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Course on Visual Semiotics for Visual Communication

By

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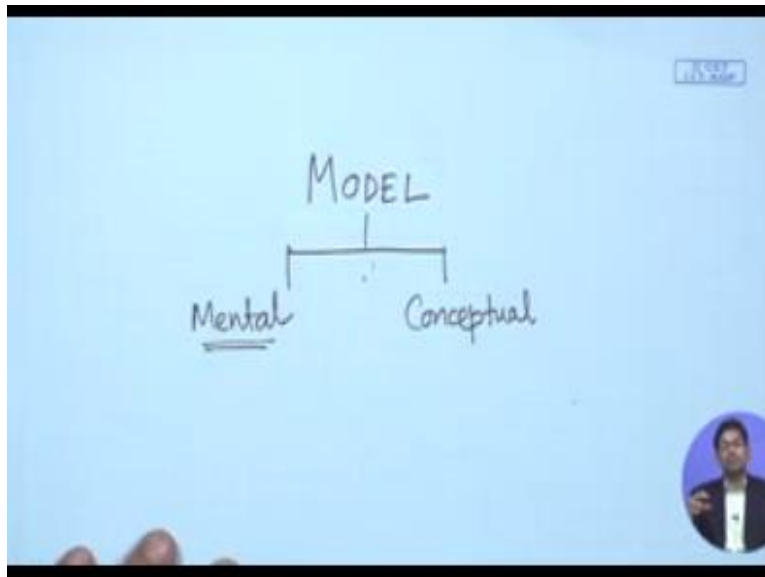
**Lecture 13: Visual Semantics for Visual Communication
(contd.)**

Hello students welcome back to our course on visual semiotics for visual communication. In our last previous few lectures we have looked into the semiotics, the semantics, syntax, pragmatics and these various domains of semiotics which are required for visual communication. And we looked how the science work amongst them and through that we do certain amount of communication.

We also looked at one of the psychological aspects of human perception which was termed as gestalts psychology or gestalts laws of perception. So there we looked at various forms or shapes in a visual field coming together and organizing with each other and then finally having an impact on our perception. So we learnt about all that in few of our lectures. In today's class we will look at a very interesting aspect of design of visual communication where we are talking of two different aspects.

One aspect is about models, the model which is created in our mind and the model which is conceptually developed. So based on that our design domains manier times work together, so that is one area we are going to look at is about various models and based on that model how we design and perceive things that is one. And the other aspect we are going to cover is termed as affordances this is the new term perhaps you will be encountering. But we will learn about that what affordance is, and then learn a little bit about that.

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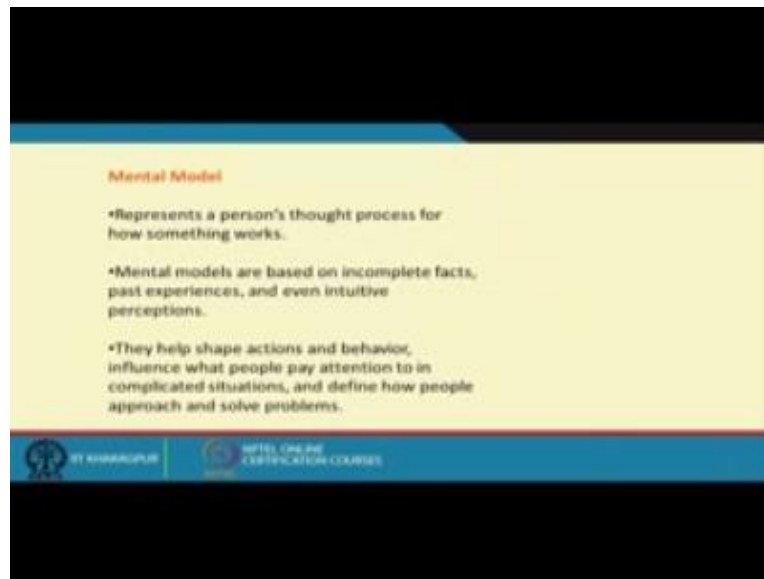
So talking about the models, so we are, we will talk about two different model here today. So one model is the mental model, so it is called the mental model, and the other model is called the conceptual model. So one as the word suggest one is mental, one which is happening without mind that is the model that we have in our mind through our experiences, and the other model is the conceptual are based on concept that you develop.

So one model is or to put in another word, another way is that mental model is something which is there with you prevalent with you or prevalent with the user or audience who is going to interact with your design, and the conceptual model is the one which the designer or creator is going to create okay. So we work with these two models together, so first we will have a look at what mental model is talking about.

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So if we look into the screen the mental model represents a person's thought process or how something works, mental models are based on incomplete facts, past experiences and even intuitive perceptions. So this is what is creating mental model, so mental model is completely based on an individual's understanding of the world.

So that again bring back to brings back to the point where we are emphasizing on the interpretent in the whole science system the interpretent plays a very important role where he has a particular mental model in place and that mental model are the understanding of the world is based on his experiences. Or in other words say you are observing a phenomena you are observing that the, a plant grows up and then it, the flowers appear on the plant.

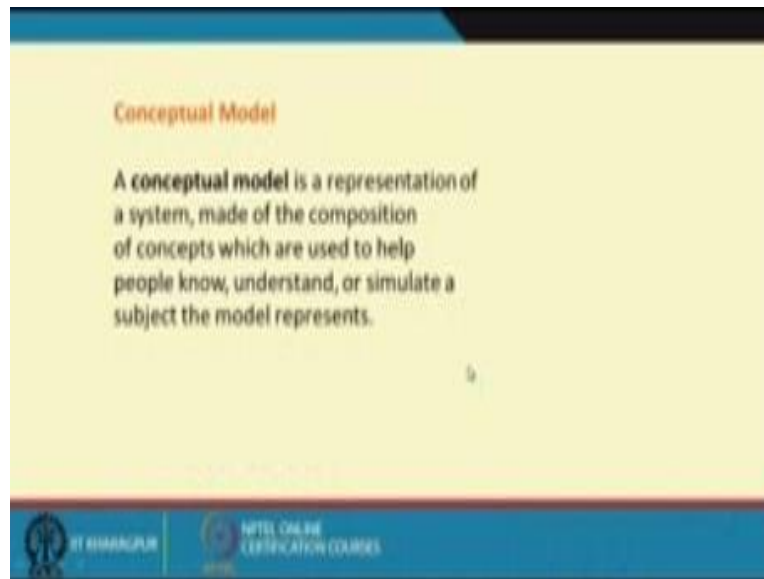
And then the flowers turn into fruit, so this is the phenomena that you have seen over your time frame through experience you have seen this fact phenomena and this turn back you have developed a mental model about how the plants grow. So this could be incomplete fact, this could be some kind of assumption, this are based on your perceptions, but this is the understanding of the world that you have that is your mental model or that is any person is equipped with a mental model like this.

And then this mental mode is applied in other factors or he matched with this mental model and sees if something is matching with this or does not match with this. So this is what mental model is in short. And how does it help, so the mental models help shape, actions and behavior influence what people pay attention to, in complicated situations and define how people approach and solve problems.

Now it is important to understand why mental model is in place, in the last class when we were talking about gestalts we tried to put forward the fact that the mind does not really want to spend too much time on solving a problem it wants get to the solution very quickly and efficiently that is the whole reason why we perceive certain things in a certain manner and there are certain ways we perceive right same thing happens for the mental model so here we see that it shapes our actions and behavior.

It helps us take the decisions and it defined how we are looking at the world in a very quick and compact manners so once the mental model is set you next time do not spend much time on that it realize on the mental model which is existent and it matches with that or does not need match with that and take a decision based on that so this part is clear how the mental model works with all of us we all required with that and we work with it.

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Now comes to the question where we are moving in to the conceptual model the other one we talked about so a conceptual model is a representation of s system so this is very important that a conceptual model is a representation of s system made of composition of concepts which are use to help people know understand or simulate a subject the model represents so as the definitions suggest.

What does the conceptual model do a conceptual model is basically presenting a system of concepts there are there could be different concepts coming together you are putting them together to make people understand that to make people get a in a first part view of that and then they can you know make some kind of assumption or decision based on this conceptual model or in others words say your framing poster say your designing a covers a paper a piece of paper where you will be drawing certain amount of things so this a conceptual model which your are trying to develop where you will put together different elements last day we talked about creating an imagery with a sun, flower and a text.

So these are the different elements which will come together and your are trying to put them together into a conceptual model so what it means you have put different systems together you

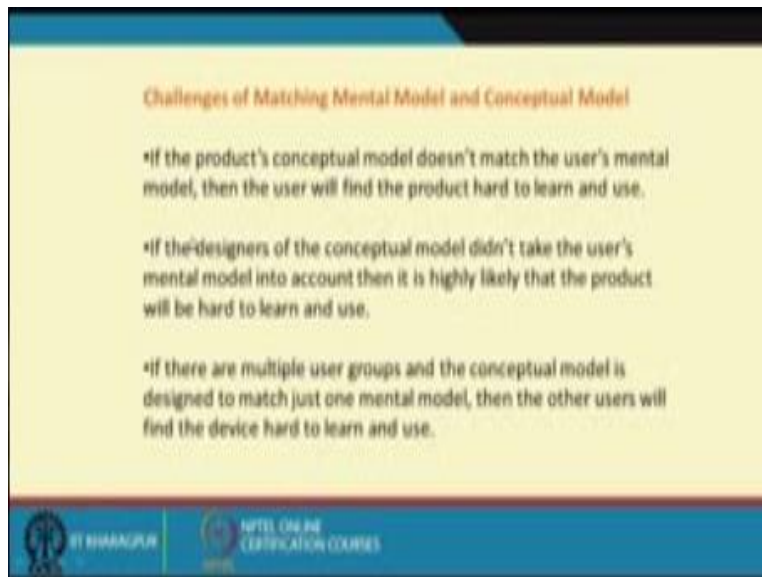
have tried to create a model of that and then you are presenting this concept so you are making a composition of this concept and which is used to help people know understand or simulate a subject that the model represents.

So basically you have created this to help understand and to encounter with that okay so essentially what your are trying to do is your creating a concept a model of that concept and then you are helping users to do that so I hope it is clear that that exists two model one model is where you are not creating anything the mental model gets formed automatically and the other model is where you are creating something so this is called the conceptual model and hence your presenting it to the user.

Now as you can understand there could be a overlap between these two model say you are say your are showing the lifecycle of a plant we have given the example of a mental model of a how plant grows are the you know what are the stages a plant encounters it grows then the flower appears then the fruit appears so this the metal model you have got and you are now representing the same thing conceptually may be in animation or in drawing in a diagram something like that and if this representation does not match with the metal model people may have a difficulty in understand.

There could be various errors arising out of it if there is a discrepancy none you know in concurrency between the mental model a conceptual model so from that perspective this is very important to understand how the mental model at conceptual model works and it is very important in terms as you can understand when it comes to making meaning out of the visuals that we are encountering so now we are.

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Challenges of Matching Mental Model and Conceptual Model

- If the product's conceptual model doesn't match the user's mental model, then the user will find the product hard to learn and use.
- If the designers of the conceptual model didn't take the user's mental model into account then it is highly likely that the product will be hard to learn and use.
- If there are multiple user groups and the conceptual model is designed to match just one mental model, then the other users will find the device hard to learn and use.

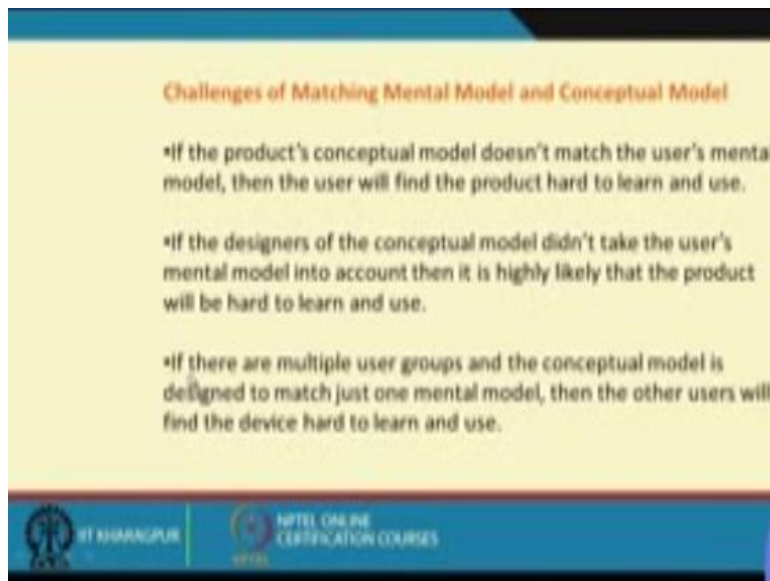
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We will go further in what are the challenges of matching the mental model and the conceptual model so we talked about that there could exist some kind of discrepancy if the mental model and the conceptual model is not matching so it is pretty much easy to understand how this discrepancy might encounter so whenever you are designing always pay attention to mental model of the users what kind of mental model.

They have they are equate with and what is the conceptual model presenting and hence you can mitigate some of these challenges but never the less you should always remember what are the challenges so the first challenge is if the product's conceptual model does not match with the user's mental model then the user will find the product hard to learn and use so say you have product say this is a product right so the or it could be anything for that matter it could be visual product it could be a you know tangible product like this and if the conceptual model of this particular product does not match with the mental model so the user really do not understand that this is a pen and it has to be used in a certain fashion, so there is a mismatch between the conceptual model and the mental model that the user has.

The user will take a longer time to learn so it is pretty much simple to understand so if you do not realize this does not match with your mental model how obtain is so you are designing a pen which looks very different the user will take long time to learn and then use it, so there will be a lag which will coming to picture.

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The second one is the designer of the conceptual model did not take the users mental model into account when it is highly likely that the product will be hard to learn and use what did that mean is whenever you are spending sometime on your design always pay attention to the mental model of the user so that is the reason why so that is the reason why many a times when the designer design is encounter with you user profiling.

So we will talk about user profiling in one of the later lectures but what is meant over here is you try to analyze who the user of your product is remind it when I say product would be a life style product it could be a equipment it could be a industrial product it could be a furniture it could be a poster it could be a graphic it could be a film it could be an audio visual it could be anything, so any product communicates with the user in certain fashion.

At this communication must take into consideration of the users mental model so whenever you are designing the conceptual model that conceptual model should have a mapping with the users mental model, it is only safe design in it that fashion okay. Now coming to the 3rd challenge if there are multiple in a groups so many a times it may happen for a particular object that you are designing or the particular theme that you are designing.

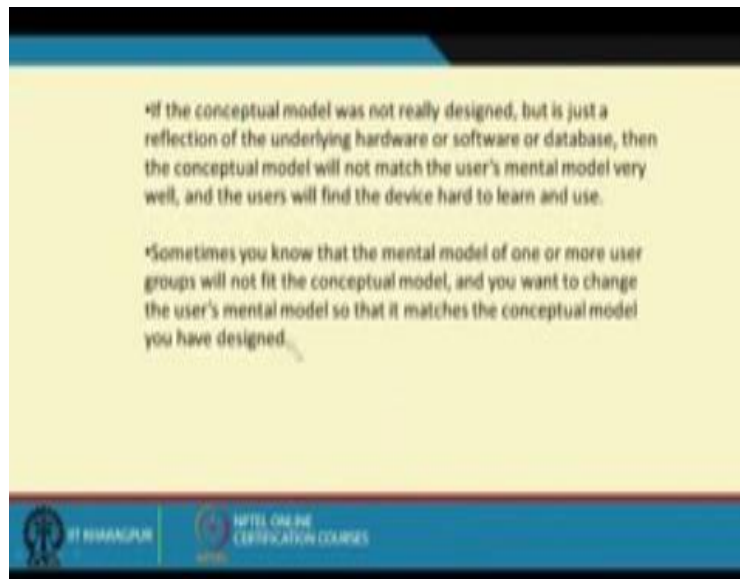
That will have multiple user groups and that multiple user group might have multiple exposure to different products and might have multiple mental model, say for example you are developing a interface for reading a book so you have conventional book reading you have book reading on a tablet you have book reading on other devices and now you have to come up with the newer visual communication mode or an interface.

Or a graphical user interface GUI it is called so you are coming up with a conceptual model of that so here you may have different users groups some groups might have might be only read physical conventional books some group have read books have the same time have used I pad or any other tablet you see for their reading purpose some other group have never used conventional books.

And only used on digital medium so you can have different groups and definitely they will have a different mental model about reading so and now the challenge comes that you have to take into consideration the mental models of many of this groups and combine them together for a maximum impact model, okay. So and the conceptual model is design to match just one mental module with the other users will find the device hard to learn and use.

So if you are only considering one user group and one user mental model for this there will be very difficult for other user group to learn and master it this is very much simple so I have to look at all and then come to a unified solution.

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There is some more challenges so if the conceptual model was not really designed but it is just a reflection of underlying hardware, software and data base or many other ingredients coming together then the conceptual where the model will not match the users mental module very well and the user will find the device have to learn and use, what it eventually means is, a design should not be by chance okay.

Many a times in our you know world around us we encounter product which have been designed by chance of putting together hardware software or all other equipments that goes in together all of them are brought together and the product is formed and you are there to use the product visually or tangibly whichever format is but the idea here is if you do that it is never taking into consideration.

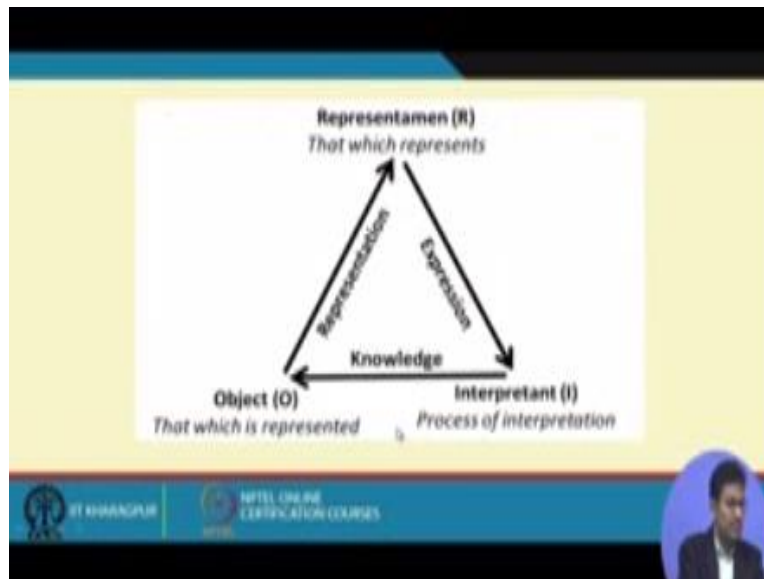
How an user is equipped to look at that product, what kind of mental model is has got may be he has got a completely different mental model of reading a book and you have put together you know best of the hardware, software everything together when you have come up with the reading equipment but the users does not even realize what is this, it cannot map with the mental model and hence it will get difficult.

So this is the idea where you have to merge this together okay this subject will lie on that for your future applications and sometimes you know that the mental model of one or more user groups will not fit the conceptual model and you want to change the users mental model so it matches the conceptual model you have designed, so this is another very important situations which may arise.

Many a times you know that you have 3 different user group and you cannot really match the mental model it may happen many a times that you cannot match to their mental model you have the conceptual model that you are designing is not meant for certain user groups their mental model is not equipped that way, so in that cases what we do is at least have a training program incorporative with that you aid the user to learn that and then uplift their mental model so that it matches with your conceptual model.

So this is what you must have encountered in many of the wave applications or computer application the first time you use you see a tutorial a video or it navigates you step by step how different things are used so what it is essentially doing is you might not have the correct mental model to match with the conceptual model of the producer but by these means of you know video and other kind of aids you are more I now equip to phase the conceptual, so there could be various challenges certain things have to be kept in mind, certain things have to be incorporated within the design and hence you approach your visual communication design.

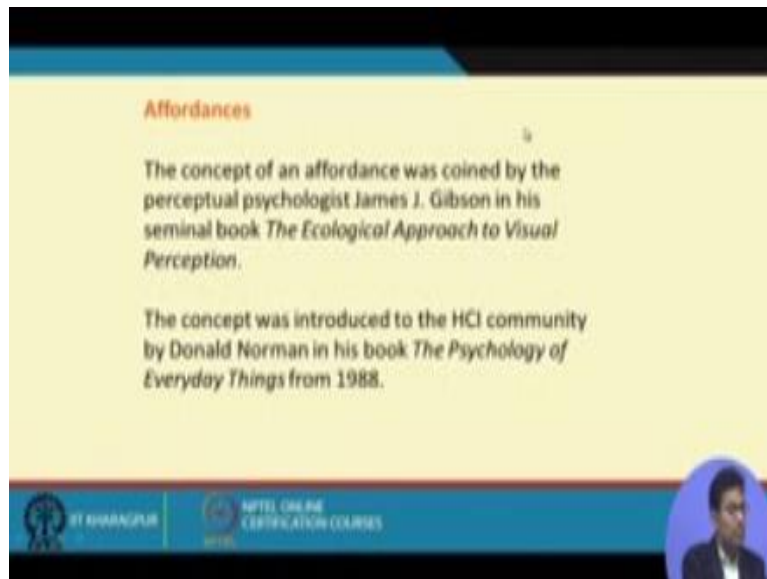
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So this more or less takes us to the conceptual model and so we come back here again to this particular diagram just to explain how the mental model and conceptual model is working when we are talking about semiotics, so we have an object over here and we have the interpreted who has a knowledge of that objects so this is where your mental model is very, very prevalent, so we have a very strong mental model acting over here and then the object is being represented by some kind of sign vehicle this is the signifier that we have got that has got an expression and that again is being perceived by the interpreted.

So this part, this particular area is to deal with the conceptual model or rather this particular position has been designed with the conceptual model in mind so that the mental model of the object that the user has matches with the conceptual model of the signifier and the representation and the expression which the designer is crafting that matches with this mental model. So this is how this particular diagram also comes into relevant when it comes to the mental model and the conceptual model together.

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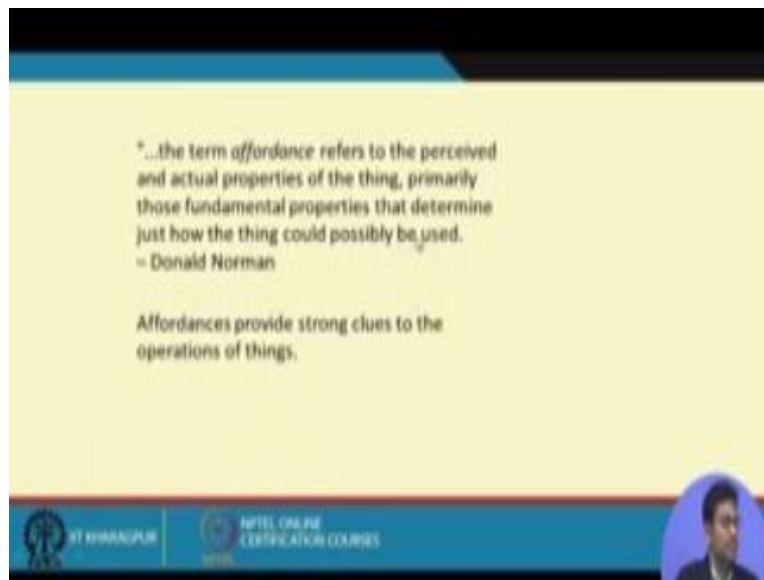


So now we move on to another aspect which we talk about affordance an affordance is a term which is coined only in the 20th century by the you know the Gibson who is very well known for his book on visual perception so there he first coined the term affordance and later he find again the mention of affordance by Donald Norman who is a author of a very famous book which all of you should read if you are interested in visual communication semantics or product design from a semiotics perspective it is called the design of the everyday the psychology of everyday things. So basically Gibson in his book the ecological approach to visual perception coined this term affordance and then the concept was introduced by Donald Norman again when he was talking about this book of everyday things when he was mentioning the human computer interface.

So basically the affordance this word affordance means that certain clue in an objects certain clue in our visual field which makes us use an object in a particular fashion, so say for example if I show you this pen this pen is an object and this is giving you an affordance of holding it so you hold it this way or you know the cap you know that it is to be pull to set a part so there are certain clue which this particular object is giving you for this to be used in a particular fashions.

So in short that is what is affordance of this particular object or various parts of this object which gives you that kind of a clue and hence you use that.

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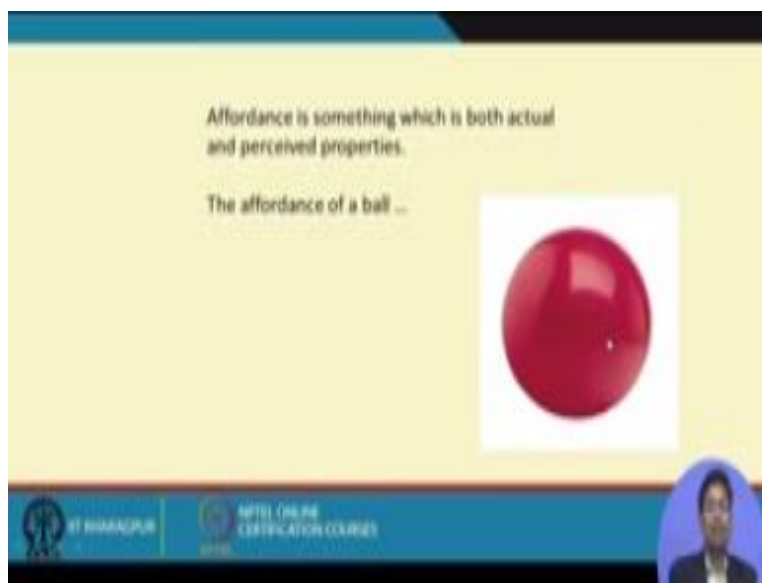
So let us look at the more robust definition of by Donald Norman so the term affordance refers to the perceive and actual properties of the thing primarily those fundamental properties that determine just how the thing could possibly be used, so affordances provides strong clues for operation of the day so as just I have explain about this particular pen the affordance is nothing but the actual thing which are here so there are two things which normally mention is the actual and a perceive thing clue that this object provide so the actual clues are sat this particular cap and this as a disjointed area so you know that it has been pulled a part or maybe it has a small clip.

So you the clip could be you know utilize and you know hung it you where hang it somewhere so these are various clues that this objector giving which ate the actual clue. And the other one is perceived clue which actually perhaps of object is not giving but you are getting a perception that okay this pen maybe use for something else you know you can use it has a tool for you know really pocking something or you know turns something.

So this is a perceptual use which you are getting from this particular object so you have an actual and a perceptual both kind of clue which are coming out from it and hence you use that object so as you can understand from our visual semiotic perspective when you are creating a visual communication or the environment is interacting with you we are picking up these clues all the time from these round objects from this round environment.

And based on this affordance we are doing the operations with that so if you look at a flower if you feel like plugging it so that the affordance of a flower so that is the visual communication which happens when you look at a flower and that is the affordance it has given or you feel like touching a flower or if you feel like going close to a flower, so these are certain qualities actual and perceived qualities which is the flower is providing to you and based on that you take some actions based on that.

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So now affordance is something which is going to the actual and perceived so I have given you an example of this ball and what is happening when we are looking at this ball actual affordances are the texture of the ball the shape of the ball you know the bounds ability of a ball so these are the actual physical characteristics which are coming to you as an affordance on the other hand

you have the perceived affordances in which you are perceiving how this boll could be perhaps used.

It could be help it could be drone wing to some of the perceived affordance that you are having so one is the actual one say if you look at this image so one is the actual affordance whatever, so you have this luster's you know shiny surface of the boll, you can get a feeling of a material you bounds ability of the boll so these are the actual perceive prop actual property that you get, and the other is the perceive property.

So if we know that if the bill is thorn probably it will bounds back so this is something you are imagine your assuming as a perception and coming to the affordance finally your arriving at the affordance of this particular object and hence that will relate to its operation.

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Gibson's Affordances	Norman's Affordances
•Action possibilities in the environment in relation to the action capabilities of an actor	•Perceived properties that may not actually exist
•Independent of the actor's experience, knowledge, culture, or ability to perceive	•Suggestions or clues as to how to use the properties
•Existence is binary - an affordance exists or it does not exist.	•Can be dependent on the experience, knowledge, or culture of the actor
	•Can make an action difficult or easy

(McGrenere and Ho, 2000)

So one of the very common examples I give for affordance is many a time when you look at a door okay so when you look at a door you have a knob on that or you have handle on that what affordance does the handle give does it give an affordance of pulling the door or pushing the door so many a times you will see that even of the giving the handle it says pull the door it is not

required when you have a handle it is the affordance is that you will pull it towards you it does not give you the affordance of pushing it.

So pushing it could be just a plate on the door you can have a metal plate on the door which gives you the affordance push only even if you want you cannot pull that a metal plate on the door so this is what an affordance does and that helps user to create much more efficient design so I have given you an example of a product but this can extant up to your visual communication nodes also which gives you only one clue how that is to be seen and perceive.

So there are two dustings cool of thoughts when it comes to affordances we have the Gipson criteria of affordances and we have the Normans criteria of affordances these are pretty simple to understand Gipson gives a action possibilities in environment in relation to the action capabilities of the actor we has perceive normal perceive properties that may not actually exists many a times the perceive property may not at all exist according to normal, but you have some actual affordances bares Gibson the suggesting that .

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The slide is a comparison of two theories of affordances. It is divided into two columns by a vertical line. The left column is titled 'Gibson's Affordances' and the right column is titled 'Norman's Affordances'. Both columns list three bullet points. At the bottom of the slide, there are logos for IIT Kharagpur and NPTEL Online Certification Courses, and a small circular inset photo of a man in a suit.

Gibson's Affordances	Norman's Affordances
<ul style="list-style-type: none">•Action possibilities in the environment in relation to the action capabilities of an actor	<ul style="list-style-type: none">•Perceived properties that may not actually exist
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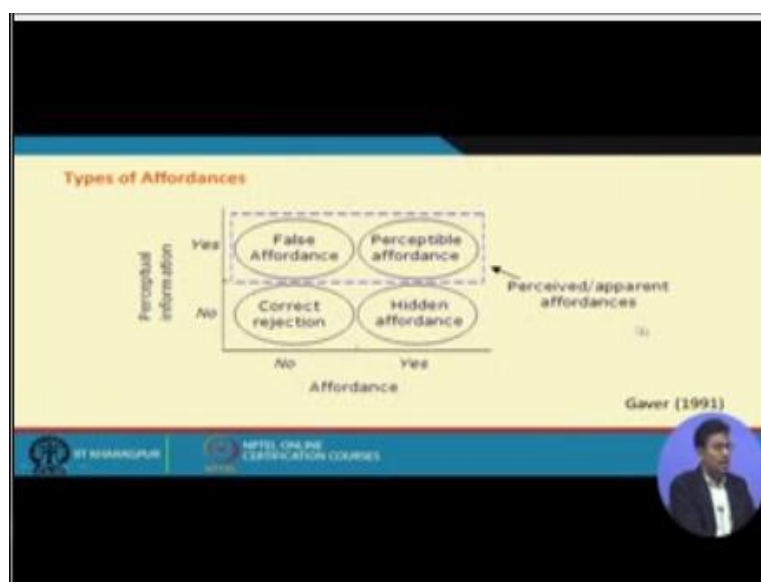
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It is related to the capability of the actor, what the capability of the actor is based on that you the action possibilities where as Norman suggesting that if perceive properties that may not actually exist at all there could be only actual property present Gibson you suggesting independent of the actor's experience, knowledge, culture, or ability to perceive .

So this is more of bottom of approach were we talked about Gibson suggesting we just looking at it. Whatever you are whatever stimulate coming based on that summation ion it is nothing to do with your passed experience, or culture that where as Norman suggestion and clues as how to used the properties so mostly it is do with the property aspect of it.

And it is ,it can be depended on experience, culture of the actor so here the perceive property many a times depending on the culture and activities and existences is binary either you an affordance or you don't have an affordance that's what Gibson suggest you where as can Norman affordance make an action difficult or easy .So Gibson affordance either present are not present they cannot be duality in that where as for normal it is saying that affordance make it. Difficult or easy there is a grading between affordances okay, so this is the basic differences between Gibson school and the normal school.

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Now we come to different types of affordances we have you know based on affordance and perceptual information this was Gaver (1991) it is pretty much simple to understand so you have affordance in this axis one option could be there are no affordances yes affordance are there very perceptual information yes or no, so when we have let's case of there is no affordance and no perceptual information you go for an rejection.

You do not use that is a case where there is a case, where there is no affordances and no perception clue so you really do not aspect that there is a deception okay, but let's take us an example, where there is perceptual information but no affordance .So let's take a example, of a chair you see a chair you are getting perceptual information about the chair look at the chair is made out of paper okay,

It just a model of a chair but you are getting some kind of perceptual information but affordance is not there you sit on the chair may be thus thickly is very thin looking at the material the actual properties looking at if you are not getting affordance this is creating a false affordance which is that a false affordance where it is a false affordance if you lie on that you will encounter into a problem where as hidden affordance appears when there is affordance but there is no perceptual information. Say for example, you have a door, you have a wall, and you have a door there so you have affordance which is presentive.

You can make out that it is a door but you perception wise you cannot make out may be it is a glass door on a glass wall, so there is a small hint of affordance somewhere may be there is a line all rounded by which you can think of there is a door there it is giving you some kind of affordance but there is no perceptual clear perceptual information, so false door is a good example, where you getting a hidden affordance.

So the affordances there but it is hidden and the ideal case is where you have perceptual information and you have affordance so this is perceptual affordance and perceived uptrend affordances, so you should always go for perceptual and available affordance situation and not encounter into false affordance or hidden affordance that will lead into confusion.

So these are different kind of affordances which could be present and in your design you should always take into consideration what is perceptually prevalent and what affordances you are presenting so that come brings us to the end of understanding mental model consumption model and affordances together thank you.