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IS GENIUS GENDERED?

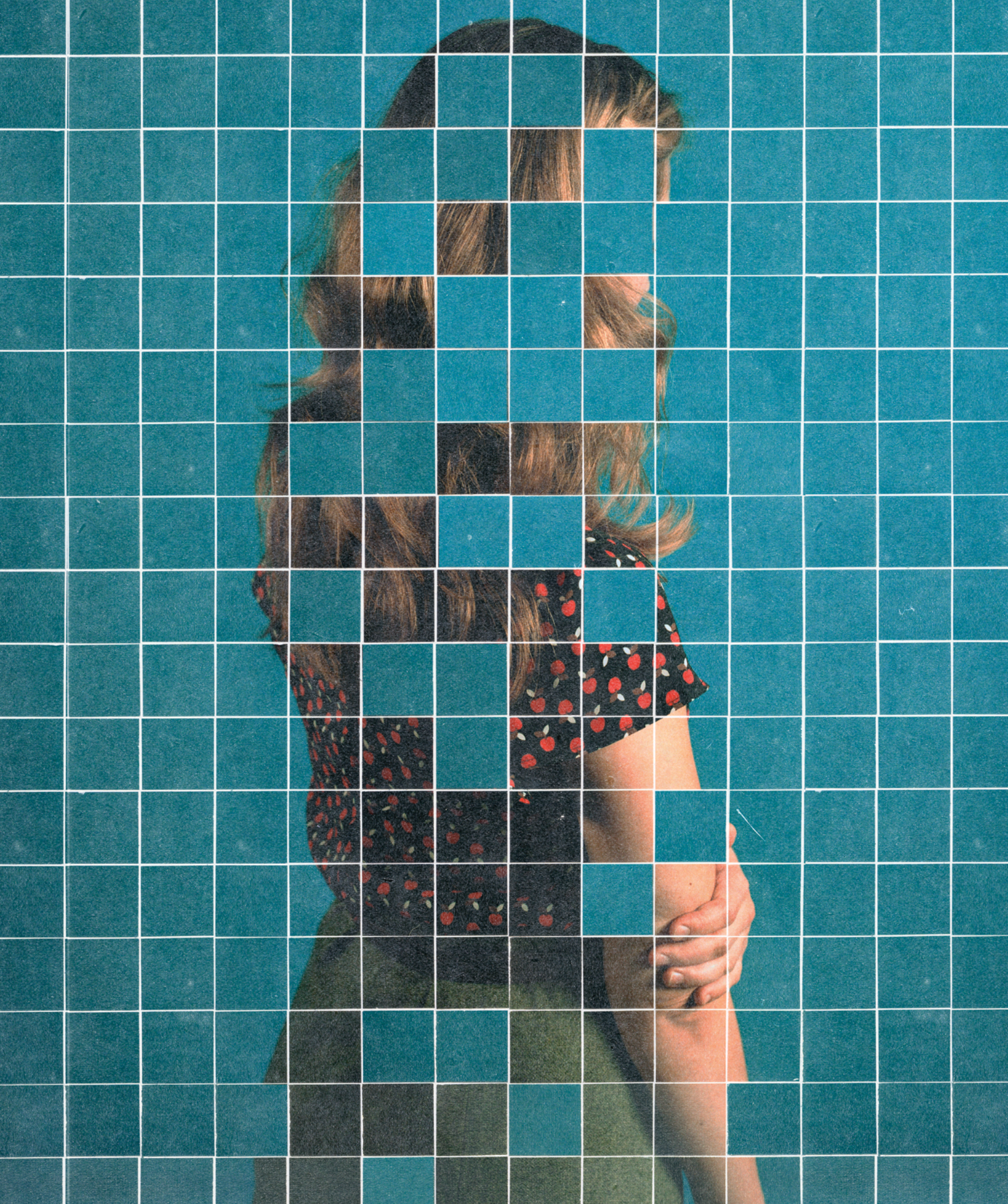
• ANOTHER NOBEL COMES TO WASHINGTON SQUARE
• NYU GOES GREENER



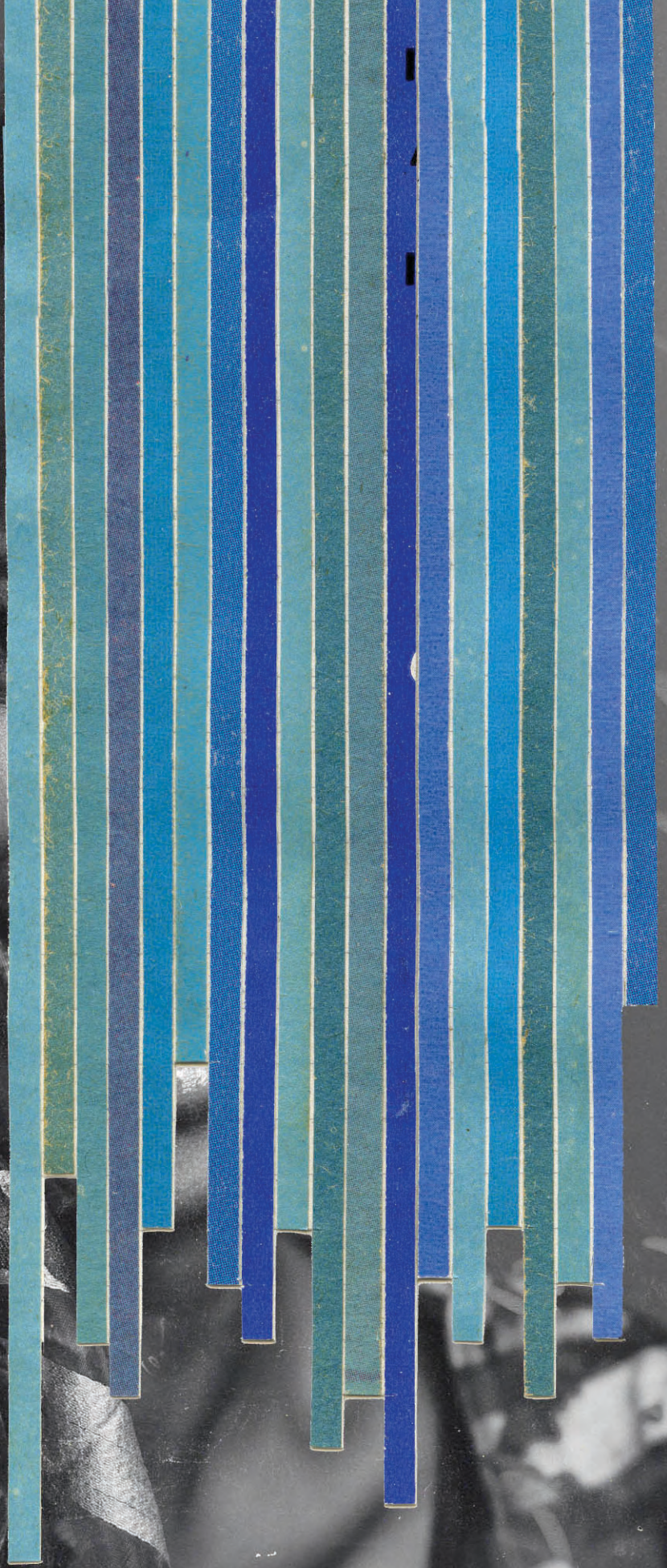
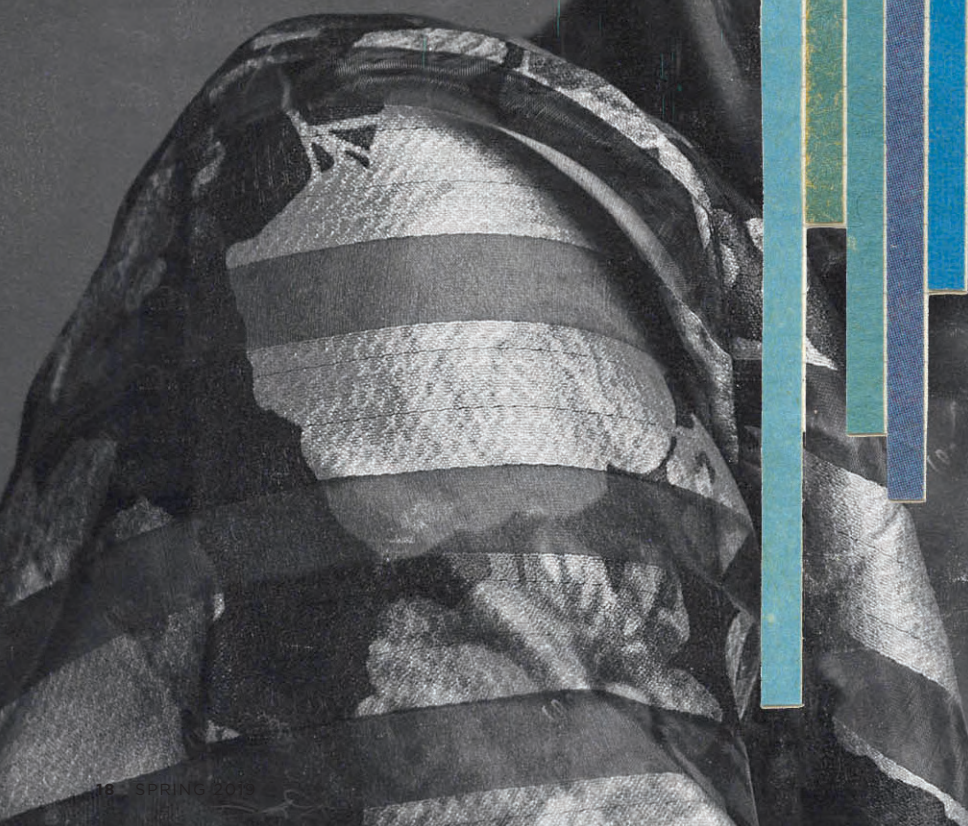
Sex & Genius

*The disturbing role gender bias plays in
how we perceive intellectual exceptionalism*

BY LINDSY VAN GELDER
ARTWORK BY ANTHONY GERACE



Definitions belong to the definers,
not the defined.
Something that is loved is never lost



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Quick, picture a genius.

Did you imagine a wild-haired Einstein? Newton daydreaming under an apple tree? Mozart churning out symphonies in preschool? Hippie geek Steve Jobs inventing personal computers in a garage? da Vinci? Plato? Maybe you envisaged Sherlock Holmes, sequestered with his violin and his cocaine, his brain afire with brilliant crime solutions. Or, for that matter, his nemesis, the felonious mastermind Moriarty. Not to mention the mad scientist Dr. Frankenstein, or his benign animated counterpart, Professor Utonium. Jimmy Neutron. Encyclopedia Brown. Sheldon Cooper. Dr. House. The know-it-all beagle Mr. Peabody from *Rocky and Bullwinkle*.

We could keep going here, but perhaps you've noticed a trend. Whether historical or literary or cartoon, great or mad or evil, artsy or STEM-inclined, ancient or modern, absentminded or laser-focused, the typical genius figure in our culture is generally male. And white. Even the dog.

According to Andrei Cimpian, Arts and Science associate professor of psychology, the belief that only men can occupy the stratosphere of intelligence begins in childhood and is shared by adults of both genders. Such stereotyping persists even when people have otherwise positive opinions about women and girls as coworkers and team members—which is most of the time. “A lot of research suggests that people like women more than they like men,” Cimpian explains. But it’s “not a matter of liking, it’s a matter of assumption about competence,” he says. Women aren’t considered stupid; they’re just rarely assumed to bring staggering natural giftedness to the table.

The topic of intellectual gender stereotypes and their consequences—now a significant portion of Cimpian’s lifework—was something he stumbled upon eight years ago. At the time, his specialty was a rarefied cross-disciplinary study of how what Cimpian calls “generic sentences” that categorize the world (such as “boys like sports,” “birds lay eggs”) are understood and used to convey information.

On the conference circuit, he met and befriended Princeton University philosophy professor Sarah-Jane Leslie, who examined generic sentences from a philosopher’s perspective. They chatted about other things, too, like the dearth of women and people of color in Leslie’s field. At other times, they wondered why the expectations for those who become luminaries in their respective areas differed, despite the fact that psychology was considered

to be a branch of philosophy until the mid-19th century. In philosophy, says Cimpian, the kind of person who rises to the top is “the brilliant superstar with the exceptional mind.” Success in psychology, on the other hand, is associated less with one’s brilliance and more with the ability to work hard and do copious amounts of research.

The aha moment that merged these two ideas occurred in 2011 when, after a day of conference panels and papers, they joined several colleagues for dinner. A discussion about how philosophy venerates a certain kind of genius was immediately followed by another bemoaning white males’ dominance of the field. “We just never saw the connection before that night,” says Cimpian. After the meal, he and Leslie asked themselves: Do certain disciplines launch a “KEEP OUT” sign at anyone who isn’t white and male by suggesting that only people who look like Einstein or Mozart will be allowed in? “We started working on issues of diversity as a result of that conversation,” he says.

Several studies by Cimpian and Leslie (and various coauthors) have since tested their theory. The first was published in 2015 in *Science*. At the time, 72 percent of doctorates in psychology were awarded to women and 6 percent to African Americans; the comparable figures for PhDs in philosophy were 26 percent for women and 1 percent for African Americans. The researchers surveyed more than 1,800 faculty members, graduate students, and postdoctoral fellows in 30 disciplines nationwide about their criteria for success in their fields, then compared their answers with data on the diversity of those fields. The paper’s hypothesis was this, it said: “across the academic spectrum, women are underrepresented in fields whose practitioners believe that raw, innate talent is the main requirement for success, because women are stereotyped as not possessing such talent. This hypothesis extends to African Americans’ underrepresentation as well.”

The data indeed showed that fields in the pro-genius camp—such as philosophy, musical composition, economics, physics, computer science, and engineering—graduated the fewest female PhDs. Conversely, fields that valued effort over inborn brilliance—like psychology, art history, education, communication studies, and, among the STEM fields, molecular biology—had the most women. Similar results occurred for African Americans (although not for Asian Americans, who face a different set of stereotypes).

The researchers compared their hypothesis with common, alternative theories about why women are so infrequently seen in certain disciplines. Are math scores a predictor? Did women reject fields with heavier workloads that might interfere with family life? Were they only interested in jobs that entailed working with others? The data answered with no, no, and no.

In 2016, Cimpian and Leslie carried their research far beyond the acquisition of doctoral degrees. In *PLOS ONE*, a journal of the Public Library of Science, they used a software tool to analyze some 14 million online RateMyProfessors.com entries. The takeaway, according to Cimpian: “If you search for the words ‘brilliant’ and ‘genius,’ they’re used nearly three times as often for men. When you search for words like ‘warm’ and ‘caring,’ it flips. When you search for superlatives like ‘excellent’ and ‘amazing,’ it’s gender-neutral. Students think women can be *excellent* instructors, but just not as brilliant.”

The pair’s 2018 paper in the *Journal of Experimental Social Psychology* reported on a survey of young men and women considering potential internships or college majors. “Women who hear that a particular context is for brilliant people feel that it’s not for them,” says Cimpian. Even if they don’t believe the myth of their own intellectual inferiority and are simply aware that other people may perceive them as inferior, they self-select out of situations where they might reasonably assume that they wouldn’t be welcome anyway. Thus the cycle of discrimination perpetuates itself.

Such thinking begins early. A 2017 article in *Science* reported the duo’s findings that at around age 6, girls become less likely than boys and younger girls to associate their gender with people who are “really, really smart”—and start avoiding activities identified as being only for “really, really smart” children.

Building on all this previous work, their newest project—“Evidence of Bias Against Girls and Women in Contexts That Emphasize Intellectual Ability”—was published this past winter in *American Psychologist*. Senior author Cimpian designed three experiments with Leslie and his former visiting University of Illinois graduate student Lin Bian, now assistant professor of human development at Cornell.

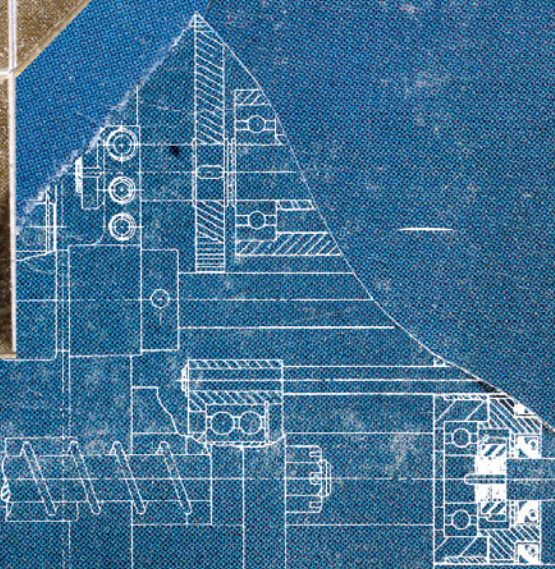
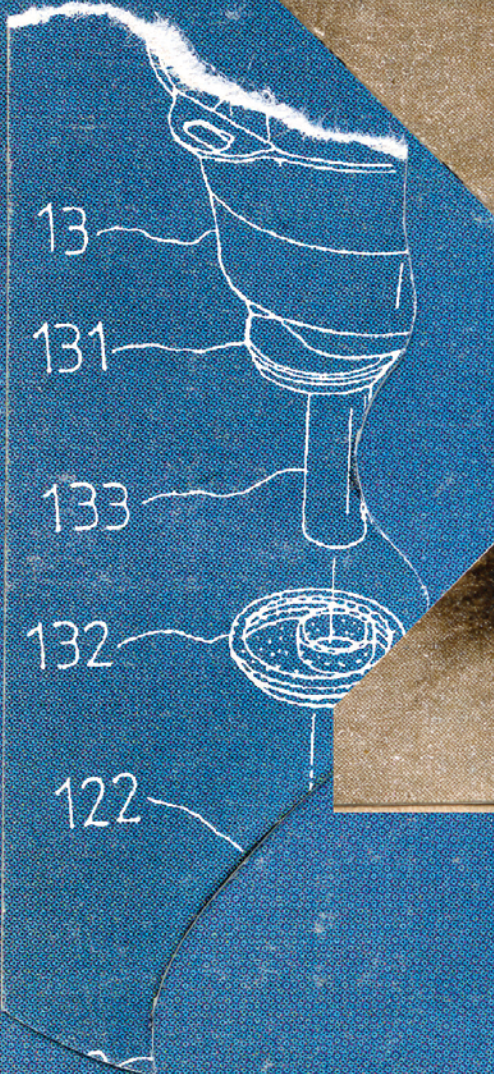
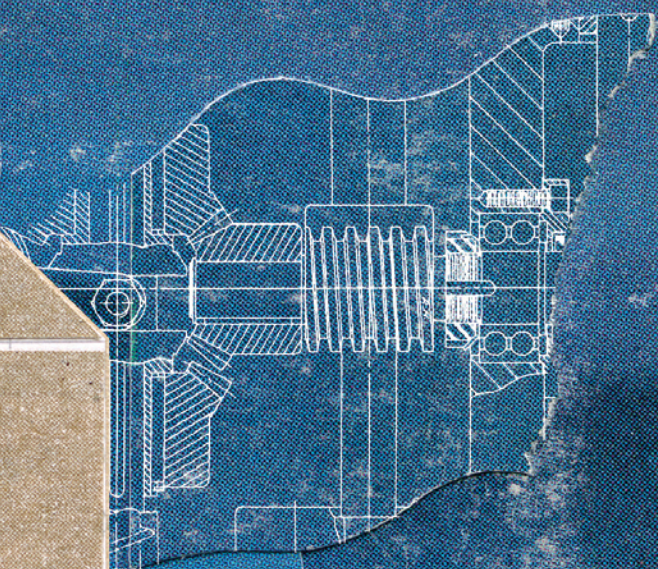
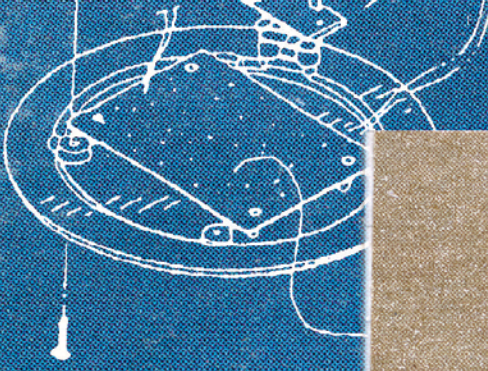
Based on their investigations, they concluded that even when women wanted to pursue a position requiring intellectual gifts, they were less likely to get a toe in the door. The pair first asked

347 participants (both men and women) to imagine they were working for a large company and to refer people they knew for an opening, whether or not those individuals were looking for work. Half were told that the post required “high IQ” and “natural intelligence,” while the other half were given a job description emphasizing traits like effort and motivation. At the end of the session, they were also administered a questionnaire designed to gauge their opinions about gender equality.

Women in general were more likely than men to recommend another woman, and both men and women with more chauvinistic views were less likely to endorse a woman for either category of employment. But as a group, regardless of their own gender, the odds of referring a woman were 38 percent lower when the job description called for brilliance.

A second experiment duplicated the first trial of the study, but with a much larger and more ethnically diverse sample of respondents—811 people, 44 percent of them people of color. (The aim was to match US demographics as a whole, although the researchers note that African Americans were over-sampled while Latinos/Latinas were under-sampled.) Some interesting variations from the first sampling arose. Participants of color, for instance, were more likely in general to suggest a woman than were white participants. (Cimpian suggests this could reflect the historic high employment rates of black women, but he adds that much more research needs to be done on the intersection of gender bias and ethnicity.) The second group was also more likely than the first group to refer a woman when the job description mentioned brilliance. But the odds of recommending a woman for the brilliance job were still 26 percent lower than for the job requiring dedication and hard work.

The third experiment in the study involved 192 children, 69 percent of them non-Hispanic white, between the ages of 5 and 7. Half the kids were presented with a series of games and told to pick three teammates from randomly arranged photographs of six unfamiliar boys and girls, all of them white. Another group was asked to do the same, but they were told that the games were “only for children who are really, really smart.” Children at that age tend to have “in-group bias” for their own gender, Cimpian says, and the researchers were not surprised that boys mostly selected boys, and girls mostly picked girls, as teammates in the first two rounds. But in the third round, the



GENTS



CAUTION
DO NOT TOUCH
THIS SURFACE
IT IS HOT

girls' loyalty to their own gender began to falter when the game was labeled for smart kids only. The odds of a girl being chosen were 51 percent.

"This latest paper shows that it's not just women choosing not to enter fields—it's other people not seeing them as being the right material or having the right stuff," says Cimpian. "There's most likely an element of bias of other people that explains why women are so underrepresented." Although his study participants were in purely hypothetical situations, he adds, "it's a proof of concept that when you start talking about brilliance, people's minds veer toward men."

He and Leslie next plan to investigate who influences children's notions about intellectual disparities—parents, teachers, the media—and "whether these stereotypes are an American cultural phenomenon or more global," Cimpian notes, by studying populations in the United States and Singapore. "I'm more and more convinced," he continues, "with each set of papers [that this theory is important] in terms of intervening to make the playing field more equitable."

Genius is often associated with untidiness, eccentricity, rule flouting, and obliviousness to everything but the creative task at hand—and this idea, Cimpian notes, "works against women because women are less able to display these traits." An NYU colleague, professor of social psychology Madeline Heilman (who is thanked in the acknowledgments of the *American Psychologist* article), has some thoughts on this disconnect.

Heilman has made a career of studying how gender stereotypes undermine women at work. In one experiment, subjects were asked to comment on a first-person account during which a group of colleagues is setting off for an office party. During the scenario, one person realizes in a panic that the copying machine is broken and will not collate or staple the 500-page report they have to present the next morning. Participants harshly judged a woman who went on to the party without stopping to help—but a man who bailed escaped criticism. "When people ask for help, men don't pay for not giving it, but women do," Heilman says. "There's a whole range of things that are prescribed for women—being emotionally sensitive, being a cheerleader, and being inclusive."

In another experiment, she showed subjects identical résumés for "James" and "Andrea," providing no information about

them other than that they were "rising stars" in their fields. "Most of the participants preferred hiring James," Heilman says, "and they described Andrea as abrasive, pushy, and untrustworthy." It's worth repeating: the two résumés were exactly the same, except for the names at the top.

Women who are seen as trespassing on male turf are in a lose-lose situation, she explains. "In any kind of field or occupation or role that men have traditionally dominated, there's a perception that what's required to do the job are things that are typically associated with men, whether it's assertiveness, competitiveness, or taking risks. What women bring to the table is a lack of fit," Heilman says, since they are presumed not to be qualified in the first place. It's not damning that they *do* break through, it's damning that they "aren't supposed to be there," she says.

And then what happens? "They're still not supposed to be there, because women aren't supposed to be aggressive or forceful," Heilman says. "People will acknowledge that they're competent, but they don't like them. Hillary Clinton is the classic example, but she's hardly the only one." Her newest research, as yet unpublished, shows that when a male-female team at work suffers a failure, it's the woman who's blamed.

When Cimpian and Leslie were crystallizing their ideas about the intersection of genius and gender, one of the first cultural examples they thought of came from *Harry Potter*. ("Also Mulder and Scully from *The X-Files*," says Cimpian.) One of the smartest females in pop culture is probably Harry's Muggle-born friend Hermione Granger, who spends long hours in the Hogwarts library, boning up on ancient texts to perform ever-more-difficult feats with potions and charms.

"Harry is [perceived to be] the naturally gifted one who doesn't study as much as Hermione but nevertheless has the more powerful mind," Cimpian says. "Hermione is highly competent, but her competence is rooted in her knowledge." Despite her unquestioned reputation as the brightest witch of her age, the Career Sorting Hat would make Harry a philosopher (or a surgeon or a physicist) and Hermione a psychologist (or a pediatrician or an HR executive). And maybe they would be happy.

But two vexing questions remain: Why is it so hard for people to see a woman of the same genius caliber as Einstein, Mozart, and Jobs, and what can be done to change this?