TEDxSanDiego2010 and Social Networks: An Informal Experiment

By James Fowler
University of California, San Diego

When we attended TEDxSanDiego on November 8, 2010, attendees were asked to name up to 5 people with whom they had “interesting conversations.” Chris Fariss, Robert Bond, and I then mapped these conversations in real time during the day so people could see where they fit into this new social network spawned by TEDx. Figure 1 shows what that map looked like by the end of the day.

The key shows the shapes used for males, females, and the social connections between them (in this case, resulting from an “interesting” conversation). It also shows the colors used to indicate the primary interest of each TEDx participant.

Figure 1. The TEDx San Diego Conversation Network.
Among the most interesting results from this experiment were:

1) TEDx promotes connections to people who are different
Most human social networks exhibit homophily. Homophily is a word that literally means “love of like” and it is used to describe the tendency to connect to other people who are similar to us (“birds of a feather flock together”). But in the TEDx conversation network there was no evidence of this phenomenon. Instead, people tended to connect to men as much as they connected to women, regardless of their own gender, and they also tended to connect to people with interests different from their own. This is evidence that the TEDx experience helps people to reach out to those who have different expertise and experiences, and it is a welcome antidote to the growing tendency online to associate only with people who resemble us.

2) TEDx promotes equal participation
In normal human social networks, most people have a small number of connections, but a very few have many more connections than the rest. These “superconnectors” are people who are very popular and/or who are much more socially active than the rest. At TEDxSanDiego, the average number of connections was about 4, and 96% of the participants had 10 or fewer connections. But the other 4% were not remarkably different – in fact, the person with the most connections had only 15 total. An analysis of the distribution of connections suggests that TEDx does not produce a network dominated by a small number of players. Instead it is very democratic, with more or less equal participation by everyone.

In addition to this experiment, we also tracked the network of 88 TEDx participants who volunteered to share their Twitter handles. Prior to TEDxSanDiego, 43 of the participants were already connected on Twitter, as shown here:

![Figure 2. The TEDxSanDiego Twitter Network (Before the Event)](image-url)
We then also mapped the conversation network for those who had given us their Twitter handles:

Figure 3. The TEDx San Diego Conversation Network (At the Event) Among Twitter Users

And then ten weeks later we mapped the new Twitter network to see how it might have changed as a result of the TEDxSanDiego event:

Figure 4. The TEDxSanDiego Twitter Network (After the Event)
Here are some observations about these three networks:

1) **TEDx promotes new connections**  
   Of the 75 “interesting” conversations at TEDx reported by the Twitter group (Figure 3), only 3 of them occurred between people who were already connected on Twitter before the event (Figure 2). This suggests that participants actively seek out conversations with people they do not already know. Moreover, there is no evidence of homophily, suggesting that like the group as a whole, the Twitter group also tended to have conversations with people who have different interests.

2) **TEDx gets new people involved**  
   The total number of TEDxSanDiego participants who were connected on Twitter to at least one other participant also grew from 47% before the event (Figure 2) to 57% after the event (Figure 4), a 10% increase. This means there are now a greater number of people who are involved in the network that TEDx helped to grow.

3) **TEDx doubles connectivity between participants**  
   The average TEDx San Diego participant had about 1.2 Twitter connections to other participants prior to the event (Figure 2). After the event (Figure 4), the average participant had twice that figure—about 2.4 connections per person. Not all of these resulted from the conversations reported in Figure 3 (6 of the new post-event Twitter connections also appear in the conversation network), but many of them are likely to have been spurred by unreported conversations since the growth rate far outstrips what would be expected from natural growth on Twitter.

4) **TEDx helps friends of friends connect**  
   An important feature of human social networks is transitivity, the probability that two of your friends are also friends with one another. Our networks are highly transitive in part because we tend to introduce our friends to each other. This kind of connection is good because it creates multiple paths to get information from you to other people in the network, and it also helps to reinforce behavior change (you are more likely to comply when two friends who are connected ask you to do something). The transitivity of the average participant on Twitter was about 6% prior to the event (Figure 2). In other words, if you follow person A and person B on Twitter, there would only be a 6% chance that A followed B or B followed A. Similarly, the transitivity of the average participant was about 10% at the event (Figure 3). But after the event (Figure 4), transitivity jumped to 22%! This is approaching the same value we see in real world (as opposed to online) social networks.

5) **TEDx increases reciprocity**  
   Another important feature of human social networks is reciprocity. If I think of you as a friend, you are much more likely to think of me as a friend, too. Reciprocity is also a sign of the strength of a relationship – if two people follow each other on Twitter, for example, they are much more likely to have a real world relationship than they would if only one of them followed the other. In the Twitter network before the event (Figure 2) only 16 relationships were reciprocal, but in the Twitter network after the event (Figure 4), that number more than doubled to 40.

Thus, overall the evidence suggests that TEDxSanDiego2010 had an enduring effect on the social networks of participants, both online and probably offline as well. It is also likely that other TEDx events have similar effects, but it would be interesting to see if we would get the same results when we repeat the experiment at another TEDx event (or perhaps at the main TED event).