Tech scientists explore speed-dating behavior

For speed daters, first impressions are everything. But it's more than that: whether someone is hot or not.

Whether or not we like to admit it, we all may make snap judgments about a new face. Perhaps nowhere is this truer than in speed dating, during which people decide on someone's romantic potential in just a few seconds. How they make those decisions, however, is not well understood.

But now, researchers at the Caltech have found that people make such speed-dating decisions based on a combination of two different factors that are related to activity in two distinct parts of the brain.

Unsurprisingly, the first factor in determining whether someone gets a lot of date requests is physical attractiveness. The second factor, which may be less obvious, involves people's own individual preferences—how compatible a potential partner may be, for instance.

The study, which is published in the November 7 issue of the Journal of Neuroscience, is one of the first to look at what happens in the brain when people make rapid-judgment decisions that carry real social consequences, the researchers say.

"Psychologists have known for some time that people can often make very rapid judgments about others based on limited information, such as appearance," says John O'Doherty, professor of psychology and one of the paper's coauthors. "However, very little has been known about how this might work in real social interactions with real consequences—such as when making decisions about whether to date someone or not. And almost nothing is known about how this type of rapid judgment is made by the brain."

In the study, 39 heterosexual male and female volunteers were placed in a functional magnetic resonance imaging (fMRI) machine and then shown pictures of potential dates of the opposite sex. They were given four seconds to rate, on a scale from 1 to 4, how much they would want to date that person. After cycling through as many as 90 faces, the participants then rated the faces again—outside the fMRI machine and then shown pictures of potential dates of the opposite sex. They were given four seconds to rate, on a scale from 1 to 9. Later, the volunteers participated in a real speed-dating event, in which they spent five minutes talking to some of the potential dates they had rated in the fMRI machine. The participants listed those they wanted to see again; if there were any matches, each person in the pair was given their contact information.

Perhaps to no one's surprise, the researchers found that the people who were rated as most attractive by consensus were the ones who got the most date requests. Seeing someone who was deemed attractive (and who also ended up with more date requests) was associated with activity in a region of the rate's brain called the paracingulate cortex, a part of the dorsomedial prefrontal cortex (DMPFC), which is an important region of the rater's brain called the paracingulate cortex. The RMPFC, which is an important area for cognitive control and decision making, the paracingulate cortex, in particular, has been shown to be active when the brain is comparing options.

This phenomenon was fairly consistent across all participants, says Jeff Cooper, a former postdoctoral scholar in O'Doherty's lab and first author of the paper. In other words, nearly everyone considers physical attractiveness when judging a potential romantic partner, and that judgment is correlated with activity in the paracingulate cortex. "But that's not the only thing that's happening," Cooper adds. When some participants saw a person they wanted to date—but who was not rated as very desirable by everyone else—they showed more activation in the rostromedial prefrontal cortex (RMPFC), which is also a part of the DMPFC, but sits farther in front than the paracingulate cortex. The RMPFC has been previously associated with consideration of other people's thoughts, comparisons of oneself to others, and, in particular, perceptions of similarities with others. This suggests that in addition to physical attractiveness, the researchers say, people consider individual compatibility.

While good looks remains the most important factor in determining whether a person gets a date request, a person's likeability—as perceived by other individuals—is also important. For example, likeability serves as a tiebreaker if two people have equal attractiveness ratings. If someone thought a potential date was more likeable than other people did, then that someone was more likely to ask for a date.

"Our work shows for the first time that activity in two parts of the DMPFC may be very important for driving the snapshot judgments that we make all the time about other people," O'Doherty says. As for the results of the speed-dating event? A few couples were still together six weeks afterward, Cooper says, but the researchers have not followed up. The study was focused on the neural mechanisms behind snap judgments—how those judgments relate to long-term romantic success, he says, is another question.

In addition to Cooper and O'Doherty, the other authors of the Journal of Neuroscience paper are Caltech graduate student Simon Dunne and Teresa Farey of Trinity College Dublin. The title of paper is "Romantic Interactions. " This research was funded by an Irish Research Council on Science, Engineering, and Technology Fellowship, the Wellcome Trust, and the Gordon and Betty Moore Foundation.

News briefs from around the globe

Helping readers burst out of the Caltech bubble

Need to know

< 100 words about the world this week – topics sorted from good to bad

by The Tech Eds

- Israeli Iron Dome works
- Twinkies may live on
- Birds get flown home
- Obama visits Burma
- French winner unclear
- Serial killer in NYC?
- Unrest in Gaza

in other words

- 90% of incoming rockets stopped by system's interceptor missiles
- 18,500 jobs lost, but Twinkies recipe and brand could be sold
- 2 pelicans, blown to Rhode I. by Sandy, taken back to Florida
- 1st visit to Burma by a serving US president, promises friendship
- 100’s of votes separate Cope and Filloon in UMP race, claims of fraud
- 3 murders linked to same handgun, not necessarily same shooter
- 18 people killed in raids in response to Hamas rocket fire
Food with Mannion!

Do you like eating food? How about free food at nice restaurants? Ever want to tell the world exactly what you think of said food? The Tech will be beginning a new column to chronicle the foodie experiences of new writers every other week... The Catch: They’ll be going head-to-head with Tom Mannion who will be reviewing the same restaurant. If you have ever thought you were more of a gourmand than our resident master chef, now’s your chance to prove it!

Email us for a spot on the list at tech@caltech.edu

Write articles for the Tech

get paid up to $30

The California Tech

Carnegie 40-58, Pasadena, CA 91125
advertising e-mail: tech@caltech.edu
editorial e-mail: tech@caltech.edu

Editors-in-Chief
Jonathan Schor
Stanford Schor

Advisor
Richard Kipling

The Tech is published weekly except during vacation and examination periods by the Associated Students of the California Institute of Technology, Inc. The opinions expressed herein are strictly those of the authors and advertisers. Letters and submissions are welcome; e-mail submissions to tech@caltech.edu as plain-text attachments, including the author’s name, by Friday of the week before publication. The Tech does accept anonymous contributions under cleared authorship. Material submitted will be subject to edit and abbreviate all submissions for any reason. All written work remains property of its author.

Minutes for November 15, 2012. Taken by Allika Walvekar

Officers present: Diego Caporale, Christian Rivas, Pushpa Neppala, Mario Zubia, Michelle Tang, Allika Walvekar, Puikei Cheng

Officers Absent:
Call to Order: 8:37 pm

President’s Report (Diego): Ray Gonzales conducted a survey training class. He is a great resource if you need any future help on writing an unbiased survey.

The Caltech Writing Center is being revamped and moved to CSS.

The BoD had a meeting to revise the BoC bylaws that were released. A revised version with minor changes will be sent out the the community on Friday. A vote will be held the Monday or Tuesday after Thanksgiving. RA hiring will begin soon and the administrators would like to have more student involvement. Event registration for next year will be revamped and might include more training.

Officer’s Reports:

V.P. of Academic Affairs (ARC Chair: Pushpa): A Tech bulletin was published this week about the SFC. Connor put together an UG research committee with SFP involvement for a morning presentation at the SFC. Pushpa is going to try to organize skype focus groups with 2-3 alums per option for the SFC. The ARC is currently choosing a Professor of the Month for November. Drop day is 11/21/12 and winter term course registration is 11/26/12.

V.P. of Non-Academic Affairs (IHC Chair: Christian): Big I construction is wrapping up. Financial concerns with funding have been clarified with the presidents.

Director of Operations (Mario): Club funding announcements will occur in the next few days as the Steering Committee met on Monday. Mario will be assigning club storage lockers for clubs that asked for them. The yearbook has been sent to the publishers.

Treasurer (Puikei): Sent out emails to the reps and the treasurers about Big I.

Social Director (Michelle): All the houses passed their second safety check. Registration online will be shut off Friday at noon. Olive Harvest is tomorrow.

Secretary (Allika): Looked into printing ASCIT Thank You Card but professional companies are too expensive.

Allika will be designing a Thank You Card and printing it on cardstock.

Meeting Adjourned: 9:31
Bike Lab Announcements

Want more and better campus bike racks? Let us know!

Caltech BikeLab has met this week with the Caltech Transportation Office and are working to prepare a specific set of recommendations to improving the availability of bicycle parking around campus.

Is the bike rack near your lab, dorm, office always filled with bikes with no extra space to spare? Do you want more and better bike racks for your or favorite part of campus? Do you worry about bikes locked to nearby handrails as a potential safety hazard?

Now is your chance to let us know! Words work, but better yet would be to please take a photo (i.e. with your phone) and send it our way along with the approximate time, date, and location to bikeshop@caltech.edu

Pasadena Fold ‘N’ Go Bike Subsidy Program

The City of Pasadena and Metro developed a new and exciting folding bike subsidy program “FoldnGo Pasadena,” which provides generous price discounts to transit riders to purchase a folding bike to ride to bus and/or rail stops in Pasadena.

If you live, work, or study in Pasadena, you can get $220 off the price of a folding bike. http://foldngobike.com/go-learn/

Nominate your favorite professor for the Feynman Teaching Prize!

Here’s your chance to nominate your favorite professor for the 2012-13 Richard P. Feynman Prize for Excellence in Teaching! You have from now until January 2, 2013 to submit your nomination package to the Provost’s Office to honor a professor who demonstrates, in the broadest sense, unusual ability, creativity, and innovation in undergraduate and graduate classroom or laboratory teaching.

The Feynman Prize is made possible through the generosity of Ione and Robert E. Paradise, with additional contributions from an anonymous local couple. Nominations for the Feynman Teaching Prize are welcome from faculty, students, postdoctoral scholars, staff, and alumni.

All professorial faculty of the Institute are eligible. The prize consists of a cash award of $3,500, matched by an equivalent raise in the annual salary of the awardee. A letter of nomination and detailed supporting material, including, but not limited to, a curriculum vitae, course syllabus or description, and supporting recommendation letters should be directed to the Feynman Prize Selection Committee, Office of the Provost, Mail Code 206-31, at the California Institute of Technology, Pasadena, California, 91125. Nomination packages are due by January 2, 2013.

Additional information including guidelines for the prize and FAQ may be found at http://provost.caltech.edu/FeynmanTeachingPrize. Further information can also be obtained from Karen Kerbs (626-395-6039; kkerbs@caltech.edu) in the Provost’s Office.
Recently our ASCIT president sent an email to the undergraduate student body proposing changes to the Board of Control (BoC) that would affect the student body. In response to concerns that no biased individual has the power to determine the outcome of a case, we human beings are still opinionated. If we look at the fact that our opinions are not unbiased, we realize that we are not the only ones who have that opinion. Again, I think it’s worth discussing with the BoC reps that represent you before you vote.

Even after the revisions, I still find fundamental flaws in the changes. Our current and future representatives and administrators are not held to the intent of these changes, they are held to the wording, and what that means is up for interpretation. I am not comfortable voting for these changes.

Whether or not you are a 17-year-old, I appreciate your taking the time to think about your vote before making it.
**Student Voices:** Speaking out against BoC changes

ERIKA DEBENEDICTUS
Contributing Writer

Avin Andrade, BoC Chair, recently proposed a set of amendments to the BoC by-laws. The amendments include a number of small changes in wording, the addition of specific guidelines for minimizing the overworked BoC, and changes in the timing of off-campus rep elections. Many of the modifications cause the by-laws to better reflect what the BoC already does.

There is one major exception. The proposed amendments would also add clause 3(v) which allows the Chair and the Secretary to bypass a full board hearing and convict automatically, with just two people looking at the evidence rather than two. Avin assured me that he had ‘doubts about both of the cases in question, clause 3(v) to bypass a full board. I’m skeptical.

I got the very strong impression that Avin thought these cases were trivial, and that was the basis for my thinking. Any criminal charge, I would have thought, was always at least a half hour. The truth at the very least, are these examples of cases that he, and every overworked BoC chair after him, will be tempted to finish with minimal effort by exercising 3(v), the convict at prelims’ clause in the particular example I described, the result would have been disastrous: an innocent defendant would have been convicted, and a very serious case would have bypassed the primary mode of function in the BoC. I mention these examples to illustrate the fact that cases are far from black and white when there are more people are involved in the discussion.

Last Monday, Avin sent out an email with more information about the bylaw amendments. He makes the following comment about 3(v):

‘This change has two major benefits. First off, this will help the BoC deal with the large number of cases that have been reported. Second, it avoids putting unnecessary stress on a defendant. Going through a BoC hearing can be a very difficult experience. We on the BoC try to minimize the discomfort, but there is only so much we can do.

I’d like to briefly respond to these points. The present BoC members are trained in a small violation relative to, say, a BoC secret.

In response to the second point, I imagine that there is a fair amount of stress associated with being overworked, but it’s not necessarily all bad for the defendant. The experience of being called in to give your testimony to the full board is a powerful one. You face nine of your peers who have been appointed with the power to make disciplinary decisions in order to protect the Caltech honor code. It is an experience that impresses upon defendants the idea that the honor code is not to be taken lightly. Every single conviction, regardless of whether it’s for something trivial or something more serious, is a big deal. It is the least the BoC can do to have a full board think about the decision and try to tailor a protection decision so that it will be useful for the defendant.

Furthermore, I think it’s very important that the community enforces the honor code. BoC reps have had closed book exams and sets that take all night and non-colleges problems which would be much, much easier with less. We’ve gone through many of the same things that you, the defendant, are dealing with. Our goal is not to punish, our goal is to encourage defendants to think about and follow the honor code. The experience of being BoCed as well as the perspective that nine reps are! (Hey guys, don’t cheat! It solves all the problems!)

In response to the second point, I imagine that there is a fair amount of stress associated with being overworked, but it’s not necessarily all bad for the defendant. The experience of being called in to give your testimony to the full board is a powerful one. You face nine of your peers who have been appointed with the power to make disciplinary decisions in order to protect the Caltech honor code. It is an experience that impresses upon defendants the idea that the honor code is not to be taken lightly. Every single conviction, regardless of whether it’s for something trivial or something more serious, is a big deal. It is the least the BoC can do to have a full board think about the decision and try to tailor a protection decision so that it will be useful for the defendant.

Furthermore, I think it’s very important that the community enforces the honor code. BoC reps have had closed book exams and sets that take all night and non-colleges problems which would be much, much easier with less. We’ve gone through many of the same things that you, the defendant, are dealing with. Our goal is not to punish, our goal is to encourage defendants to think about and follow the honor code. The experience of being BoCed as well as the perspective that nine reps are! (Hey guys, don’t cheat! It solves all the problems!)

In response to the second point, I imagine that there is a fair amount of stress associated with being overworked, but it’s not necessarily all bad for the defendant. The experience of being called in to give your testimony to the full board is a powerful one. You face nine of your peers who have been appointed with the power to make disciplinary decisions in order to protect the Caltech honor code. It is an experience that impresses upon defendants the idea that the honor code is not to be taken lightly. Every single conviction, regardless of whether it’s for something trivial or something more serious, is a big deal. It is the least the BoC can do to have a full board think about the decision and try to tailor a protection decision so that it will be useful for the defendant.

Furthermore, I think it’s very important that the community enforces the honor code. BoC reps have had closed book exams and sets that take all night and non-colleges problems which would be much, much easier with less. We’ve gone through many of the same things that you, the defendant, are dealing with. Our goal is not to punish, our goal is to encourage defendants to think about and follow the honor code. The experience of being BoCed as well as the perspective that nine reps are! (Hey guys, don’t cheat! It solves all the problems!)

In response to the second point, I imagine that there is a fair amount of stress associated with being overworked, but it’s not necessarily all bad for the defendant. The experience of being called in to give your testimony to the full board is a powerful one. You face nine of your peers who have been appointed with the power to make disciplinary decisions in order to protect the Caltech honor code. It is an experience that impresses upon defendants the idea that the honor code is not to be taken lightly. Every single conviction, regardless of whether it’s for something trivial or something more serious, is a big deal. It is the least the BoC can do to have a full board think about the decision and try to tailor a protection decision so that it will be useful for the defendant.

Furthermore, I think it’s very important that the community enforces the honor code. BoC reps have had closed book exams and sets that take all night and non-colleges problems which would be much, much easier with less. We’ve gone through many of the same things that you, the defendant, are dealing with. Our goal is not to punish, our goal is to encourage defendants to think about and follow the honor code. The experience of being BoCed as well as the perspective that nine reps are! (Hey guys, don’t cheat! It solves all the problems!)

In response to the second point, I imagine that there is a fair amount of stress associated with being overworked, but it’s not necessarily all bad for the defendant. The experience of being called in to give your testimony to the full board is a powerful one. You face nine of your peers who have been appointed with the power to make disciplinary decisions in order to protect the Caltech honor code. It is an experience that impresses upon defendants the idea that the honor code is not to be taken lightly. Every single conviction, regardless of whether it’s for something trivial or something more serious, is a big deal. It is the least the BoC can do to have a full board think about the decision and try to tailor a protection decision so that it will be useful for the defendant.

Furthermore, I think it’s very important that the community enforces the honor code. BoC reps have had closed book exams and sets that take all night and non-colleges problems which would be much, much easier with less. We’ve gone through many of the same things that you, the defendant, are dealing with. Our goal is not to punish, our goal is to encourage defendants to think about and follow the honor code. The experience of being BoCed as well as the perspective that nine

---

HELP A TECHER
OUT

WHILE EARNING MONEY, NETWORKING WITH CALTECH ALUMNI, AND HONING YOUR COMMUNICATION SKILLS

CALTECH FUND PHONATHON CONTACTS OVER 5,000 ALUMNI EACH YEAR AND RAISES MONEY IN SUPPORT OF CIT, ITS STUDENTS, SCHOLARSHIPS, PROGRAMS, AND ATHLETICS.

**Earn** $13.50 per HOUR or more!

Fun, Friendly, Flexible Hours, Low Stress, Goal Oriented Environment on campus

**Caltechfund**

---

**The California Tech Fund**

**November 19, 2012**

5
Caltech Public Events is now hiring student ushers.
$15 per hour to work concerts, performances, lectures, films and parties.
No experience needed, no hard labor, flexible schedules.
*Requirements: Caltech student, Positive attitude, Friendly personality

To apply email Adam Jacobo (ajacobo@caltech.edu) or call (626)395-5907

For info on Caltech Public Events visit: www.caltech.edu/content/public-events
Clockwise from top left. Grace Leishman does a rain dance or pretends to be a bird. Not sure which; They’re all birds, now; Paige Logan takes a shot. Poor USC girl thinks she can block it; Marlyn Moore shoots a 3-pointer from waaaaaay downtown. Actually, it kind of looks like she’s doing magic; Sarah Wright falls from height while all the other players look up in awe; Rachel Hess attempts a layup. Giant pandas poop over 12 times a day.

These pictures were taken at the Caltech women’s basketball scrimmage versus the USC club team. They played three 15-minute periods, losing the first, tying the second, and losing the third. Did you know the sports editor in 2008 was named Yang Yang. After that was Rick Paul. That means I’m the first sports editor in recent memory that doesn’t have two first names instead of a first and last name. Unless you count Yang as a last name. Never trust a man with two first names. Ever.

-Amol Kamat
Acquired Taste

For more photos, videos, and archives of previous issues, check out the Tech website!

tech.caltech.edu