

The power of weak ties in gaining new employment

An experiment using data from 20 million LinkedIn profiles shows how much we rely on people we know less well to land new jobs.

Peter Dizikes | MIT News Office

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A large-scale experiment co-directed by an MIT scholar shows that on LinkedIn weak connections are more likely to land you new employment, compared to your ties with people you know better.

Image: Christine Daniloff, MIT

If you have a LinkedIn account, your connections probably consist of a core group of people you know well, and a larger set of people you know less well. The latter are what experts call “weak ties.” Now a unique, large-scale experiment co-directed by an MIT scholar shows that

on LinkedIn, those weak ties are more likely to land you new employment, compared to your ties with people you know better.

“When we look at the experimental data, weak ties are better, on average, for job mobility than strong ties,” says Sinan Aral, a management professor at MIT and co-author of a new paper detailing the results of the study, which involved millions of LinkedIn users.

The experiment upholds the idea, first posited nearly 50 years ago, that weak ties have a value strong ties do not. The people you know best may have social networks that closely resemble your own and thus may not add much new job-seeking value for you. Your more casual acquaintances, on the other hand, have social networks that overlap less with yours and may provide connections or information you would not otherwise be able to access.

In recent years, however, some scholars have suggested there is a “paradox of weak ties,” in which strong ties actually are more useful in the job market. But the new experiment provides evidence to the contrary; weak ties are indeed more useful, a finding that particularly applies to more digitally oriented industries.

“Our experiment provides evidence in the opposite direction from the ‘paradox of weak ties,’” Aral says.

The paper, “A Causal Test of the Strength of Weak Ties,” appears today in *Science*. The authors are Karthik Rajkumar, a computational social scientist at LinkedIn; Guillaume Saint-Jacques PhD ’18, a senior manager at Apple who previously worked as a research scientist and manager at LinkedIn; Iavor Bojinov, an assistant professor at Harvard Business School and a former data scientist at LinkedIn; Erik Brynjolfsson, the Jerry Yang and Akiko Yamazaki Professor and Senior Fellow at the Stanford Institute for Human-Centered AI, and director of the Stanford Digital Economy Lab; and Aral, the David Austin Professor of Management at the MIT Sloan School of Management and director of the MIT Initiative on the Digital Economy.

A novel test of weak ties

The notion that there is something especially useful about the more tenuous connections in your social network dates to a highly influential 1973 paper by Stanford sociologist Mark Granovetter, “The Strength of Weak Ties,” from *The American Journal of Sociology*. In it,

Granovetter identified weak ties as a key source of “diffusion of influence and information, mobility opportunity, and community organization.”

Granovetter’s ideas have spread widely in academia and Silicon Valley, especially with the growth of online social networks, but have been tough to test. For instance, regarding job-hunting, it can be difficult to untangle the impact of someone’s social network from their networking skills. As the scholars also note in the paper, it is also challenging to find solid data sets linking social networks and job searches in the first place.

The current study gets traction on the issue in a unique way, as a five-year experiment involving LinkedIn’s “People You May Know” (PYMK) algorithm, which suggests new connections to site users. To conduct the experiment, from 2015 through 2019, LinkedIn adjusted the PYMK algorithm, so that some site users saw a higher concentration of PYMK suggestions to whom they had strong ties, and others received more PYMK suggestions to people with whom they had weak ties.

The scholars also defined tie strength in two ways: by interaction intensity, based on the number of messaging interactions people had, and in structural terms, based on the number of mutual friends two users had in common.

All told, the experiment involved around 20 million LinkedIn users, who over the five years ended up creating about 2 billion new connections on the site, recorded over 70 million job applications, and wound up accepting 600,000 new jobs identified through the site.

“This is by far the largest longitudinal, randomized controlled experiment on the strength of weak ties ever conducted,” Aral says. “I don’t think there’s any real debate about that.”

And from that mass of data, a clear pattern emerged. As the researchers write in the paper, “the stronger the newly added ties were, the less likely they were to lead to a job transmission.”

The upside-down U shape

The fact that weak ties led to more job opportunities, overall, is just one of multiple related findings from the study. The scholars also found that the connection between structural tie

strength and job transmission does not exist in a simple inverse form.

“The strength of weak ties is not linear,” Aral says. Charting the relationship between structural tie strength — the number of connections you have in common with someone — and usefulness, the scholars found those two properties have an upside-down U-shape form. The connecting bar between the two sides of the “U” is where moderately weak ties are, representing the highest-yield connections that people have on LinkedIn.

“Moderately weak ties are the best,” Aral says. “Not the weakest, but slightly stronger than the weakest.” The inflection point is around 10 mutual connections between people; if you share more than that with someone on LinkedIn, the usefulness of your connection to the other person, in job-hunting terms, diminishes.

However, when it comes to interaction intensity — how often you are in communication with someone — the results look a bit more linear. In this case, what emerges is closer to the idea that the weakest ties produce the most results, and the strongest ties produce the least job transmission.

“These two measures behave differently,” Aral says. “It’s important to think about weak ties in this multifaceted way, with interaction intensity and structural bridging.”

Finally, the usefulness of weak ties varies by industry on LinkedIn. The power of weak ties on the site is especially strong in high-tech industries.

“Weak ties are better in more digital industries,” Aral says, defining those as fields that are “more suitable for machine learning, artificial intelligence, more software intensive, more suitable for remote work, and so on. In those industries, weak ties are even more important. In analog industries, stronger ties can be more important.”

This could be due to what Aral has in previous research called the “refresh rate” of digital industries, in which they keep evolving quickly, making it more important to have a wide range of connections — especially weak ties — in those fields. Still, Aral notes, “We encourage more research, because we need to know more about why this variation seems to exist across industries.”

Developed at MIT

The genesis of the study goes back several years, when Saint-Jacques was pursuing his PhD research at MIT Sloan, advised by Brynjolfsson (then at MIT) and Aral. The group developed the idea of the research project, and after Saint-Jacques joined LinkedIn, had the opportunity to engineer the large-scale experiment.

The sheer size of the study, Aral notes, made it possible for the researchers to draw their multiple conclusions with confidence.

“The scale of the experiment is necessary for that, because you need a lot of statistical power to examine the question with such granularity,” Aral observes.

Other scholars say the study is a significant addition to the literature on social and professional networks and weak ties.

For his part, Aral says he regards the current study as part of a larger effort, involving both himself and other members of MIT’s Initiative on the Digital Economy, to grasp the real-world impacts of digital social platforms.

“The main thrust of conversation around those platforms in the world today has been about how they affect society, like teen mental health, democracies and our elections and the spread of fake news, and whether misinformation affects the global pandemic and vaccine hesitancy,” Aral says.

In this case, Aral adds, “What this study really highlights is, we have to add to that: How are these platforms affecting the global economy? ... This shows that one of the algorithms on LinkedIn can affect employment patterns, and it’s the largest professional network on the planet. We need to add that to the discussion about the impact of digital social networking on the world.”

PRESS MENTIONS

Scientific American

A new study co-authored by MIT researchers demonstrates that forming weak ties on LinkedIn can help people find new jobs, reports Vivianne Callier for *Scientific American*. “One thing the study highlights is the degree to which algorithms are guiding fundamental, baseline, important outcomes, like employment and unemployment,” says Prof. Sinan Aral.

 [Full story via Scientific American](#) →

The Guardian

Research by Prof. Sinan Aral and his colleagues has found that having “moderately weak ties” can positively facilitate job shifts, reports Nicola Davis for *The Guardian*. Aral said that as well as examining the importance of weak ties, the study highlighted the degree to which social media algorithms “are turning the knobs on our economies and fundamental indicators like employment.”

 [Full story via The Guardian](#) →

Fast Company

Fast Company reporter Sam Becker writes that a study co-authored by MIT researchers finds that weaker social connections on LinkedIn have a greater impact on job mobility than stronger relationships. The findings demonstrate that “the best thing many job seekers can do, as counterintuitive as it sounds, is to mine their lesser-known or secondary connections for opportunities,” writes Becker.

 [Full story via Fast Company](#) →

HELPING ATTORNEYS AND LAW STUDENTS SHIFT FROM A NETWORKING MINDSET TO A KEEP-IN-TOUCH MINDSET

By Jason Levin

Do we really need another NALP article on networking? I would say Y-E-S. In a pre/post /whatever you call it pandemic world, we need to set our intentions around relationship building.

This critical topic is near and dear to the work of the NALP community. Career services professionals continue to provide annual programming around the value of relationships in job searches and successful career transitions. Law firm professional development and marketing staff emphasize the importance of networking to their associates, counsel, and partners so that they can build relationships both within the firm and with

clients, peers, consultants, and vendors. Developing intentional approaches to these relationships would help with mentorship and sponsorship, active feedback loops, and business development.

Pre-pandemic, networking — both as a concept and as an action — was already a challenge for law students and attorneys. Misperceptions around the transactional and inauthentic approaches to networking led many students and lawyers to want to avoid the subject entirely. There is a better way, though, to become more authentic in our relationship-building efforts.

The Keep-in-Touch Mindset

Let's move from a networking mindset to a keep-in-touch mindset. In conducting

research for my book, *Relationships to Infinity: The Art and Science of Keeping in Touch*, I reviewed psychology periodicals and interviewed members of the mental health

Worry, fear, and guilt limit our ability to interact, connect, and reconnect with people.

community. We discussed topics such as connection, re-connection, and barriers to keeping in touch. In my own coaching and training practice, I also observed that many law students and attorneys exhibit guilt, fear, and worry for not having kept in touch with friends, classmates, colleagues, and clients. Despite an interest in wanting to connect

with these people, attorneys are often frustrated and just don't know where to begin.

As I dug deeper into my research, I continued to sit with concepts to understand the barriers that keep us from reconnecting with one another. It was as if attorneys were getting lost in their own heads. I saw this as a Bermuda Triangle of worry, fear, and guilt, where intentions for keeping in touch literally get lost in law students' and attorneys' own minds.

To validate the Bermuda Triangle concept, I interviewed Brian Peters, EdD, a Senior Human Capital Consultant at Franklin IQ,

who has a doctorate in counseling psychology from George Washington University. He agreed that worry, fear, and guilt limit our ability to interact, connect, and reconnect with people.

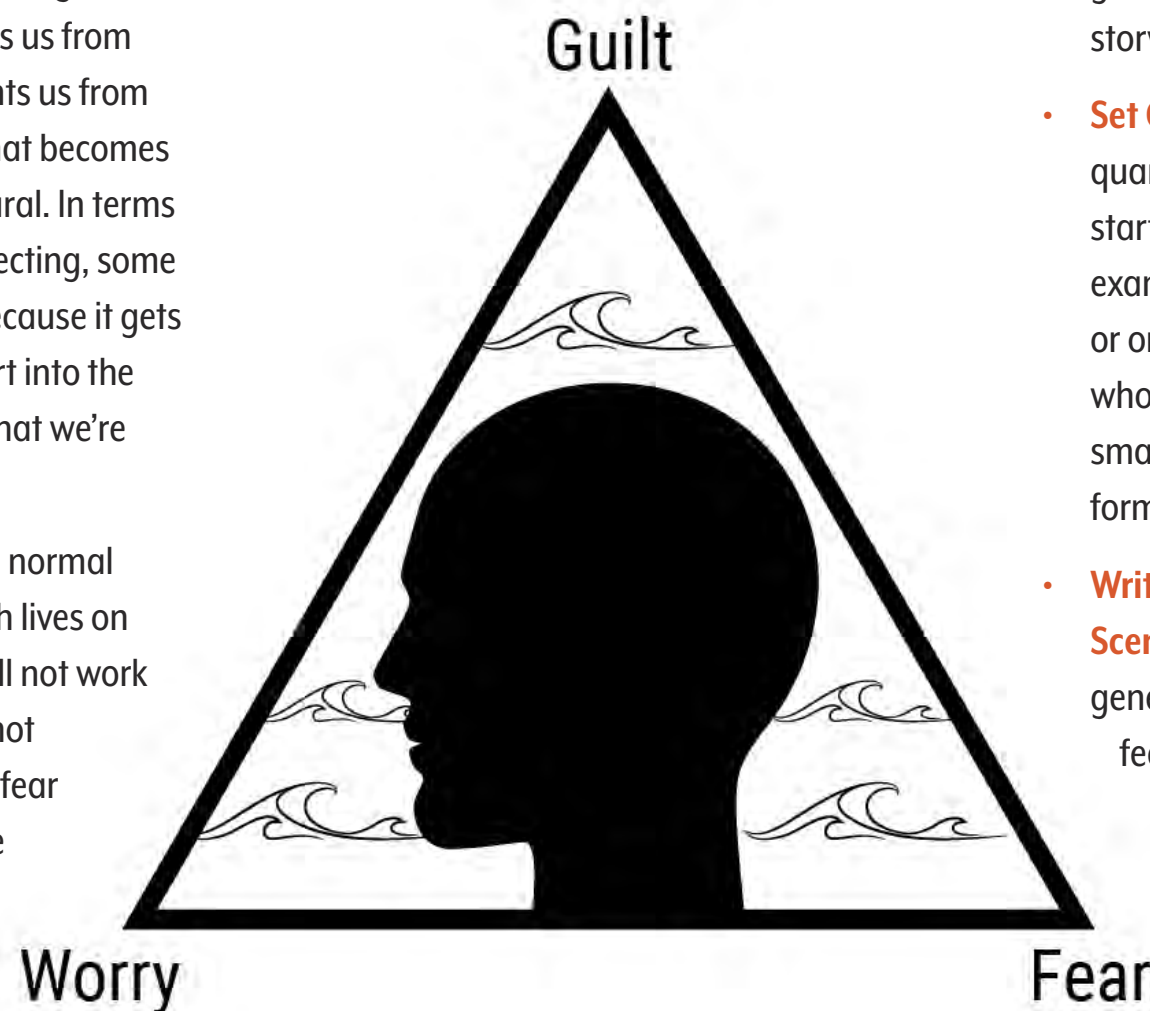
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Dr. Peters explained these three emotions that get in our way to connect:

- **Worry:** “Worry is a normal human defense mechanism. The limbic system in our brain is the emotional part of our brain and houses the amygdala. The amygdala can cause the flight response so that long ago, we would run away from bears. In modern-day life, we worry about getting our work done before the day ends. We worry about whether we are going to be entertaining enough at a party. But if worry prevents us from going to a party, or prevents us from calling our friends, then that becomes anxiety, which is also natural. In terms of connecting and reconnecting, some level of anxiety is good, because it gets us to put a little more effort into the email and actually care what we’re saying to someone.”
- **Fear:** “Fear, like worry, is a normal emotional response, which lives on a continuum. I fear this will not work out. I fear the person will not respond to my message. I fear the person is going to take this the wrong way, and

I will look bad. I fear that I will lose this friend, and then I will be alone and homeless, etc. Fear is worry that has escalated.”

- **Guilt:** “Guilt is a feeling of shame or regret. When it comes to having not called someone in 5 or 10 years, guilt is a normal thing. You might have had things going on in your life and just lost touch. It is a normal human emotion to feel guilty for not having kept in touch.”



Is it possible to break out of the Bermuda Keep-In-Touch Triangle? Dr. Peters believes the answer is yes. He recommended the following three strategies for overcoming the worry, fear, and guilt that can come with a desire for connection and reconnection:

- **Create an Optimistic Internal Narrative:** “Optimism is going to lead toward better connections. Psychological resilience is important in having a high protective factor. The goal is to create a positive internal story to anticipate a favorable result.”
- **Set Goals That Form Habits:** “Mini-quantitative goals will be helpful in starting a reconnecting habit. For example, write an email once a week or once a month to someone with whom you have lost touch. These small, measurable goals can help form habits.”
- **Write Down the Most Likely Scenario:** “Journaling is healthy in general because it helps you process feelings and information in a logical way. Journaling moves you away from your emotional response. It is healthy to write down

what you believe will be the most likely response from the person you are reaching out to, which will encourage action.”

One at a Time

It only takes one outreach at a time, or one reconnection at a time. Attorneys and law students have a pathway to keeping in touch. It just begins with that first email, text message, direct message, or dare I say an old-fashioned letter with a stamp. Keep in touch! +



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