

Acceptance speech

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People tend to look forward and not back: always seeking the next challenge. As Kasia Niewiadoma, a professional cyclist, once said, "Rarely do we congratulate ourselves for what we are already accomplishing in our lives." So, thank you to the BBVA Foundation for helping us pause to appreciate what we have achieved! We will be looking forward again shortly, as that is our destiny, but it is gratifying to be here and have our journeys recognized.

Humans are a social species, and how they organize themselves matters. Nonetheless, economics has traditionally ignored the fact that most economic interactions are - to borrow a term from my colleague Mark Granovetter - embedded in social settings. What I have had the pleasure of working on for the past three decades is the marriage of economic questions and techniques with the realization that the network patterns of interaction provide vital insights into human behaviors.

This research involves two perspectives. One is bringing network structures into the study of economics, while the other is bringing an economic approach to the study of networks.

The latter is where my interest in networks began. A fortuitous lunch conversation with Asher Wolinsky about how to model "power" led us to take a game theoretic approach to modeling how social and economic networks form. Many networks form via choices: we choose our friends, companies choose their partnerships, and countries choose their allies. Economics has honed tools for studying how people make choices and provides a strong foundation for modeling how networks form.

This economic perspective on network formation helps us understand why the networks that people form by self-organizing are often socially suboptimal. For instance, we can see why networks form that are excessively segregated. When people learn something new by branching out in their networks, they can pass that knowledge on to those around them. However, they tend not to pay attention to how expanding and enriching their own networks in turn helps

others. Thus, too few bridges are formed across social divides. The same insight about suboptimal network formation applies in many settings. For example, companies - particularly financial institutions - have incentives to under-diversify their networks and investments, as they do not bear the full consequences of the cascading impact that their failures can have.

The reverse perspective - using network structures to better understand economic behaviors - is equally important. A decade after my lunch with Asher, another lunch conversation with Toni Calvo-Armengol set us on a path exploring some of the many ways that social networks influence economic outcomes. We began by examining the economic consequences of the fact that jobs are usually obtained via social contacts - another important fact illuminated by Mark Granovetter. A person whose family and friends are unemployed ends up with poor job prospects themselves, and therefore has low incentives to become educated. These correlations and network spillover effects are empirically large. This perspective explains why inequality is so persistent, and why immobility and inequality go hand in hand. It also helps us see that redistribution of wealth and income only addresses the symptoms of inequality and not its root causes. It helps us see the need for policies that enrich people's networks and provide the information and opportunities that their networks fail to provide.

Once again, this phenomenon extends to many other settings. Whether poor people participate in beneficial loan programs can be predicted by looking at their positions in their social networks. If they are insufficiently central, they miss out on useful information about available opportunities. Similar reasoning applies at much larger scales: for example, a country's centrality in international trade networks predicts its alliances and its susceptibility to conflict.

Once you study networks, you see their impact everywhere, and thus the study of networks, both from an economic perspective and in terms of economic impacts, is still expanding. It is wonderful to have the importance of these perspectives recognized by the BBVA Foundation.

It is obvious to someone who studies networks that I would not have received this prize without the help of many others. There is a whole field of interconnected researchers of which I am just one representative.

On a personal note, I also thank two key mentors: Salvador Barberà and Hugo Sonnenschein. Hugo had confidence in me, spent the time to get to know me, and helped me find my path forward. Salvador helped me find the joy of discovery, and has been a lifelong friend.

I have always had an amazing support network, from my parents and siblings onwards. And, most especially, I thank my wife Sara and my daughters Emilie

and Lisa. They embraced the itinerant life of a researcher and provided a home no matter where we were. They were choosy - rarely missing a trip to France or Spain - but whether it was in person or spirit they were always with me.

I leave you with an observation that fascinates me. Technology is connecting us to more people and across greater distances than ever before. Yet, that same technology also amplifies our basic tendencies: algorithms and search engines help connect us with people who think and act just like us and feed us the news that we want to hear. So, while our world is becoming ever more connected, it is also becoming more divided and polarized. It will take our efforts to ensure that connection wins out over division.