sorting of the cards depended on the uniform, on the dress that the person was wearing the football jersey the person was.

So, these all the yellow jersey wearing footballers went into one group and so on; however, interesting aspect was that Indonesian bilinguals who had English as their second language, tended to differentiate or sort the pictures like an English speaker would, which is sorting them in terms of the tense, that is there that that would you would use to describe this. So, this was taken as an example of the grammatical system, in terms of tense marking, affecting the way you will you understand affecting the way you look at a particular event.

Remember, the task had nothing to do with language they only had to sort pictures into separate groups. There was no clue as to how they are supposed to and depending on how they actually did the task we derived the conclusion that monolingual Indonesian speakers based on the language that they speak, which does not distinguish overtly between these three types of action, they simply used the agents the information that they got from the agents as a basis for sorting them.



But when they have started learning English as a second language and they were influenced by the grammatical tense system in English language and they started sorting the cards in terms of the tense and that was the difference between the monolingual Indonesian and bilingual speakers of L2 speakers of Indonesian language.

Similar, similar differences can be found out in terms of object categorization as well. Object categorization we will again as I mentioned earlier we will talk in greater detail in the next segment when we talk about classifiers. But in short, there are languages they distinguish their objects the nouns in different categories. So, in case in one language you might have only two names for a particular entity, but in another language you might have a much more finer, nuanced way of segmenting the same thing.

For example there are 16 objects named bottle in English that are spread across seven linguistic categories in Spanish. 16 objects that can be called simply 'bottle' in English actually span across seven linguistic categories in Spanish. Even in Hindi for example, you have different words for things that would largely come under bottle. So, if it is there is [shishi] there is [botol] there is there are many many such categories.

So, languages differ in terms of how they segment how they what they group together what objects are grouped together to be called by one name what objects are you know distinguished on the basis of what and so on. So, in Spanish it depends on the material of the bottle the purpose for which it is used and so on. So, that is how you have different names. So, distinguishing factors may be material usage and you know context, people and many things.

Sometimes two languages may have translation equivalents, sometimes they do not. Sometimes what makes it interesting is that in case of translation equivalence sometimes the agreement is there in terms of the prototypes of that category; for example, in case of Russian versus English you see the prototypes they agree. So, there is a cups what is a cup and what is the glass Russian and English agree on each with each other on this; however, when it comes to the borderline members of the same category there is a lot of disagreement.

So, for example, paper container that we all are familiar with, any fast food joint or you know coffee shop you will see what they give is a paper cup and in English we call it a cup, but in Spanish sorry in Russian they will call it a little glass, they will not call it a cup

even though it is performing the same function that a cup does that is you know giving you tea or coffee in, but because it is probably because it is dependent on the shape.

So, this kind of differences actually make us think on the categorizing principle that is that would be at work here, how why does it suddenly become if the two languages agree broadly agree on the central examples of a category, but they do not agree on the borderline concepts. So, it makes you think about the categorizing principles that are at play across languages, which probably is dependent on the way the language is structured.

Similarly, the concept of time, it has been studied in detail. In fact, how the how speakers of different languages look at 'time' what is time of course, is a very this actually can take you at a transcendental level of you know understanding and thought, but sticking to real life and mundane life understanding of 'time' also has a lot of differences between let us say for example, English and Chinese.

So, Mandarin and English speakers' concept of time actually are different Chinese think tend to think of time in a vertical way whereas, English tends to think English speakers tend to codify this in terms of horizontality. So, this has already been; this has already been proved, there is a lot of research output that is available that already has established this. Now this is dependent on the script the way we write script also. So, language we are not talking only about the grammar of a language, but also the way it is written the way it is spoken and so on.

So, language in its entirety. Now Mandarin Chinese is written vertically and English language and many other languages are written horizontally, but when we write horizontally also we have differences in terms of either writing right to left or writing from left to right. Our conceptualization actually has a lot to do with even the direction of the writing in terms of even within horizontal plane.

Now, how do we know that this particular way of writing, that the way script is arranged in a particular language has an impact on the way they think about time. So, this is by the way most of these studies are actually correlational findings and not necessarily causation not necessarily they show causation. So, this study was carried out on Mandarin speakers and the task was to answer if March precedes April; simple, it is a simple task of answering a question if March comes before April or April comes after March like this.

Now, the critical point here was, they had another stimulus which is called a prime the which was watching a vertical array of objects as opposed to seeing a horizontal area of objects. So, before the question was asked to them, they were there they saw an array of objects arranged either horizontally or vertically. Now, and they were all they are always randomized. So, the Chinese speakers saw both the horizontal and the vertical array of objects and they had to answer the question.

What the findings shows is that if the Chinese speakers saw a vertical array of objects they answered the question faster as opposed to if they had seen an horizontal array of objects. So, this is taken as an example that because they think of time in a vertical way when they saw a vertical array of objects they were already aligned to their way of thinking.

However, because horizontal array has a you know has it has a tension with the way time is conceptualized in Mandarin language, that is why they took more time in answering the question of course, the opposite was found in the in case of the English speakers.

Another experiment showed that the tendency to think of time vertically was related to the age, when the Chinese English bilingual subject started learning English. Now, in the previous study, typical Mandarin monolingual speakers will be found to be having vertical understanding of time, but when it comes to a bilingual Chinese speaker who has Chinese any one of the Chinese languages as is L1, first language and English as L2 that becomes another interesting domain of study.

So, in case of Chinese English bilinguals learning English, to what extent verticality will impact their understanding of time is actually dependent on the age when they started learning English. So, you see it is a very nuanced understanding, a very nuanced way of looking at how subtle the differences can be, how subtle the impacts of language and how when that impact actually works and when it does not work and if it works what is the extent to which.

So, there are this finding that is that shows that age is an important variable in this case, in case of learners of second language which is English. It was also found that the English speakers could be trained to think like the Chinese, which means that not only learning English for Chinese speakers tends to make them look at time differently or let us say more like an English speaker, but the reverse is also possible. It is not only the Chinese who change, but if the English speakers are trained in a proper way to think like Chinese even

for them the results will be similar to the Chinese monolingual speakers or at least first language speakers of Chinese.

So, this suggests that though one's language does have an impact on the conceptualization process of that speakers, of the speakers of that particular speech community it is not in a deterministic way which is the that is why we said that there is a strong hypothesis strong relativity hypothesis is not tenable; however, there are proofs of the weaker version in some sense as we see through various experimental studies in today's time.

So, fine there seems to be a relationship and seems to be that language does have an impact, an amount of impact on cognition, but how does how let us put it in a more structured way. How do we put a structure to it? let us ask the fundamental question how does then language affect cognition we have seen in bits and pieces here and there two examples of gender number time and so on; that there are impacts.

So, to put it in a more structured way, there are two ways that language actually affects cognition. One is the issue of codability. Language, I have already used the word 'code' in some cases today. So, language basically codes and an information that is available to us. So, coding information for example, the color terms we may not have in English, we have dark blue, sea blue, light blue, you know so on and so forth.

But in some languages you can have actually a codified term for a particular shade of blue, what we mean by codified term is that single word name. Naming, the moment you name a concept it becomes highlighted. So, that is what we mean by codability. So, certain languages have codes for certain concepts and another language may not have the codes for the same concept.

Another domain is that of habitual thought. Habitual thought is a very very significant aspect of this relationship this is something we had seen before also how it affects.

So, what is codability? This is an example again from a textbook example. So, languages code concept lexically, as we have just said that we have words single words for a particular concept. So, in this particular language, you see there are so many types of trees that grow up on the mountain. For us we do not really have any languages that we speak we if you think probably we do not have such finer nuances of trees growing on the

mountain slope having so many different words, single words that denote that understanding.

So, this is what we mean by codability, this is codable, these concepts are codable in this language whereas, it may not be in another language. So, languages differ as how to how they segment a continuum that is what is basically we refer to as codability. How do we segment the continuum, continuum whether it is continuum of time or continuum of color, continuum of any other such categories. So, that is where languages differ. So, where do you cut it, how do you slice it and which languages do slice which languages do not this is where the codability aspect differs.

Now, depending on how a language codifies a particular concept it makes us look at that particular thing in a particular way. So, for example, some languages have singularity versus plurality difference, as we have just seen in case of noun class versus classifier languages; some languages make a distinction between witnessed and unwitnessed events.

So, when we discuss about let us say, I say that there was a snake on the main road today, in some languages you need to grammatically specify whether I have personally seen the snake on the road or I have heard it from somebody else. This particular factor about being whether the event was witnessed or unwitnessed personally by the speaker is also grammaticalized in something some languages.

Similarly, completed and un non completed inter actions, visibility-invisibility of objects and so on. There was a distinction three way distinction between direct objects like here and there, this and that; in some Indian languages there were three different way of you know denoting the objects in terms of proximity, so this and that and that. So, there were difference between two kinds of 'that' one is visible and the other is invisible. So, this kind of distinctions are all there in various languages of the world.

And, it so happens that if the language has a way of codifying certain concepts, we tend to notice them more often its not that we do not otherwise know what is happening, but it simply because it brings it to the foreground, it brings it highlights them. So, we tend to notice because we have to speak about them in that particular language.

So, if you are a one, if you are speaker of a language that does not really have to use this witnessed versus unwitnessed kind of event, you simply are not going to notice that effect

or at least you are not going to highlight that aspect. So, that is what we mean by habitual thought. Now once you have realized that there are categories and their categories are based on features sometimes they are you know in terms of classical theory they are represented by all the members, in terms of other theories they are represented by the best examples of the category and so on.

But one thing remains constant that categories are arranged hierarchically there is a structure to categories, it is not that is a very strong that is a very tight knit kind of a structure taxonomic structure that holds to any category. So, for example, categories like chair and table and sofa are included in a higher within a higher category and a super ordinary category and that is again part of another superordinate category and so on.

Similarly, chair can have you know office chair and so many types of chair, office chair, lounge chair, and study chair and so many types. So, office chair may have revolving chair, non revolving chair and so on. So, there is a taxonomic hierarchy of all the conceptual categories. This leads us to a vertical or hierarchical arrangement. Now naturally the highest level of any category call organization is the most general at the top and most specific at the bottom.

So, for example, if you talk about vehicles, so or let us say talking about the plant world or the animal world; so, you will have you know the animal world and then various kinds of animals and so on. So, the highest level is the most general and lowest level is the most specific. So, this is called the taxonomic hierarchy.

Now, there is something very interesting about taxonomic hierarchy. What happens is that there is a logical inclusion of features. So, the taxonomy and the categories at the highest level possess only a small number of features and as you go down in the taxonomy, in the hierarchy you see each at each level there is a at least an amount of or at least one single feature more that is added. So, this is an example from a book from roger brown, this is the this could be one particular hierarchy.

So, a thing I have a thing in my pocket and then a metal object and then money, a dime, a 1952 dime and then a particular dime with a scratch. So, as you go even a simple thing like a coin, any you can have this kind of a this kind of an inclusion of features that go on and on that can go on and on.

And this is still here, it is fine there is a hierarchy, there is a taxonomy and there is a logical inclusion of features as you go down in the hierarchy. But it seems there is some kind of a superior status of the mid level in the hierarchy. Superior status as in there is a some kind of an advantageous position that the mid level always enjoys.

For example, if you talk about vehicle and then four wheelers and then there is car and then there is you know various kinds of cars let us say, Maruti or Hyundai or many other cars and then you go as you go further below you can actually specify the model and make and so many other things.

But readily we can talk about a car. So, that right now if I hear a noise of a car moving crossing the crossing under my window, we will not say there is a vehicle that went or we will not even say that this is a you know 2013 model of this and that brand. What we will say there was a car.

So, this 'car' is actually the mid level in that entire hierarchy this is what we mean by a certain amount of advantage that the mid level in the hierarchy enjoys this is called the basic level theory of basic level. So, the mid level is the basic level in case of taxonomic hierarchy of the categories of any category for that matter.

So, mid level is psychologically privileged. This is the most natural level where we engage. So, that is why because we readily engage with this also enjoys a kind of psychological advantage, that is why it is called a that is why it is called a basic level theory.

So, typically we would name objects in the lower we will not name at the lower level, but we will always name at the basic level of course, there are examples that can counter this, but often more often than not we will not. This is also basic in terms of how children learn a category. When children are learning about a category again we will not they do not learn at the highest level or at the lowest level the entry point of learning a category is also the mid level.

So, why do we mean there why do we say what we mean by being basic is that they are basic in terms of perception, in terms of action, in terms of communication as well as knowledge. So, this is where we have more connection. So, we have a better idea about an object at the mid level as opposed to both at the highest and the lowest object.

Similarly, in terms of action as in how we engage with a particular category. So, you can easily talk about what you do with a car as opposed to what you do with the limo or you know what kind of action or as opposed to the to a vehicle and so on. Similarly, communication it is the basic level categories are usually the shortest and learned first and enter the lexicon first also and also use the neutral contextK knowledge again in terms of knowledge we possess a large amount of knowledge in the about the base level as opposed to the higher and the lower levels of the categorization.

Now, why do we have basic level categories in the first place? Why what is the why do we even need? The ideas that have been put forward is that we categorize; categorizing is a fundamental principle as we have already seen and this is also a universal process. But we have also seen that this is a process that out that outcome of which is not always universal.

So, what we do when we categorize is that we are working under two contradictory pressures; contradictory pressures of putting similar things together and putting separate things separate; these are the two fun.. two basic understanding about categorizing. Why do we categorize we categorize to put similar things together, but also sep.. different things separate. So, these are the two contradictory forces that we are talking about here.

So, the we want to group together item that appears similar to us and similarly we want to keep separate things separate. So, at the level of [chair] within the category furniture we have chairs and that is exactly where the sub categories are different. So, we know what to do with the chair as opposed to what to do with the furniture.

So, at this level we are differentiating between chairs and tables, even though they both are under the same super ordinate category 'furniture'.

So, this distinction we need and that is exactly why basic level categories are very important. So, basic level categories take care of this problem, so because at this level category is maximally different from the neighboring category. So, chairs are different from tables, while grouping together items that are maximally similar to one another. So, chair the category chair includes all kinds of chairs which are basically similar to one another. So, that is why basic level categories, theory of basic level categories are important is important.



So, basic level category as I have just mentioned is not the same in different cultures they are different. Now that when we talk about cultures and categories we actually open a Pandora's box. Cultures and categories are very interesting interaction that we have in terms of various kinds of categories not only in terms of concrete objects, but also in terms of abstract notions.

For example, one such category is the category of 'art'. So, people from different different cultures, different speech communities have different ways of looking at the same object. So, as a result of which categories vary.

If we look at the category of art for example, or you can take music or even simple things like freedom and you know what is 'freedom' something like something as simple as that we would actually start looking at how it is categorized across cultures, will actually leave us you know dumbfounded there are the differences at the level of at the basic level as well as at various other levels are very interesting to look at.

So, if coming back to art the category of art, how do we define art if you go to you know dictionaries and other sources of information, these are some of the definitions that you might encounter. So, what we see on display in art museum is a very rudimentary, very basic definition of art, but it is not a good definition because it only limits art to a visible product, right which is the end of a process.

So, primary focus is on what people think it is. On the other hand if you go to encyclopedia you will see a combination of skills and imagination in the creation of objects environment, experiences so on and so forth by this definition even some sports and games will also qualify to be called art like, figure skating; we can go on and on.

There are various kinds of various definitions the that are available from various sources and you see each definition highlights one particular aspect of that category 'art'. If somebody in if somebody is highlighting the skill, somebody else is highlighting the output, somebody else is highlighting the material, somebody else is highlighting the object of art and so on and so forth.

And because of this art as a category has also gone through a lot of changes across time across space and time. So, does it mean that categories like art or music or many other such things have any essential feature to talk about? is it possible that certain categories

do not even have what we have started with essential necessary and sufficient conditions, this is what we will see shortly.

These are only a few names only very very few schools of thought or you can say types of art are practiced over time. So, impressionism to symbolism to cubism there is no I have not put them in any order, in any chronological order it is just that there are all these possibilities. So, impressionism, symbolism say and to then this is a later form art, abstract, conceptual art, these are later forms of art whereas, these are older.

Similarly, so, how do they differ there are only I have only added a few here, but there are so many more how do these various schools of art differ. They differ in terms of what is to be painted, how it is to be painted, how is the message of the painting to be delivered to the audience and so on.

So, basic how do you then talk about basic features of a category like art? How do you; how do you how do you arrive at it? So, basic features of art that has you know they are actually called movements across time because many of these schools of thought actually came out as a revolt against the previously held standpoint as to how art should be.

So, when art was essentially indoor activity in the old times and gradually it came out of you know in the outdoors that was a movement, that was almost a revolution at that time similarly in terms of how to paint and so on. So, let us turn to the assumed feature of one view and then a movement that cancelled them.

So, for example, in the in case of impressionism, expressionism, and surrealism the idea was to represent an objective reality something that is there, that is out there you just express it. Now, this was cancelled by this was cancelled by impression sorry the initial idea was that art should represent an objective reality in the olden times the paintings would represent religious figures or noblemen kings and queens and so on. Later on, there was a change by using impressionism whereas, the there is no directly perceivable objective reality that is present similarly surrealism.

Similarly, you can see so, many types of thoughts that were there and then this was cancelled by another. So, if you look at symbolism for example, objective and rational thought is cancelled, similarly natural figures and forms if you are familiar if you look at Picasso's painting for example, figures are all for a lay person they are all distorted, but

for Picasso they are of course, perfectly and art lovers and connoisseurs of art they are perfectly fine.

So, this idea that one has to represent a figure as it should be, a human as the human really looks was cancelled by this is something fundamental a human should look like a human in a painting, but in a representation, but that does not. So, this is cancelled. Similarly, canonical activities are how you paint that has also been cancelled.

So, there are all these possibilities to the extent that sometimes you know the, what is called art in today's time will has come so far away from what was called art let us say few centuries back it is really astonishing. So, material as I said, in terms of material in terms of who the target audience is in the initial phases in the old times art was considered to be for the elite.

Now, it is cancelled by pop art and so on; themes and you know purpose and so on physical object everything has been cancelled. So, there is absolutely no fundamental feature of what an art is, basically that is the point.

So, if you look at these two types of you know output of art, the one on the left is Picasso's self portrait facing death. This is what he painted just before his death and the on the other side, you have this is the very famous paint it is not called it is not called a painting it is sort of an installation. So, there is a picture of a chair; this is the name of the work is 'three chairs' by Joseph Kosuth and he calls it. So, there is a chair there is a real chair and there is a picture of a chair and there is a dictionary definition of what a chair is ; now this is also called art.

Now, if you consider these two there is no similarity either in terms of you know material, in terms of how the output is, what the display is and how is the person who is you know who is considered the artist, how what is the type of engagement, what is the material used and so on; there is absolutely no similarity and this is they are not so far removed in time as like you know if you look at Monet or you know even older Vermeer or other painters.

So, if a category like art which is an abstract category; can have so many movements that changes even the fundamental understanding of what the category should represent what the category is, then how do we say that categories are stable mental representation; remember we started with the definition that categories are stable mental representation of

a concept. This is fine as when it comes to objects that are you know tangible objects, that are concrete chairs and tables.

However, designee the chair becomes it still remains a chair to the onlooker, but if you turn to abstract notions like art, music and many other such notions you will see the very idea fundamental idea that a concept must have a set of features that define them; this is completely denied by such kind of categories.

So, we can conclude that even the definitional aspects of a category can be challenged. So, in the initial part in the first part we saw that the representative members of a category can change, dependent on the culture, dependent on the language and so on. So, that is not all members of a category are same, they can be they can change and there is a gradation. Then we saw that this particular understanding of prototype can change depending on the culture.

Now, we see even the basic features which are supposed to be represented by the central members can also be contested, they are also not stable. So, prototypes are also changeable.

What does that leave us with? That leaves us with the fact that categorization as a fundamental mental process is open to a lot of changes, possible changes across time and across space and languages and cultures. Even though the process is fundamental to humans, the end result is not, this is changeable.

So, how do we take care of concept then; do we how do we keep a hold on.. how do we understand things in the world we probably need a new theory theories of categorization in terms of features probably are not tenable; we will look at this question, we will take this question up in the next module.

This is the reading material for references for this particular segment, for this module you can there are the some most of the important.. this particular book by George Lakoff is the book that I have primarily followed for this module, but then there are others also which are extremely important so you can all of them can be looked at.

So, Berlin and Brent, I have of I have already referred to and so on some more recent works here and Lera Boroditsky of course, because of her work on grammar the affecting the way we think.

Thank you.