Social Networks
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Lecture – 63
Homophily (Continued) & Positive and Negative Relationships
Structural Balance

So, let me motivate you with a very personal example and then let me talk about an abstract example a personal example.
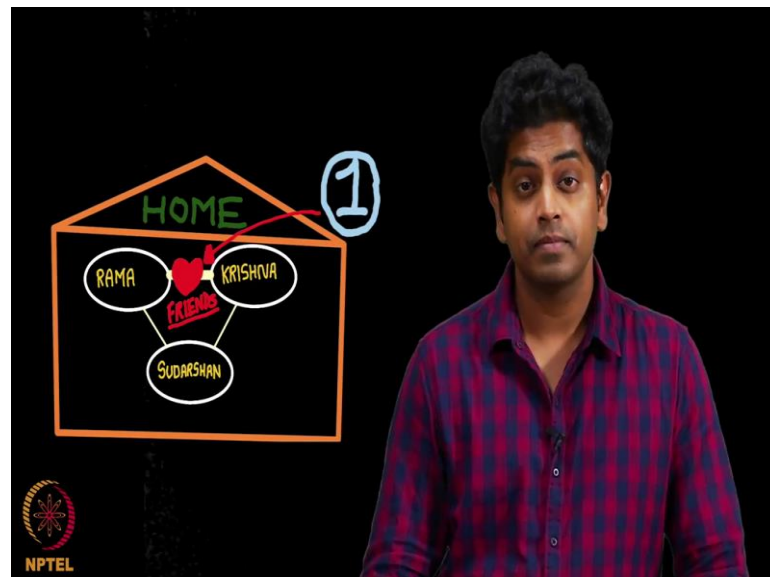
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I used to spend my vacations with my uncle and aunt a very loving couple very nice to hang around with them, but occasionally they used to sort of have some disagreement and they would they would fight for a minute or 2 and that is when I would be in a fix for a simple reason that uncle and aunt would start controlling me. Uncle would say come Sudarshan, let us go to the beach; aunt would say no, no, no, no, come let us go shopping, I get you something to eat uncle would say no, no, no, if you going with your aunt and I am not going talk to you; aunt would say the same; if you are going with your uncle I am not going talk to you.

So, I am in a fix here, look I cannot go with only one person here, there will be hatred from the other person; what do I do I cannot go with both of them, I cannot go with one of them. The best thing here is to say call it quits I am not going with anyone, I am

neither going with uncle nor with aunt this is to be on the safer side right. We all of us would have encountered such a situation in our life you love 2 people equally and they ask you to take a call love me or love the other person you cannot love both. So, it is so happened that I would take the excuse of I have homework and I would say start scribbling something and things would come to a standstill and then they would become normal.

This is my personal example let me try using abstract example to explain the same thing and I just use personal example. So, it people can relate to it and abstract example.

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Let me consider this friend Ram and Krishna, Rama and Krishna; these 2 people are very close to me let us say very good friends best friends, but unfortunately, they do not like each other. Here is the similar problem I told you of the uncle and aunt example I cannot invite Rama and Krishna home for a party for a simple reason that in case they come for the party they would not talk to each other.

Party is done to distress yourself if you have 2 such people in our party it will add to your stress. So, what will happen? Think about it for a second Rama and Krishna come home they sit together they do not talk to each other; they do not want me to talk to one-person other person gets offended what will I do. There are 2 consequences of such a thing, in my life if I want to continue being friends with these 2 people I must take a decision one by hook or crook make them become friends that is a nice decision if it can

work. But generally does not work 2 people who hate each other now we would want to continue hating each other what do I do? I will try my best to make Rama and Krishna become friends with each other I will convince them take them out with them I will play football with them party with them no, it may not work if it works well and good if it does not I am in a fix.

Why I am in a fix it is because Rama will say Sudarshan enough is enough stop being friends with Krishna otherwise I will stop being friends with you Krishna will tell me the same thing. So, what is happening here think for a minute let me draw a picture and then observe what is happening here?

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Here is me and I have I am friends with Rama I am friends with Krishna Rama and Krishna hate each other now this kind of a triangle with 2 lines and one dotted line dotted line representing hatred and straight line representing friendship is a dangerous combination. This will not continue to be stay this way for a long time eventually either this dotted line should become a straight line you say what I am saying either Rama and Krishna should become friends because of Sudarshan's involvement or whatever or Sudarshan should start hating one of them.

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In case Sudarshan starts hating Krishna the triangle will look like this Sudarshan likes Rama, Rama likes Sudarshan of course, and Rama of course, hates Krishna as and always Sudarshan has started hating Krishna this is a stable situation. The previous one was actually an unstable situation unstable simply because there is pressure for the structure friendship structure to change now this was with 3 people imagine there are thirty people in a organization is a lot of hatred lot of friendship what will happen.

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This entire chapter is about studying this and studying this and inferring some really cool results lets gets started with more results right now I will now make an attempt to enumerate all possible cases what do I mean by all possible cases.

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You see there are 3 people A B and C between A B and C; what all are possible 3 friendships are possible as you can see case 1.

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Case 2; 2 friendships and 1 hatred, this is case 2 what is the next case as you can guess 2 hatred one friendship.

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The third the fourth case is all 3 hatreds, right, let us take this one at a time and then observe what are the consequences of these cases what are the cases that are stable what are the cases that are unstable. I hope you are following what I mean by stable and unstable by stable I mean this kind of a friendship does not have any dangers.
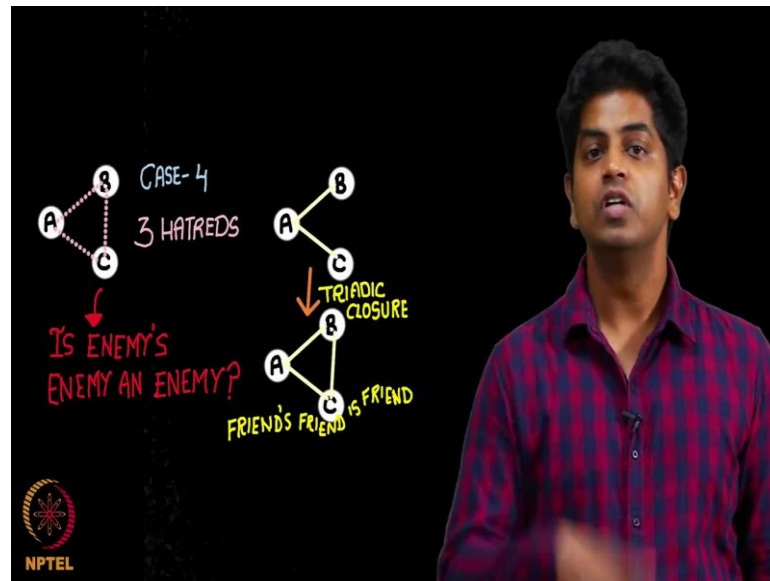
For example 3 friendships I am there is no problem there at all versus the case that I told you awhile before Rama Krishna case what you can see here 2 friendships one hatred. Now that is dangerous it is unstable eventually something we will happen to this kind of a triangle right either it should become a complete 3 friendships or 2 hatred one friendship as discussed earlier what I will do right now is I will go slowly with all these cases and see what case has what consequence. So, first case 3 friendships a happy with need I same over 3 people who are friends with each other I mean there you have a wonderful life.

There is absolutely no hatred between anyone period there is just nothing to study here at least in this chapter 3 friendships is stable there is no pressure it similar to my Rama Krishna that is a tough life here is a happy life.

Now, what if there is 3 hatreds A B and C, there 3 people hate each other by the way let me ask you a question remember triadic closure friends friend is a friend do you think and enemies enemy is an enemy think about it a friends friend is a friend the same rule applies here it is. In fact, true that an enemies enemy is actually an enemy think about it I am right is I just because of professor says something then he will be right pause for a second analyze the situation and tell me is it really true that enemies enemy is an enemy if you are not clear just watch this video clip and come back and I am sure you will understand what is wrong with this statement enemies enemy is an enemy.