

Social Behavior and the Brain: An Introduction to Social Neuroscience
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Week - 05
Lecture – 22

Hello and welcome to the course social behavior and the brain, an introduction to social neuroscience. I am Dr. Ark Verma, an associate professor in the department of cognitive science at IIT Kanpur. This is week 5, we are trying to understand social outgroups and our emotions towards them and in this lecture I will continue talking a little bit more about the concept of dehumanized perception. Now so far we have seen that the medial prefrontal cortex is a very critical area for perceiving humanity and also mentalizing about these other social targets. Interestingly we saw in the previous lecture that the medial prefrontal cortex does not show any activity for the targets of disgust, targets of extreme prejudice and those targets that we are referring to as the dehumanized targets you know.

The screenshot displays the Chitrallekha video annotation interface. The browser address bar shows the URL chitrallekha.ai4bharat.org/#/task/65812/transcript. The interface includes a header with the Chitrallekha logo, navigation tabs for 'Organizations' and 'Tasks', and a user profile for 'Irfan Ahma'. The main content area is titled 'Lecture 22' and features a video player on the left and a transcript on the right. The transcript contains the following text segments with their corresponding timestamps:

- 00 : 00 : 13 . 835 - 00 : 00 : 18 . 116: Hello and welcome to the course social behavior and the brain, an introduction to social neuroscience. (Annotation 16)
- 00 : 00 : 18 . 196 - 00 : 00 : 22 . 197: I am Dr. Ark Verma, an associate professor in the department of cognitive science at IIT Kanpur. (Annotation 17)
- 00 : 00 : 22 . 837 - 00 : 00 : 33 . 360: This is week 5, we are trying to understand social outgroups and our emotions towards them and in this lecture I will continue talking a little bit more about the concept of dehumanized perception. (Annotation 34)
- 00 : 00 : 35 . 340 - 00 : 00 : 45 . 288: Now so far we have seen that the medial prefrontal cortex is a very critical area for perceiving humanity and also mentalizing about these other social targets. (Annotation 27)
- 00 : 00 : 45 . 969: Interestingly we saw in the previous lecture that the medial prefrontal cortex does not (Annotation 40)

People who fall on the lowest end of both warmth and competence in the stereotype content model given by Fiske. The medial prefrontal cortex let us try and understand what this cortex is and how it is related. So, the medial prefrontal cortex is a large strip of frontal cortex anterior to the cingulate which functions as a socially tuned area of a

reward network that indexes the process of mentalizing and social cognition. Now, you have to also understand here that when we are talking about particular areas of the brain, we should understand that these areas are not exclusively doing a particular job.

It is not as modular for example, as Jerry Fodor would have thought. The idea is that these areas are doing a bunch of overlapping jobs. So, for example, these areas are involved in the process of mentalizing or theory of mind and they are also you know very pertinent in the social cognition components. For example, understanding somebody else's emotions, empathizing with them. And to the extent that you know these activities are also intrinsically rewarding for example, when you get to know a person it is intrinsically rewarding for us.

If you can guess what a person is feeling see we have evolved a social creatures remember Dunbar social brain hypothesis he said that the human brain might have evolved to or you know to meet the demands of living in a society. So, in that sense these areas at specially the areas in the frontal cortex are specially tuned to performing the tasks that come within the ambit of social cognition coming back. So, this particular area is you know tuned to a certain reward network that also gets activated or also is implicated in the process of mentalizing and various other tasks which come under the ambit of social cognition. Now social neuroscience studies have reliably found that the medial prefrontal cortex activity happens when participants are thinking about social stimuli. For example, this in inside you know this coincides with people being intrinsically rewarding if you if you get as I was saying moments ago if you get a person.

It is intrinsically rewarding, you have figured that person out to a certain extent, you have understood or established a connection with that person and it is there in where medial prefrontal cortex activity comes to the fore or is involved in this whole process of estimation. Now this medial prefrontal cortex is divided into three functionally and connectively distinct regions. So, there are three parts, three layers in this region. First is the back part of this, so the posterior medial prefrontal cortex, then there is the you know the anterior part, the anterior medial prefrontal cortex and then there is the orbital which is the middle medial prefrontal cortex. So, these are the three layers.

Now, again just a little bit more about their anatomy, you can look up their figures online. The posterior medial frontal cortex and the anterior medial frontal cortex basically share a Talairach boundary of y is equals to 10. Remember the Talairach coordinates are in addition to the Brodmann's coordinates, they are more recent. Initially we used to learn the brain areas by Brodmann's area, Brodmann area 32, 33, 44 and so on, but the more recent way is the Talairach anatomy of these areas. So, the PMFC and the AMFC basically share the Talairach boundary of Y is equals to 10, whereas the AMFC and the OMFC actually share the Talairach boundary of Z equals to 2.

Again you do not really need to remember this just look up the figure and you will find that oh this is what I was talking about. Another important region here is the pregenual cingulate which is a unique region within the medial prefrontal cortex which is subsumed as a part of the medial frontal cortex, but it is slightly distinguished from the superior and anterior parts of this region again just anatomic details. It has been found however, that the majority of the mentalizing and social cognition task actually implicate the anterior medial frontal cortex which includes the pregenual cingulate as well. So, this region does some contribute to the idea of social cognition and to the task that are you know coming under this concept of mentalizing. Moving on the medial prefrontal cortex along with the superior temporal sulcus.

So, activates in mentalizing task including dispositional attribution, what is dispositional attribution when you are trying to understand somebody a lot of times you also give a judgment like oh I understand that he is a patient individual or he is a you know very impatient or a very effervescent individual you will say oh he is a honest person, he is a dishonest person, he is a rude guy, he is arrogant all of these dispositional attributions that we make are basically made through the combination of the medial prefrontal cortex and the superior temporal sulcus. So, again you see that these areas come together to contribute towards judging different aspects of you know the social stimuli that we are talking about. Also, social neuroscience research has found the stuff that we have been discussing so far that these areas are also involved in face perception, person perception and impression formation. You know the first interaction, the first evaluation that we make of individuals, the impression that we make and we carry for actually you know a larger amount of time. Now, this greater medial prefrontal cortex activation appears in both.

It basically appears in social cognition more, but it also appears in some aspects of non-social cognition or more basic stuff as well. For example, social cognition tasks wherein participants need to form an impression of a person versus when they need to form an impression of an object. or reactions that involve degree of familiarity and interpersonal affect, thinking about the self for example that is also very important social cognitive phenomenon, personal versus impersonal moral judgment. So, if I were to do this, if I were to press this liver how will I do it versus if I have to just indicate to somebody else who is going to press the liver. Thinking about you know other games, you know strategy games, trust games or second guessing what the other person is doing, say for example if you are playing chess or if you are playing you know there are lot of these board games nowadays available where you are sort of second guessing how the other player is going to perform, whether they are going to you know partner with you or they are going to cheat you things like that all right.

And also more importantly mentally navigating the social versus the physical world. Remember in the beginning of this course we have talked you know in great detail about

social cognition versus non social cognition. the social world wherein there are these actors and agents and they have intentions and they have they are judging you, you are judging them whereas the non-social world where we are basically thinking of everything as rather isolated or insulated from these you know intentions and feelings and emotions and so on. So navigating this social world really you know takes help from this medial prefrontal cortex region. So, all of these activities that I just described are basically coming under the purview of this medial prefrontal cortex and we saw that there are three regions that are involved in this medial prefrontal cortex and we also saw that there is this pregenual cingulate which is also part of this network the superior temporal sulcus is also part of this network.

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Lecture 22

Organizations Tasks

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00 : 08 : 34 . 411 So, all of these different activities span a variety of areas and all of these studies basically required thinking about the minds of other individuals. 25

00 : 08 : 35 . 558

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00 : 08 : 46 . 387 Putting together from a range of studies the evidence basically suggest or it converges on the fact that the prefrontal cortex is there absolutely necessary for thinking about people and the associated mentalizing processes, empathizing with them, judging them 39

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00 : 09 : 03 . 079 you know being warm towards them, being mean towards them, judging their dispositional attribute, judging whether they are going to be successful or not, whether they say for example if you are trying to hire an employee or say for example recruit somebody in your cricket team you need to basically look at them and make a sense of oh this guy will be a good player or this guy will achieve so and so for my company. All of these things basically come from the help of this region that is called the medial prefrontal cortex. 78

00 : 09 : 24 . 764

00 : 09 : 25 . 225 All of these things basically come from the help of this region that is called the medial prefrontal cortex. 19

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So, all of these different activities span a variety of areas and all of these studies basically required thinking about the minds of other individuals. Putting together from a range of studies the evidence basically suggest or it converges on the fact that the prefrontal cortex is there absolutely necessary for thinking about people and the associated mentalizing processes, empathizing with them, judging them you know being warm towards them, being mean towards them, judging their dispositional attribute, judging whether they are going to be successful or not, whether they say for example if you are trying to hire an employee or say for example recruit somebody in your cricket team you need to basically look at them and make a sense of oh this guy will be a good player or this guy will achieve so and so for my company. All of these things basically come from the help of this region that is called the medial prefrontal cortex. now let's move on from the neural data let's let's look at some other kinds of dimensions that also inform us about

dehumanized perception experimental social psychological evidence shows that people you know do not really think about the mental state of dehumanized targets they are not really you know engaging with that they are not making any effort to empathize with them for them these people almost do not exist you also saw that they do not activate the medial prefrontal cortex whereas the other three categories as per the you know SCM model actually moderate MPFC activity So, and they basically say that there are other dimensions that need to be considered as well. For example, in a study in participants which had a between subjects design the participants were shown a picture of a social target from one of the four quadrants of this SCM space they were required just to imagine just to describe a day in the life of this person.

Alright and then basically also rate this social target on a number of dimensions for example ease of mentalizing how easy was it for me to think about this person for example if you are you know I show you a picture of your classmate ok will it not be very easy to imagine and based on your knowledge of the person and your knowledge about their routine and their background and what they want to do their aspirations etc etc it will be easy for you to mentalize about this individual On the other hand, if I put you know you in a spot and I ask you to mentalize let us say the life in the day of a faculty member for that matter. Now, these are two different worlds, you know a little bit about let us say the life of the faculty member, but you do not know their entire life, you do not know them personally, you do not know them professionally, you know only a part that directly concerns you, you do not know let us say the other professional obligations that the faculty may have. So, ease of mentalizing them, ease of inferring their dispositions, how easy it is for you to basically guess oh whether this person is has this kind of a personality, whether this person is patient, kind, generous and so on or whether this person is rude, mean, arrogant and so on. Now, again it is easy for you to make sense of you know in this case both student and faculty because on the basis of how much you get to interact with them, but if this is a faculty from a different institute or from a different country you have no idea how they operate and it becomes that much more difficult for you to infer their dispositional attributes their tendencies. Again the researchers observed performed a 3:1 contrast comparing the dehumanized targets with the other 3 categories.

And they found that participants actually used fewer verbs that required an inference of a mental state to describe the dehumanized targets it is it is very interesting. So, for example, they do not really talk about for example, things like when I say oh the person was satisfied after they had food all right, then basically I am I am still inferring oh how that person felt in response to having food. on the other hand if I just say the person you know finish their food in time now that does not tell me anything about how they might be feeling and you can see here this very subtle difference actually tells you whether I am inclined to engage in inferring about this person's mental life or I am just maintaining a very you know basic distance. For example, a lot of people would do charity like that you

know they will go and they will donate and they will just get away. They will not even worry about whether the person who have who they have donated to actually felt happy or held or you know obliged towards this gift, whether they really appreciated it or not, whether it made any difference in their life or not.

So, these kind of things you know are very interesting markers of how much importance we are giving to these other people from these different kinds of social groups. Also interestingly the participants rated the dehumanized you know targets as more difficult to mentalize. So, people who they had dehumanized for example, if you were to ask a white American in the as to how a particular you know member of the black race would feel based on for example, being sold in a slave in a slave bazaar. they will find it very difficult to think they will say oh they probably are will be happy they they deserve it and we are doing them a favor by you know selling them to owner who will provide them with food this that who will civilize them. For example, the imperialists always used to say oh we are here to civilize the tribals and the indigenous people and so on.

So, you can see here very interestingly that people you know find it very difficult to mentalize about the dehumanized targets ok. And again if you sort of step back put everything together what does it illustrate it basically tells you that dehumanized perception has very specific neural and cognitive characteristics You are not inclined to think about the life of these individuals. More importantly, your neural faculty, the medial peripheral cortex is not getting engaged unless you are explicitly asked to think about these individuals. Remember, you have to also make the connection between the previous lecture and this current one. Now, here there was this social psychological evidence about dehumanization let us look at something more.

There have been obviously theories about dehumanization and one of the theories for example, comes from you know the very preeminent social psychologist called Gordon Allport and Gordon Allport basically describes dehumanization as the extreme and worst type of prejudice. So, he basically says that because of this prejudice what happens is that people exclude this out group from the whole of humanity. They say oh these people do not belong to the human race because the thing is the human is also a type of an in group you know humans versus other species remember the movie planet of the apes and remember you know for example terminator and so on where the human species as such or say for example the independence day you know where the human species as such is either pitted against aliens or these apes who have become super intelligent or for example you know these androids who sort of trying to take control of the planet ok. According to Gordon Allport when we engage in dehumanized perception we are actually casting these people out of overall humanity and by doing that we are casting them out of from the ambit of our empathy from the ambit of our kindness our effort to know them understand them and care about them. So, this is and the basic idea as I just explained is

that this extreme prejudice would reduce the target to being less than human, sometimes as an animal just reduce them to animal like situation or just like an automaton.

Oh that person is just the role that he or she fulfills. For example, the black person in you know in the times of slavery was just an instrument to get work done maybe you know plough the farms to you know harvest the farms to clean the house to do the laundry this that just as an automaton where the person involved is not really thinking about them. Again very interesting movie you know reference would be if you watch 12 Years a Slave or if you watch Django Unchained by Quentin Tarantino. Now theories in social psychology also highlight the idea of perceiving some outgroups as less than people ok. For example Bar-Tal theorizes that groups that act outside the societal norms would be excluded from others human groups.

So again there are these different human groups also possible you know people from different religions, you can bring any number of classifications here, but they these people who you are treating as you know for example, the Jews as that they are not even human, they deserve their fate, they do not deserve any empathy, kindness and so on, they almost do not exist as actual people deserving of any warmth, any you know empathy and so on. Similarly, Struch and Schwartz argued that all out groups allegedly possess a slightly lesser degree of humanity than the in group. Now, remember this is also you know part of my research area where we talk about how an in group treats an out group and this in group out group difference is very interesting because So, there is an inherent there is a constituent fundamental bias against the out group and towards favoring the in group. This is something that is almost evolutionarily there and everybody engages in that and the basis of this in group could be anything you know men feel kindly you know kinder towards all men there will always be this you know victim card that you know men will play oh you know we do so much and we are underappreciated in this and that and the women will say oh you know we are discriminated against prejudice and we do not have this all freedom and so on. it can be either a gender kind of a divide, it can be you know a divide based on maybe caste, maybe religion, maybe race, maybe underdeveloped country and you know developed country, any kind of you know classification you can draw and you will see a very interesting thing is in group and members of in group are considered more human, more deserving of empathy and care and so and so.

But all the members of that any out group for that matter are considered slightly yes less human, slightly lesser than let us say even the weakest member of my in group ok. So, this is a very interesting sort of finding. Staub for example speaks that the dehumanized groups also experience what is called moral exclusion you know the idea that some social groups basically operate beyond moral rules and values moral obligations if you are mistreating a member of an out group if you have dehumanized them to an extent that you are not even considering your own you know actions towards them you are not

considering that oh I am not being fair and just and I am being super cruel to these individuals you are basically rationalizing it to yourself by saying oh you know these people deserve so and so and they do not come within my regular ambit of or within the regular ambit of my moral compass and again this is something that a lot of research has talked about. If you look at all of these theories starting from Allport's theory or Staub's theory or Struch and Schwartz theory any of these three four theories that I very briefly mentioned all of these theories share the point that people may think of outgroups in a significantly different way than they think of in groups and that they think of themselves. So, the in group out group divide is a rather fundamental divide and it is not really merely a cognitive divide it is almost also a neural divide you know the brain treats them differently, we treat them differently and in that sense you know we classify them on this SCM model or maybe any other model for that matter and the way we react to them or the way we sort of interact with them is broadly governed by these kind of considerations.

A very important point sort of to look at you know in this perspective is or with reference to dehumanized perception is that sometimes you know people have also come up with you know concepts of things like infra humanization. What is infra humanization? Infra humanization basically the theory proposes that the outgroups are believed not to experience and are thus not attributed with complex human emotions. You will say oh these people are not intelligent enough, sentient enough to process that. Very interesting you look at this. So, the participants in such studies are actually willing to attribute basic negative and positive emotions, but not complicated emotions.

For example, you will believe that oh this these people cannot decide for themselves because they do not have the wisdom, they do not have the intellect to actually understand and reason with and work with complex mental phenomena. It is very interesting basically say oh they can feel some hurt, they can feel some happiness, but they do not know what is good for them. What we are doing you know the Nazis thought or the white Americans thought that they are civilizing providing a better life or you know providing what they deserve to the blacks or the Jews you know in whichever condition. So, it is it is very interesting for example even say for example somebody who is a friend versus somebody who is an enemy people are more willing to attribute both you know positive and negative and complex and simple emotions to the friend, but they are not willing to attribute a complex emotion to the enemy. People say oh he might be feeling you know sad on what is going to happen towards him, but not really regretful it is not possible that the enemy feels regretful and apologize to me and then I forget forgive them.

They will feel sad, but they will not feel regretful and therefore, we are entitled to treat them in a particular way. Also this idea of dehumanization has been divided along the dimension of typical humanity and unique humanity. This is also very interesting

theoretical point put forward by Haslam in 2006, he says oh there are things that come under typical humanity and there are other things that come under a unique humanity. What is typical humanity? It basically aspects of being human that are fundamental to very broad definitions of humanity you know such as complex emotions. oh I can feel in this way, I can have this objective experience, I have this fear of god, I have so many of these attributes.

The screenshot shows a web browser window with the URL `chitrakleha.ai4bharat.org/#/task/65812/transcript`. The interface is for 'Chitrakleha', powered by the 'EkStep Foundation'. It features a video player on the left labeled 'Lecture 22' and a transcript on the right. The transcript is a list of text segments with timestamps and a green score indicator on the right. The segments are as follows:

| Timestamp | Text Segment | Score |
|--------------------|--|-------|
| 00 : 24 : 29 - 593 | characteristics to different degrees. they are denied typical humanity characteristics | 91 |
| 00 : 25 : 01 - 073 | Now, again we discussed a bunch of theories about dehumanization there is also rating data for example, a bunch of these studies that we have discussed also tell us also | |
| 00 : 25 : 01 - 493 | inform us. that we can talk about dehumanization in terms of one in terms of rating | |
| 00 : 25 : 05 - 054 | whether they have typical humanity, whether they have uniquely human characteristics or not. | 13 |
| 00 : 25 : 05 - 554 | And what they found was that participants rated the dehumanized targets who elicit the basic emotion of disgust as being lower on uniquely human characteristics, oh these are | 39 |
| 00 : 25 : 20 - 397 | not intelligent people. these people who cannot sneak for themselves. ok | |
| 00 : 25 : 20 - 757 | And hence they were treated automatically classified as being less typically human, alright. | 13 |
| 00 : 25 : 26 - 778 | | |

The video player on the left shows a thumbnail for 'Lecture 22' and a progress bar. The transcript on the right is a list of text segments with timestamps and a green score indicator on the right.

But what is considered uniquely human which differentiates human from other species is for example, language is the high intelligence that we possess those kind of things. So, it is very interesting that people have found out that the dehumanized targets the members of the dehumanized social groups are actually they are denied the characteristics to different degrees, they are denied typical humanity characteristics also, unique humanity characteristics also, but more often than not they are denied you know the unique humanity characteristics and they are treated such that they were just automata, they were just you know agents who are performing their mechanical functions and they do not need to be considered by the in group. Now, again we discussed a bunch of theories about dehumanization there is also rating data for example, a bunch of these studies that we have discussed also tell us also inform us that we can talk about dehumanization in terms of one in terms of rating variables as well for example in a study that was you know designed around measuring of mentalization or mentalizing participants were required to rate the social targets on various dimensions for example whether they have complex emotions whether they experience complex emotions or not whether they have typical humanity, whether they have uniquely human characteristics or not. And what they found

was that participants rated the dehumanized targets who elicit the basic emotion of disgust as being lower on uniquely human characteristics, oh these are not intelligent people, these people who cannot speak for themselves, ok. And hence they were treated automatically classified as being less typically human, alright.

So, this basically suggest that the humanized targets are certainly denied aspects of unique and both you know both unique and typical humanity. Also social targets who elicit envy for that matter remember the SCM space who elicits envy people who are high on competence and low on warmth ok. So, social targets who elicit envy are sometimes perceived also as not fully human oh this person has achieved so much success probably by few. Probably you know God is with the person probably he is so superhuman that he goes away from my ambit of empathy I will not be able to and when these people fall when say for example super successful people fall you will see a lot of people become happy a lot of people don't feel sad for them falling because in their minds they have already the overriding feeling is of envy and in their minds they have sort of you know dehumanize these people to that particular extent. It was observed that another interesting thing that parents rated the social targets who elicited participants sorry rated the social targets who elicited envy as lower on complex emotions, lower on typical humanity, but interestingly higher on uniquely human dimensions.

So, intelligence and articulation which is not really surprising it is rather intuitive because these are people who are rated high on competence. They are rated high on competence by virtue of being capable. So, that obviously you cannot deny. What you can deny is oh he is so successful, but he does not understand basic human emotions. Oh he is so successful, he does not have empathy for others.

Oh he is so successful, he is so arrogant and rude and so on and so forth. So, these kind of finding this you know the pattern of the study also suggest that these social targets are also interestingly not perceived as typically human to the same extent as other social targets. You know they may be seen as automate oh it is so successful, it turns up every day and achieves great things. You will not be inclined to have a human touch human relation with that kind of a person. So, interestingly while these targets elicit envy, envy also is an ambivalent emotion that in way that basically entails respect, but it also entails disliking ok.

So, here you can understand that there is there is a very interesting of complex interplay happening ok. Now, these targets are also sometimes contrasted with dehumanized targets who are rated both on you know typical and unique humanity. Now, in this case what is happening is in the dehumanized targets there is a more dramatic denial of humanity and that is basically an outcome of extreme form of prejudice ok. And these and these are basically rating studies. So, people are judging looking at these pictures and judging them and all of these ratings are you know happening let us say on a Likert scale

on 1 to 11 where 1 is most human and 11 is least human or you flip it you make it around ok.

So, participants do realize for example, that they you know they do realize that homeless people are human, but they respond to them as if they are not they are they are least concerned they are they are basically lying on a very you know on the low low continuum of both warmth and competence. So, hence they are dehumanized, hence you basically desensitize yourself from feeling sad about them because again remember that is cognitively taxing if you are constantly feeling sad about these individuals. it will you know be a constant hassle in your head and if you are not in a position to do something about them it becomes difficult. Now, how do we so far we have been talking about dehumanization, can we do something about it, can dehumanization be reduced, moderated, what you know can can is the is it is it a lost case or something can you know eventually be done. Now, people have said for example, even Allport has said that one of the things that you know can moderate dehumanize targets is this degree of contact is the pointing out of what are the commonalities let us say are there similarities or if people start getting familiar with them.

If you are getting familiar with the you know with the socially ostracized group then you will get to know more about them and it is possible that your internal inclinations previous inclinations towards them change a little bit ok. So, an important aspect of these kind of outgroups is the degree of similarity or the degree of familiarity which has been shown to correlate with intergroup contact ok. The more contact you will have you will have more you will discover more similarities and you will also discover more familiarity. For example, you can take to social groups may be people from different cast may be people from different religions and then you start analyzing I am from religion A you are from religion B what is the food that you typically eat throughout the day oh you also eat you know rice and lentils and vegetables in the afternoon I also do that oh in your family also when marriages happen these are the customs that happen or when festivals come these are the customs that happen and then you start discovering you know similarities and the prejudice sort of you know gets lowered down and this is happening through contact and the degree of dehumanization you can see is starts changing and starts getting reduced. So, since dehumanized perception appears to be a form of prejudice and as contact has been shown to be a moderator of prejudice, people have made this connection that if there is contact prejudice will be reduced and dehumanization will also be consequently minimized, ok.

This is basically what we are saying here. So, the critical hypothesis is the contact hypothesis offered by Islam and Hewstone and it says that low familiarity and similarity may distinguish you know put separately the dehumanized targets. And this is also something that comes through neural literature which suggests that similarity and and familiarity also are capable of moderating the medial prefrontal cortex function.

Remember if the medial prefrontal cortex is engaged, it is active, it tells you that you have not yet dehumanized that particular kind of target. Again remember I am not speaking in terms of people volitionally doing this, I am basically just taking examples here. Now, what is familiarity? Familiarity basically gives rise to positive emotional feelings if you know something.

For example, might have met somebody very cursorily in a market or in some meeting and so on and later you learn the news that that person has achieved a great award or is being celebrated by people and so on, has had a great you know opening or become a big star, you basically have positive feeling towards them. Similarly, say for example, if you own particular objects let us say there are two pens on the table one is the pen that you have used in the past maybe it is not your own pen also, but you have used the similar brand the same model of pen when you were in school versus now when you are in college and you will have that degree of liking towards it. So, familiarity typically gives rise to positive emotional feelings and you know about individuals that are familiar and this kind of exposure basically you know either consciously or unconsciously enhances the probability of these objects both you know living and nonliving of being liked by us ok. So, by virtue of familiarity the more familiar the most familiar thing is the self people are known to prefer. And, similarly people are known to prefer letters associated with their initials.

So, for example, my initials are AV in any brand or in any place if I see a logo that has AV I will automatically have a very base tendency of liking that product preferring that product or let us say another product that does not have my initials. Very very simple, isn't it? So, positive effect related to the self is generated when an attitude object is deemed familiar such as self-owned objects, people who are known to us, people who we have we know anything about. For example, it is not necessary that we might have met with those people, but at least we know about this category of people and by virtue of you know familiarity again not in the negative sense we are more inclined to like these people. Also, familiarity has also been shown to breed liking in neural data as well. For example, few imaging studies of familiarity and positive social effect actually demonstrate that the medial prefrontal cortex activity gets moderated by varying degrees of familiarity.

For example, the greater medial prefrontal cortex activity is observed when mothers look at the faces of their own child as compared to when they are looking at the faces of other children. Now, again this will be anyways there this is a default evolutionary feeling, but also mothers activations are found to be higher in the medial prefrontal cortex when they are looking at familiar as opposed to unfamiliar children. People you know for example, oh this child studies in my son's classroom or my daughter's class something like that. Interestingly, if participants were given an immediate reward for performance, they also exhibit an increased medial prefrontal cortex activity, which is also a similar source of

positive emotion, positive effect. Now, so what do we see from these basic results that familiarity and positive effect familiarity and the consequent positive effect that it generates also sort of you know can come through social contact and social experience and eventually can be used to moderate disgust, moderate prejudice and eventually moderate dehumanization.

The other variable we can talk about is similarity. Existing research in experimental social psychology has shown that similarity for example, self-other biases, self-evidential effect, self-esteem, in-group biases all of those things basically illustrate that the self typically serves as a positive attitude object. and everything that is in some way or the other like this or similar to this positive attribute object will be liked by us, will be preferred by us. So, anybody who has a similar name than me or anybody who wear similar clothes than me, they will probably speaks the same language, you know probably practice the same profession, will have a degree of liking from my side, just that is how in group biases form and that is how they work. Now, things that are similar to the self or are associated with it typically become associated with positive feelings, positive effect and this basically also spreads to other objects as well. For example, objects already inherit additional value if they are owned by the self as opposed to when they are not.

For example, there are two pen here and if somebody is going to throw these pen, it will hurt me more if the pen that is being selected is my pen, I will be attached to it to a certain degree. Neurally, a number of studies have demonstrated the MPFC activation in tasks where participants reflect on themselves about their qualities, access self-knowledge or compare and figure out the similarities between themselves and this other person. overall if you look at this self reflection can also be a tool that allows one to infer the mental states of others. We have talked about this in the beginning lectures and it also does engage the medial prefrontal cortex along with the posterior cingulate and the precuneus. Now, the thing is if you find others if you are looking for similarity between yourself and other individuals even let us say that dehumanized target groups you will start discovering positive effect the negative feeling of disgust will probably get diminished and in that sense you will sort of be successful in you know taking away the the dehumanization of such people all right.

So, dehumanized targets are rated significantly less familiar and less similar us and our in in group and these in group social targets who also who elicit pride and activate the MPFC are rated as more familiar and more similar to others. So, you have results on both continuum and both of these targets engage the largest medial prefrontal cortex activity not the dehumanized, but these people who elicit pride and who elicit you know envy. So, typically we can accept that familiarity is something that you know moderates dehumanized perception. Similarly, there are results that will tell us that similarity also moderates dehumanized perception. For example, dehumanized targets are typically rated as less similar to us.

In contrast, social targets that elicit the in-group emotion like pride are rated as more similar to us. So, you can see the similarity seems to be a moderating factor between these two things. So, similarity obviously also and it also moderates the medial peripheral cortex activity. So, if you put both of these findings together this you know familiarity and similarity it tells us that participants are less likely to interact with dehumanized targets because they are not familiar with them in the first place and also they do not find any common strands any commonalities which basically could have been used to mitigate the prejudice to mitigate the feelings of disgust and so on. So, this is you know basically an overview of all of this literature on dehumanized perception and it basically suggests us that these are some of the things that can be used to moderate the degree of dehumanized perception.

Ok and here is where you can sort of close this down and basically find out why contact is important. See if you are not in contact with these members this lack of contact deprives one of any opportunity to even know the other person. ok how will you discover similarity unless you know them if you don't know them you are not familiar with them you have all these other stories that you will hear in propaganda and here and here and there and in that sense it will breed hatred prejudice and dehumanization So, lack of contact deprives the people of any opportunity to know this other person, to know their preferences, their habits, their thoughts, their aspirations, their flaws, their strengths and their mental states that basically are considered very important as part of perceived humanity. And in that sense contact is something that is a very very important variable that we should consider when we are talking about dehumanized groups. The more the contact there is the less probability of we considering of us considering any group as a dehumanized group that is basically what last sort of message from this particular lecture alright. Thank you.