Social Behavior and the Brain: An Introduction to Social Neuroscience
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Week – 05
Lecture – 21

Hello and welcome to the course Social Behaviour in the Brain and Introduction to Social Neuroscience. I am Dr. Ark Verma, an associate professor in the Department of Cognitive Science, IIT Kanpur. This is week 5 of the course where we will try and understand social outgroups, we will try and understand the way we interact with them, the emotions they elicit in us and the neural basis of those emotions. in this lecture will continue talking about dehumanize perception the exact topic that we that we discuss in the previous lecture. Now if you remember dehumanized perception basically refers to when extreme prejudice prevents one to perceive the humanity in other members or members of others or other outgroups.

What does this mean? It basically means that we fail to consider these other individuals or these targets of extreme prejudice as live living people. we fail to consider their inner life, we fail to mentalize them, we fail to empathize with them or understand that they have an inner life, they have feelings, they have emotional states, they have will, they have a choice, the entire inner life that we ascribe to even sometimes objects, even sometimes to our bikes and our cars in order to get you know endeared with them in order to treat them fairly and nicely and compassionately. it happens you know in some situations where the overriding feeling towards this other person or towards this other out group is the feeling of disgust and what this feeling of disgust comes from where this feeling of disgust comes from is from a place of extreme prejudice what it does it is that it sort of blinds us to the possibility or it blinds us to the mental states and emotions that these others might be feeling that makes our behavior extremely harsh and inconsiderate towards them. In a sense and that is what we have been discussing so far is that we dehumanize them we strip them of all the qualities that are described or that are considered necessary for anyone to be regarded as human you know the notion of choice of will of mental states of experiences in all of that as a package we believe that these people this person does not have any of this.

And that allows us to even reinforce our prejudice even more that allows us to sort of you know behave in a particularly harsh manner in a particularly unfair inconsiderate cruel manner sometimes to this bunch of people and this particular phenomena is referred to as dehumanized perception. Let us consider some of the theoretical models, some of the important or one of the very important models that has been put forward to understand

this concept of dehumanized perception in some more detail. Now Fiske and colleagues offer the stereotype content model or the SCM model which is how we will talk about this in the next lecture as well. It predicts differentiated levels of prejudice for different kinds of outgroups. Remember we started with the premise that people treat those that are similar to them or that are considered you know in their own in group by any source of shared identity say for example being the same gender, being the same religion, caste, nation any of these basis.

People who we classify as members of out groups are basically targets for different kinds of feelings. I mean sometimes if we are we are kind towards them, sometimes we are extremely harsh towards them, sometimes we are prejudiced or discriminatory towards them. So, Fiske basically says and basically predicts as per the stereotype content model that different types of outgroups can be there and these outgroups can be understood on the dimensions of warmth and competence. I will talk to you about the model in more detail. Now, as per this different dimensions of warmth and competence, we can basically classify these different kinds of outgroups we interact with.

And based on where these out groups lie on this continuum, we basically decide or we basically choose the way we are going to interact with them or the way our attitude will be towards these groups. So, this SCM model incorporates this fundamental friend for plus capability judgment. I will just show you the model in a bit. It proposes that everybody or all individuals appraise these societal groups as intending either help or harm. So, this is warmth.
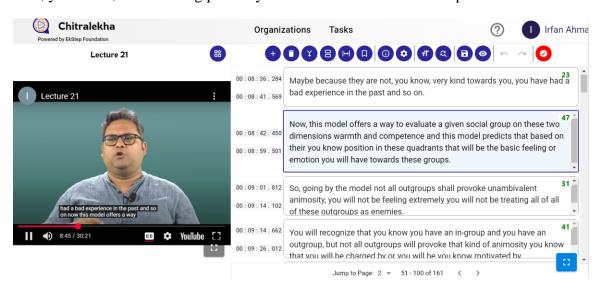
You can be warm towards people who you know that you know you want to help or they want to help you and there is that compassionate relationship or harm you know there can be groups that you will perceive oh these going these are people or this is a person who is intending to harm me so on this scale of warmth one side there is help the other side there is harm and as capable or not to enact those intentions say for example somebody might be intending to harm you but they are so you know inferior to you in some kind of social strata in some kind of metric that they cannot enact that intention to harm you. And similarly some people can be you know while they might be intending well towards you they are not in a position to help you. So, this is the dichotomy on one end there is warmth and on the other end there is competence all right. And across these dimensions the outgroups can be differentiated into four low to high warmth into competence clusters and this basically according to this model leads to four types of basic emotions that we will have for these outgroups. What are those emotions? Those emotions are pride, envy, pity and disgust.

Let us look at the slide and let us try and understand this in some more detail. So, here you see on the x axis is the is the dimension of warmth, this is the model the stereotype content content model by Fiske and colleagues. On the y axis there is warmth and on the

x axis we have competence, the extreme is high and there is here is low. Now you can see here based on where or in what quadrant this particular group is lying. So, all these four circles are groups based on where on this you know two dimensional plane these you know out groups lie will basically determine the feeling we will have towards them.

For example, you can see when there is low warmth and low competence the feeling that is you know supposed to be felt towards these groups is that of disgust. So, people who you really you know who are very indifferent to, people who neither inspire any warmth in you and nor are considered capable of you know helping you out or you know anything like that, they will basically inspire this feeling of disgust. On the other hand, you will be filled with pride for people who you like, who you think are close to you, are in your in-group and also have high capability, high competence. You know you see a lot of times people take pride in other people's achievements. Oh, I know this guy because he was from my school.

I know this guy because he belongs to my country. I know this guy because he belongs to my caste or my religion or my gender and there are different ways people sort of chalk this out conveniently. So, on this you know top dimension is this idea of pride and then there are slightly you know different kind of dimensions for example, pity is there where there is high warmth, but low competence and envy is there when there is high competence, but low warmth. So, these are people who obviously are probably doing very well in their lives and you are envious of their social standing and of their position and so on, but they are people you do not like so much. You know, a lot of times there is often somebody in your workspace or in your class or in your family who is doing very well, you know, who is doing perfectly well in his demonstrated competence and so on.

But then these are not the people who you like so much. Maybe because they are not, you know, very kind towards you, you have had a bad experience in the past and so on. Now,

this model offers a way to evaluate a given social group on these two dimensions warmth and competence and this model predicts that based on their you know position in these quadrants that will be the basic feeling or emotion you will have towards these groups. So, going by the model not all outgroups shall provoke unambivalent animosity, you will not be feeling extremely you will not be treating all of all of these outgroups as enemies. You will recognize that you know you have an in-group and you have an outgroup, but not all outgroups will provoke that kind of animosity you know that you will be charged by or you will be you know motivated by.

Outgroups that are stereotyped as either competent or warm, but not both would either elicit you know the intention of either pity or envy we just saw it previously. So, both are sort of ambivalent emotions whereas, in groups and allies that are perceived high on both dimensions would receive a positive response for example, the response of pride. So, these responses pride and admiration assume self relevant positive outcomes and they are typically reserved for cultural defaults. So, for example, there is a cultural default at oh this particular you know strata of society is both high on warmth and competence and people should be warm towards it people should appreciate this and these are the champions and so on and so. For example, the middle class of any society is considered to be the engine of their society.

These are the people who are working and who are working hard, who are moving the society, who are sort of not most affluent and they still are connected with the you know lesser fortunate member of the society. There is that interaction and that you know relationship still intact. So, based on where these groups lie, where you assume or evaluate a particular group to be is where you will sort of set your you know stance of how am I going to treat or feel towards this group. Out group prejudices interestingly will occur in the three remaining quadrants and some will be more you know harsher and more worse than others. So, let us look at it for example, moderate prejudices are slightly ambivalent they are neither very positive or very negative.

So, they mix positive and negative reactions for example, in one mix case you will have both envy and jealousy which represents others positive outcomes ah and they are basically recited by groups that are considered you know stereotyped as competent but they are not really warm ok ah envy for example admits respect but harbors dislike so people you know here ah on this ah you know place which have high competence but low on warmth they are considered to be you know you are envious and you are sort of aware of their competence and their social power, but at the same time you are not very happy about them, you do not like them, there is a feeling of envy, there is a feeling of jealousy, there is a feeling that oh you know it is good by luck or by you know sheer talent that guy has achieved so much, but he is not a good person and you will hear these reference a lot of time, oh he is very successful, but he is not a good guy alright or a good girl or any of those kind of things. Now, there is another mixed combination also possible. The other

mixed combination would be groups that are stereotyped as warm, but not competent. For example, elderly people. There is a lot in terms of warmth and in terms of relationships and in terms of wisdom that you can get from you know elderly people for example, but there is not a lot of competence.

They are not of a lot of use to you directly if you look at it that ways. If you look at whether these people can harm me or these people can you know help me achieve great things sometimes the stereotype is that they are warm and they are good for the society but in general they are not as productive members of the society as they once were alright. So these kind of groups will elicit feelings of pity and sympathy which are basically reserved for you know people with uncontrollable negative outcomes for example if something bad is happening these people cannot defend themselves against those kind of feelings. So, this is again very interesting, but look at this in more detail for example, pity it admits sort of benign you know low charged reactions, but sometimes also disrespect and remember one thing that I will just you know set step aside from this model and tell you is that this model is described in terms of a highly individualistic western society. So, if you feel that a bunch of things that I am saying here are not really making sense in the perspective of an Indian society, you will have to sort of temper it with their understanding of how Indian society would work or say for example, from an Indian perspective how will you moderate this particular model and how will you assume that things work, alright.

So, pity for example, is not really considered a very positive emotion in the West. It obviously admits denying reactions, you will not really go after these people but you will not respect these people a lot. So, for example, you will not be inclined to listen to them and you will not be inclined to be convinced by them and so on. Okay, only so moving on only the most extreme groups for example that lie low on both competence and warmth will actually receive this unabashed disliking and disrespect. So, this is the bunch of people who will elicit disgust.

Okay, these are the groups that are neither warm they do not inspire feelings of warmth within you, they do not inspire feeling of help you know. helping within you or they will not be very helpful to you and so on and they are neither perceived as competent they are not perceived as competent people who can actually make a lot of difference in the society ok and this basically breeds what is called the worst kind of prejudice both disgust and feelings of contempt and this is a sort of group that based on perceived moral violations and negative outcomes that they are allegedly causing themselves. for example give take a particular social group any group you can take you can just carve out your society into groups and you can say oh these people for example I will take a classroom example because this is a class where we are in there are students who are not very good at studies but they are also not paying a lot of attention they are not really you know competent, they are a not very competent, they are not working hard. So, they do not you

know inspire any kind of warmth in you as well. And when these students fail, you will see that reaction from not only the teachers, but also the classmates is of indifference, is of sort of it is not even pity, it is not that the student is just not very competent, but was working very hard.

It is that you are a). you are not competent, b). you are also not working hard. And, this kind of thing gets a you know double negative sort of a reaction and the understanding is that these negative outcomes that they are having for example, failing in the class or lagging behind is because of their own doing. Now, if you take that line of reasoning what very easily happens is that you will not be inclined to be kind towards these people. you will basically feel that oh these people deserved what they got and then you can take this out from the classroom and you can take it to any kind of groups you can take it to racial groups for example the blacks versus white in the west you can basically say oh the blacks deserved what they got in terms of slavery or discrimination etc etc or the jews you know deserved what they got or for example any social group you can take in your own society as well And you will understand by this line of reasoning is that these kind of groups we will be least concerned about.

These are the kinds of group we sort of, you know, put blinders and get them out of our sight because we don't want to engage with them in any which way. And that sort of, you know, is the first few steps of dehumanizing these groups, basically ignoring the possibility that they have an inner life. They also have feelings and emotions and they also have choices and will and whatnot. all right. And this is again something that is you know possible both for people, animals and non-human agency for example, machines say for example, if your bike is not very good and it is always giving you problem at times you will get discuss and say oh just let me you know throw it to throw it in the garbage and so on.

And this this basically this this model it may it becomes a unique model in that sense as you know it forms the basis of very basic emotions not really just social emotion, but a very basic emotion it tells you that why would you have a particular kind of feeling towards member of a particular group or towards a particular individual because they lie in a particular position on this warmth by competence you know two two dimensional plane. Now there is a very interesting model, there is a interesting map that was put forward by Cuddy and colleagues in 2007 and the map is known as the behavior from intergroup affect and stereotypes and this map basically predicts behavioral orientations to groups that are based on their perceived warmth and competence. So this bias map basically tells oh these are the groups, this is where they lie on these you know. continuum of competence in worms and this is what we should be feeling towards it or what we will typically feel towards there. For example, within this map groups that appear high on both these SCM dimensions receive both active and passive facilitation, the mixed quadrants receive both positive and negative behavior, passive facilitation and

active harm go to those who elicit envy whereas active facilitation and passive harm goes to those who elicit pity.
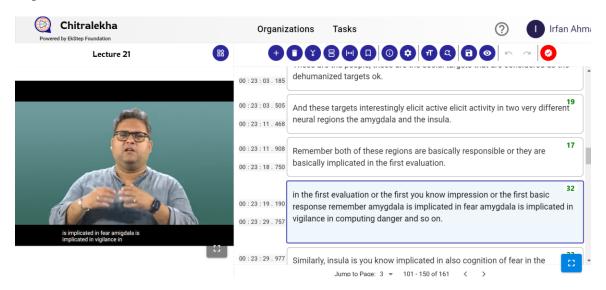
So, you can basically consult this map the bias map and you can basically see how does this bias map predict our reactions, our you know first stances towards the groups based on where they fall on this competence you know warmth by competence metric. Now groups that are perceived both low in warmth and competence are the groups who disgust who elicit disgust they are basically subjected to both things they are subjected to both active and passive harm. Interestingly just sort of dwell on in this a little bit what would be active harm, active harm would be that you are consciously working towards harming or providing harm or you know facilitating harm to these people but what is passive harm then passive harm is the idea of indifference when these people are suffering when they are in a bad situation when they are in a bad place your heart is not getting moved by their troubles your heart is not getting moved by the by their difficulties and by how they are feeling So, what interestingly happens is this group gets subjected to both active harm you might use every opportunity and every chance to harm members of this group, but more importantly you also avoid any you know you do not take up any possibility any opportunity to help these people out. Alright, and these are behaviors consistent with both the historic and the present day examples of dehumanization. I have in the past taken examples of racial bias.

So, you know as I was saying earlier the blacks got what they deserved is what you know some people would feel because according to their initial perception the blacks lie on the you know the lowest continuum of both warmth and competence. the Jews got what they deserved again you can consider any number of Holocaust movies and the you know the pervasive idea that seems to fuel the Nazis and Nazi sympathizers is the fact that oh Jews are the source of all the problems in the country. Germany, you know, as was propagated by the Third Reich and that is why whatever, you know, the Nazis and the Hitler and Hitler was doing towards them was well deserved. People did not make attempts, although a lot of people did, a bunch of people did not make even attempts to sort of save them from the harm that they were getting and these could be people who you have shared your, you know, lane with, you lived with them, you worked with them, they were your colleagues in the university few years ago and so on and so forth. So, this is a very interesting way where you can see oh how does dehumanization basically work and this model the SCM model provides you with a very good estimate of the mechanics of dehumanization.

Now this is just you know bit of theory about dehumanization, is there neural data, is there other kinds of data that supported let us let us look at it. So, researchers have obviously tried to investigate the neural basis of emotions elicited by the groups as characterized by the SEM model. For instance targets from all of these SEM social groups were found to elicit activity and you know which was reliably implicated in

mentalizing and social cognition are also which is the region called the medial prefrontal cortex. We have talked about the medial prefrontal cortex and its role in mentalizing, its role in social cognition, its role in empathy and so on. So, medial prefrontal cortex is the critical region that is activated by people on all of these social groups.

With the exception however of social targets who elicit the most basic negative emotion of disgust. So, all three you know kinds of groups do moderate medial prefrontal cortex activity to a certain extent to different extent for that matter, but this group that is eliciting the feeling of disgust does not seem to even activate or moderate the activity in the region of the medial prefrontal cortex. These are the people, these are the social targets that are considered as the dehumanized targets ok. And these targets interestingly elicit active elicit activity in two very different neural regions the amygdala and the insula. Remember both of these regions are basically responsible or they are basically implicated in the first evaluation.

In the first evaluation or the first you know impression or the first basic response remember amygdala is implicated in fear amygdala is implicated in vigilance in computing danger and so on. Similarly, insula is you know implicated in also cognition of fear in the cognition of you know basic negative outcomes and so on. So, this is very interesting that this group on the you know SCM model this particular group actually does not moderate medial prefrontal cortex activity Rather this group moderates activity in the amygdala and in the insula. Now, moving on Harrison Fiske basically conducted studies to investigate this and to sort of establish this a little bit and therefore, they showed participants pictures of a social target for either a long period 2 seconds or a very short period 500 milliseconds after a 12 second fixation across in a slow event related design. So, for 12 seconds they are just waiting for the picture to come then the picture either comes for 2 seconds or just for 500 milliseconds ok.
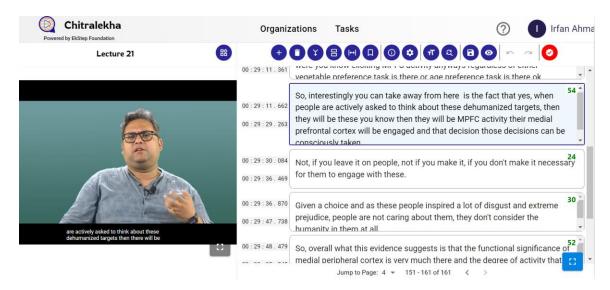
The task of the participants was to basically indicate via the button press which of the four SCM emotions participants felt towards this particular person. So, for example, there will be four options whether you felt pride, envy, pity or disgust towards this particular social target that I have shown you. Now, what will you do to do this? So, participants were basically found that they are assigning each emotion to the corresponding picture social target from that respective SCM space at a rate well above chance level. So, it was very interesting to observe that the participants the way they were assigning emotions were actually in line with what was predicted by the SCM model. So, if there were people who followed you know on the lowest category of both warmth and competence those people seem to inspire pity sorry seems to inspire disgust, people here high on both of these combinations seem to inspire pride, this other side high competence low warmth seem to inspire envy and high warmth, but low competence seem to inspire pity.

So, this is basically what they found and it is very interesting that the neural data seems to have corroborated the predictions of the stereotype content model which was put forward by this you know the Fiske and colleagues. Indeed, neural activity for each of these social targets categorized by emotion was then compared to the neural activity of during the fixation baseline and to each other you know in 3 is to 1 contrast. So, they are basically comparing these 3 groups versus this particular group and what was found was that only the social targets that elicited disgust fail to generate any activity in the medial prefrontal cortex above the fixation baseline. So, other than the you know what activity was could be observed with respect to the fixation cross was the overall activity that was being observed by people of this group as well. So, it is basically not moving you, it is basically not engaging the cognitive system or the neural system in your brain that is engaged or that is called upon to mentalize to empathize to understand what this other people might be feeling what these other people might you know how their inner lives etcetera would be ok.

So, this is a very solid. I would say demonstration neural basis of what we were calling dehumanized perception. So, it suggest that participants are actually not really thinking about the minds of these dehumanized targets, they are just putting them in a place where they do not want to even care about them. Interestingly, the two studies we were talking about also found a small, but contiguous overlap of the medial prefrontal cortex voxels in response to other social targets that did activate the area this MPFC above the baseline area. And why is this particular you know overlap interesting because it seems to indicate that the effect size for the activity related to dehumanized targets was significantly smaller than the activity that was being shown by the other three social groups. So, it is it basically again sort of supports the fact that people are not responding to these dehumanized targets, they are not getting moved at all towards these dehumanized targets.

So, this kind of evidence suggests that dehumanized targets are indeed processed at a rather different end of the humanized dehumanized continuum as compared to all other social targets in contention. Now, moving on finally to elicit this medial prefrontal cortex activity to dehumanize targets the authors actually went ahead and they asked these participants to engage in a mentalizing process about these targets. So, so far everything was implicit they were not being you know motivated to really start thinking about these targets. So, the author said ok let us try and actively do this. So, what did they do? They said ok now think about these targets think about for example, what their vegetable preference would be you know what kind of vegetables they would like or dislike or for example, whether they are old age or you know over middle age or under middle age kind of people.

So, at least think a little bit about them. And when these participants were asked to infer either for example, the vegetable preference or age category of these participants, then it showed that there was greater medial prefrontal cortex activity when the same dehumanized targets were you know being judged. So, it is when they are actively being asked to do so, yes there is some medial prefrontal cortex activity. The other social targets from the same place all same space all anyways were you know eliciting MPFC activity anyways regardless of either vegetable preference task is there or age preference task is there ok. So, interestingly you can take away from here is the fact that yes, when people are actively asked to think about these dehumanized targets, then they will be these you know then they will be MPFC activity their medial prefrontal cortex will be engaged and that decision those decisions can be consciously taken. Not, if you leave it on people, not if you make it, if you don't make it necessary for them to engage with these.

Given a choice and as these people inspired a lot of disgust and extreme prejudice, people are not caring about them, they don't consider the humanity in them at all. So, overall

what this evidence suggests is that the functional significance of medial peripheral cortex is very much there and the degree of activity that you can see in the medial peripheral cortex may be well correlated to the degree of perceived humanity in the social targets that we are coming across. So, I will stop here, I will continue this discussion a little bit more in the next lecture as well. Thank you.