

Hello my name is Alex Pentland, I'm a professor at MIT where I direct the connection science program and I want to talk to you today about diversity. We talk a lot about diversity but we don't often know exactly what it is or why we want it.

What I want to suggest is that diversity is the root of collective intelligence; it's key to making smarter decisions. And, that sounds sort of esoteric and perhaps complicated but it can be quite simple. So, for instance, often cities take samples as to crowdsource opinions from people - they have 3-1-1 lines or other sorts of ways of getting people's opinions - and what they typically do is they count the number of people that have one judgement versus another or one opinion versus another.

But, what that leads to are the sort of echo chambers that we see in social media, and it can be distorted in various ways. Often a much better way to do it is to take each neighborhood and ask, "is the answer to a question one of the top concerns in most of the neighborhoods, regardless of the number of people asked - so as a percentage of each neighborhood to say 80% of the neighborhood's put this in the top three of their responses in terms of percentage. That way, you get rid of one neighborhood that has five times as many responses as other neighborhoods and experience has shown that that leads often to much better sorts of results - much wiser decisions and certainly more inclusive decisions than simply counting.

Boston and their pothole report program was an example of that. Boston and their nice pothole report program, they've got lots and lots of potholes [reported], but they were all in the rich neighborhoods where people have smartphones and could report it immediately. You need to sort of normal out or average out the number of people from each neighborhood and then ask, "is this a shared concern, is this collective concern" to be able to make better decisions.

This also comes up in other ways. For instance what we've found across many many cities is that if you look at the transportation for people into and out of neighborhoods neighborhoods that have lots of people coming in from lots of different places - not the number the number of different places that they come from - is an indication of whether this neighborhood is healthy or not healthy. The neighborhoods that have very diverse visitors - from work for shopping for other certain purposes - are neighborhoods that are typically happy and growing. Neighborhoods where that collapses - and [those neighborhoods that were] it was diverse and now [they're] much less diverse or neighborhoods that are undergoing some sort of acute stress and often it indicates that they will in the future have problems with crime and health and other things. And of course, neighborhoods that are always sort of isolated from everywhere else so very few neighborhoods and they never do very well at all. So this is something you probably have in your repertoire already - transportation records over but you may not have looked at it is neighborhood to neighborhood transportation data.

You can also turn that around and say, "well gee here's a neighborhood - where do these people shop? Where do these people work?" And you can look at for each neighborhood did they go out into the rest of the city, into a diverse number of places. What we find is that that predicts things like employment. If you don't see a diverse number of people diverse number, a

diverse number of destinations rather, then you're likely to have persistent long-term unemployment. Obviously poor neighborhoods tend to be exactly those neighborhoods.

So this is a way of promoting equity through measuring diversity both into the neighborhood and out of the neighborhood, and if you want a good example of this taken to the extreme, take a look at the website inequality.media.mit.edu, where you can see these sorts of maps that we've done for Boston and for New York.

I think you'll be really surprised at this way of thinking about things. Thank You.