

Sigrid E. Johnson this year. Illustration by Jules Julien

# Sigrid Johnson Was Black. A DNA Test Said She Wasn't.

The surge in popularity of services like 23andMe and Ancestry means that more and more people are unearthing long-buried connections and surprises in their ancestry.









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#### I.

Three years ago, when Sigrid E. Johnson was 62, she got a call from a researcher seeking volunteers for a study on DNA ancestry tests and ethnic identity. Johnson agreed to help. After all, she and the researcher, Anita Foeman, had been pals for half a century, ever since they attended the same elementary school in their integrated Philadelphia neighborhood, where they and other black children were mostly protected from the racism beyond its borders. Foeman, a professor of communication at West Chester University in Pennsylvania, asked Johnson to swab the inside of her cheek and share her thoughts about her ethnic and racial identity before and after the results came back.

Johnson's father, a chauffeur who later became a superintendent at a housing project in North Philadelphia, had a golden-brown complexion. Her mother, who said her own father was a white Brit and her mother was half African-American and half Native American, was light-skinned. People sometimes mistook Johnson's mother for white, and when she applied for seamstress jobs at department stores in the 1920s and '30s, she chose not to correct them.

Sigrid, who had light caramel skin, was their only child, and her parents, Martha and Frank Gilchrist, doted on her. In grade school, she prayed each night for an older brother, someone who would be fun to play with and would look after her, as her friends' brothers did with their siblings. When she wasn't busy with ballet and piano lessons, she caught lightning bugs and played dolls, hopscotch and jump rope with nearby friends. The neighborhood, West Mount Airy, was a tree-lined community, one of the first in the nation to integrate successfully. It was populated mostly by middle- and upper-class people, including many African-American professional men who had fair-skinned wives and children whose complexions matched their mothers'.

Johnson doesn't remember her parents talking much about race, except when her father made it clear that he expected her to marry a black man. But even without that explicit talk, she was immersed in the highs and lows of black life. Her cousin, a surgeon named William Gilchrist Anderson, lived in Albany, Ga., where he led a large coalition of activists in the early 1960s to desegregate public facilities. A friend and classmate of Ralph Abernathy, Anderson persuaded the Rev. Dr. Martin Luther King Jr. to participate in the city's demonstrations, which Johnson remembers she and her parents sometimes joined. During the family's trips to visit her cousin in Georgia, Johnson saw water fountains that said "Whites Only." And she still remembers the night that a giant cross burned near her cousin's front yard and how he swept her and everyone else out of the house and put them all up in a hotel.

As a young teenager, Johnson pestered her mother about what it was like to give birth to her — a query her mother always dodged. But when Johnson was 16, her mother broke down and said through tears that they adopted her when she was an infant. Her mother explained that Johnson's biological father was black and that her biological mother was a white Italian woman who said she couldn't keep the baby, who by then was 2 or 3 months old. The woman, who lived in South Philadelphia, had explained that she already had several children, all of whom were blond, and that her white husband didn't want another man's child raised in his home, not least of all one whose color so boldly announced that fact. Johnson's mother said the woman came to see the baby for about a year, until she asked the woman to stop visiting because she didn't want Sigrid to find out she was adopted. Johnson teared up as she recounted the conversation with her mother that took place 49 years ago. "The news — all of it — was crushing," Johnson told me. "To this day, I honestly wish she had never told me. I wanted my mom to be my mom." Neither one ever broached the subject with the other again.

So when Anita Foeman requested that she take a DNA test, Johnson figured it was no big deal: She was half African and half Italian. "I knew what the results would show when they came back — that is, until the results actually came back."

## II.

Johnson is one of many millions of people around the world who have placed a bit of saliva into a DNA kit, sent it off to a testing company, waited a good month for the results and then discovered the sometimes lifealtering secrets hidden in those tiny drops. Virtually every cell in a human's body carries that person's whole unique blueprint — the double helix of DNA. The genes on chromosomes influence the traits of every living thing. Testing companies analyze hundreds of thousands of particular genetic sequences and use those snippets as clues to all sorts of information. Scientists have determined specific locations in the DNA code that provide hints about where your ancestors came from, because people from the same geographical place share certain genetic similarities. The tests can also reveal your biological relatives, and how closely you're related, by evaluating how much of your and their DNA patterns overlap. In addition, DNA analysis can identify some of the hereditary disorders you may be predisposed to or may pass on to your children.

Rudimentary DNA testing has been around since the mid-20th century, but at-home genetic tests (aside from simple paternity tests) didn't show up until this century, after the Human Genome Project prompted biotechnological advances that made genetic sequencing much more affordable. Most of those early personal genomic tests focused on genealogy, a way to fill out the family tree, because determining familial connections is scientifically much more straightforward than determining a person's true ethnic lineage. But in 2007, as scientists linked more genes to diseases and traits, 23andMe pioneered a much broader kind of retail genomics, a \$999 saliva test that promised to reveal genetic information from the novel to the profound. It included ancestry and information about medical and other genetic information, including consumers' risk for agerelated macular degeneration, Parkinson's disease and Type 2 diabetes, as well genes that block the bitter taste in vegetables and influence weight gain.

'I knew what the results would show when they came back — that is, until the results actually came back.'

The following year, Time magazine named the company's retail DNA test the Invention of the Year, describing this moment as "the beginning of a personal-genomics revolution that will transform not only how we take care of ourselves but also what we mean by personal information. ... Not everything about how this information will be used is clear yet — 23andMe has stirred up debate about issues ranging from how meaningful the results are to how to prevent genetic discrimination — but the curtain has been pulled back, and it can never be closed again."

Those debates continue, but in the last year or so, sales of at-home genetic tests have risen meteorically. By April 2017, 23andMe had roughly two million customers, and this past January, just nine months later, it had more than five million. AncestryDNA's customer base doubled to about six million in 2017 alone and has since grown to more than 10 million. Add to that all the customers of MyHeritage, FamilyTreeDNA, Helix, National Geographic's DNA test and dozens of others. The most popular tests are those that promise to reveal test takers' ancestry and identify their relatives — and have the potential to upend our understanding of ourselves. Just imagine what you might find out: Your father is not your dad but actually your dad's best friend. Or your sister is really your half sister or isn't your biological sister at all. Or you're the child of a sperm donor and have 150 half siblings. These and endless other DNA surprises all raise the same question: Are we really who we think we are?

### III.

Once Johnson found out she was adopted, the 16-year-old examined every

passer-by in Philadelphia, wondering: "Are you my relative?" When it came time to choose a college, she opted for a school more than 500 miles away: a historically black university in Ohio called Wilberforce, named after a prominent 18th-century abolitionist. It was 1970, and on campus, talk of black power and black pride swirled around her. At first she felt self-conscious that she lacked the richly colored skin that was finally being celebrated in society, but her cousin's prominence in civil rights efforts gave her a certain confidence. While Johnson was at Wilberforce, she told no one that she was adopted and no one that she was half white. "I was at an all-black school, so if anyone asked what I was, I just said, 'Black.'"

In college, Johnson's sense of herself as a black person intensified, immersed as she was in a cocooned world that celebrated the contributions and ambitions of the community. Most of Johnson's professors were black, as were virtually all the students. She was surrounded by people who exuded pride in their identity.

All around her, classmates were sporting dashikis and other African garb, or the black beret and black leather jacket of the Black Panthers. Large Afros seemed ubiquitous, often with Afro picks decorated with a clenched black fist. Johnson stopped straightening her hair, which had required her to wrap her gentle curls around large rollers and sleep that way all night. By the early '70s, straightened hair was passé for black women, and Johnson did her best to keep up. "I tried really hard to make a bush, an Afro, teasing it up and then putting bobby pins in to keep it up, but when it rained, my bush would just fall." She bought an Afro wig with hair that stood five inches high and wore it daily. "No one ever asked if it was a wig," she said, "but my best friends knew." Soon after, she quit wearing it.

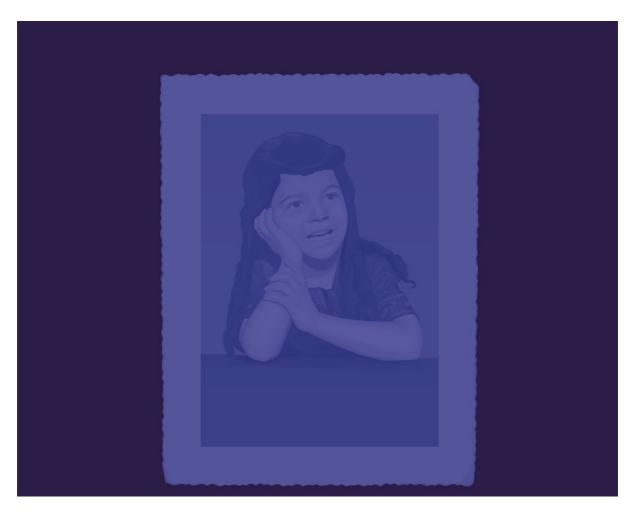
When Johnson was 22, she fell for a man she would later marry, but she never told him that she was half white or adopted. Her parents disapproved of how dark the man's skin was, because in their experience, lighter complexion meant higher status and more options. When the young couple's son was born in 1976, Johnson's parents were relieved that his coloring was more like their daughter's.

Johnson and her husband split up two years later. That same year, Johnson went back to school to get her nursing degree. In 1985, she married another man, a physical therapist; by then, both her parents had died. She told her husband what she had never told anyone else besides her son and a few close friends: She was adopted. His response was kind and supportive. Years later, he happened upon a conversation on "The Phil

Donahue Show" about adoptees successfully requesting their original birth certificates from state officials. He called Johnson at work right away and encouraged her to request her birth certificate too. He gathered all the information she needed, and they sent it off together. When it arrived, she learned that her mother's name was Ann D'Amico, so Johnson and her husband called D'Amicos they found in the Philadelphia phone book. Some who answered said they knew no Ann D'Amico. Others just hung up.

Still, when Johnson took the DNA test in 2015 at age 62, she was certain about what it would find and was sorry she wouldn't be able to share the results with her husband, who had died years earlier. The results, which indicated a stunning level of precision, shocked Johnson. They said she was 45.306 percent Hispanic, 32.321 percent Middle Eastern, 13.714 percent European and 8.659 percent "other," which included a mere 2.978 percent African.

"Two percent African?! I thought, Well, who am I then? I knew that at my age, I shouldn't really care what people think, but I was embarrassed to show it to anyone besides my son and my cousin, who's like a sister to me. I was afraid people would think I was a fraud. I was so disappointed, and in my heart of hearts, I didn't believe it, because how could I not be black? I'd lived black. I was black."



#### IV.

With the stupendous rise of DNA ancestry testing, academics have wondered how those genetic results affect people's core identity. Our sense of self, of course, is built on much more than just the ethnic tribe we belong to. We forge our identity from the social and cultural milieus we're raised in; the messages we get from parents, teachers and society about ourselves; the family lore and traditions passed down from generation to generation; and the experiences we have and hold dear. All of that is deeply woven into who we are.

"Our identity is what grounds us and gives our lives meaning," said David Brodzinsky, emeritus professor of developmental and clinical psychology at Rutgers University, whose work focuses on identity and adoption. "That identity can be a motivating force or a debilitating one, depending on how we define ourselves and internalize the feedback we get from others. We spend our lives searching for self, though we each do that in different ways and at different times. It's all about the desire to fill in empty spaces, to find connection, to know more about yourself."

For children cut off from their origins because of a closed adoption or an unknown sperm or egg donor, those answers are harder to get. And if a person's origin was a secret that they discover later in life, Brodzinsky said, they may feel that everything they knew about themselves and their roots was a lie. Even people who were raised by their biological parents can feel shaken when their DNA tests present results that don't fit with their understanding of who they are.

Anita Foeman is one of the academics studying the effects of unexpected DNA results. Since 2006, she has tested roughly 3,000 people. Before her subjects receive their results, she asks them about their racial and ethnic identities, then follows up with them once the results are in. Her research subjects often conflate race and ethnicity — "If I'm this color, my ancestors must be from this place." But ancestry tests look for genetic links to geographic regions, not to physical characteristics associated with race, like skin color, which is an unreliable indicator of ancestry. Foeman and researchers at other universities have found that people accept the results that suit their aspirations and often dismiss results that challenge their

long-held core beliefs.

"We seek out and cultivate identities to fill our need to belong, and it's through that lens of identity that we see and understand the world," said Jay Van Bavel, a psychology professor at New York University who researches how group identities, values and beliefs shape the mind and brain. "So when you get information that challenges your identity, many people tune it out, just like we do with headlines and news stories when they counter our politics and belief system."

When white test takers see results that indicate they have African ancestry, some, especially young people, welcome their newfound multicultural heritage, even when the percentage is small, which raises an interesting question: How much ancestry is enough to give someone the authority to claim that identity? Research also shows that some whites whose reports indicate African lineage conclude that it's irrelevant, and still others, no matter their race or ethnicity, disbelieve results they didn't expect. For example, many blacks and whites whose families have long claimed that some of their forebears were Native American dismiss DNA reports that say otherwise. And Asians, like whites, often rebuff results that indicate that their heritage isn't pure. Some people take that to extremes: White nationalists who use DNA tests to prove their racial purity adamantly reject any non-European results. A professor at the University of California at Los Angeles and another researcher studied comments on the online white-supremacist forum Stormfront. They found that some posters who had taken DNA tests and were upset with their results argued that they were "rigged" to "spread multiculturalism" or that the non-European findings were merely "noise DNA." Many African-Americans, meanwhile, upon seeing how much of their lineage is European, are not necessarily surprised or doubtful about the results, but they feel gut-punched by the bald reminder that even their genes carry slavery's legacy. Underlying all these reactions is the question of identity: What do these results mean about who I am? How do these results fit with the stories I've long clung to that connected my past, my present and my future?

#### V.

Ever since Johnson received her disorienting DNA results, she wondered if her saliva sample might have been accidentally mislabeled or she had been sent someone else's results. But it turns out that the company that analyzed her DNA focuses on forensic genetics and legal paternity tests.

which evaluate only a few segments of DNA, not the hundreds of thousands used by most ancestry-testing companies. (Foeman used this company for a minority of her research.) So this summer, when The New York Times offered to buy Johnson ancestry tests from more mainstream companies, AncestryDNA and 23andMe, she eagerly agreed.

Their tests determine ethnicity by analyzing segments of customers' DNA that give clues to their ancient geographic origins. Five hundred to 1,000 years ago, before large-scale transcontinental migration, people who lived in the same region had similar genetics. Scientists have been able to identify distinct patterns of genetic variation among people whose ancestors hail from the same lands, which is easiest to do with populations that were geographically isolated, like Finns and Filipinos, or were insular, like Ashkenazi Jews. Ideally, ancestry-testing companies would compare customers' DNA to that of people from premigration days. But given that impossibility, the companies use an imperfect proxy: people alive today who have a deep family tree in a particular geographic area, and sometimes a paper trail to prove it. Those people's DNA becomes the company's reference data set for that geographic area. When a segment of your DNA closely matches the data for that location, the company assigns you that ancestry. The more segments on your genome that match that genetic pattern, the larger your estimated percentage will be for that ancestry.

The larger the reference data set for any particular corner of the world, the better the resolution will be: suggesting that your ancestors aren't, say, just from Europe but from Northwestern Europe, or more specifically from Ireland and Scotland. Each testing company builds its own reference data set, drawn primarily from its own customers, and each company also creates its own algorithm for assigning heritage. In other words, customers' results are based on inferences and are merely an estimate, often a very rough one — something many test takers don't realize and testing companies play down.

Still, Johnson, now 65, hoped the new tests would conclude that her genes aligned with who she believed herself to be. In early August, with the kits in hand, she walked around her apartment, trying to work up enough saliva to fill the little collection tubes. Afterward, Johnson was both eager for quick results and hesitant about what they might say. "You know," she said, "even if the results are the same as they were before, I am still a black woman."

Weeks later, her AncestryDNA report was posted. It marked more than a third of her ancestry as "low confidence," meaning it couldn't establish its ethnicity because her DNA didn't sufficiently match the company's reference data sets. She was disappointed. It's a common experience for customers with non-European ancestry, because Africa and Asia are underrepresented in many companies' data sets, in part because most of their customers — the building blocks of their reference set — are of European descent. Many companies are trying to remedy that by seeking DNA from people in regions underrepresented in the data set.

'When you get information that challenges your identity, many people tune it out, just like we do with headlines and news stories when they counter our politics and belief system.'

The rest of Johnson's ethnicity, AncestryDNA said, broke down this way: 21 percent Europe South (but no percentage from Italy), 11 percent Caucasus, 10 percent Benin/Togo, 9 percent Mali, 8 percent Ivory Coast/Ghana and 6 percent Europe West. As Johnson heard the results, she teared up. "I'm so relieved to see the African part, that I really am a black woman." (Neither AncestryDNA nor 23andMe includes a "Hispanic" category, because they, like most companies that search for heritage, focus on ancestry before Europeans and Africans ever arrived at what's now called the Americas.)

I wondered how certain Ancestry DNA was about Johnson's percentages, which wasn't readily apparent on the site. I called customer service and asked several representatives where on the website I could find the company's confidence level. One said that any percentage not marked "low confidence" was 100 percent certain. Another said each percentage was 99 percent certain. When I asked that representative to check with a supervisor, she did, then returned to tell me that the company's certainty was 99.7 percent. Those answers were confusing, because behind each of Johnson's percentages was a range from which each ancestry point was drawn. For example, when we clicked on Johnson's Benin/Togo segment, which had been assigned 10 percent of her ancestry, the site showed that the percentage of her DNA from those nations could be as low as zero and as high as 21. In fact, every one of her African links showed a range that started with zero, while her Europe South's percent had a range of 9 to 33. Even the customer-service representative agreed that it was hard to fathom that the company could be so certain about the percentage when the range behind it ran to zero, which it did in four of the six geographic findings on Johnson's report. Johnson and I asked if someone higher up could call us with better answers; the representative amiably said she would put in our request and assured us that the call would come within a few hours. None ever did.

AncestryDNA's chief scientific officer, Catherine Ball, later told me that the company doesn't provide a confidence level for each percentage on its

personalized report for users, but it is 95 percent certain that the range behind each percentage is accurate. In other words, AncestryDNA was 95 percent confident that 9 to 33 percent of Johnson's ancestry was from Europe South, that 4 to 16 percent was from Caucasus and that 0 to 58 percent was from Africa. And because that "certainty" is based on the reference data set and the algorithm the company uses, even that certitude evaporates if the data set or algorithm changes. "There is no ground truth here," Ball said, "no 'I guarantee that you are 22.674 percent Italian!' These are all just statistical estimates. Every statistic has a lot of science and math behind it, and a lot of imperfection and room for improvement too."

In September, AncestryDNA updated its reference databases and changed its algorithm, and overnight, Johnson's ancestry report was completely different. Although all of her African percentages still showed that the figures could be as low as zero, this time, instead of being identified as 27 percent African, she was now 45 percent African, primarily from Cameroon, Congo and the Southern Bantu Peoples. And though the previous version showed no percentage or range for Italy, the new version said she was 49 percent Italian, with a range of just 48 to 51 percent. And that 95 percent certainty about ancestry from Caucasus? Gone. Caucasus doesn't even show up on the updated report.

Johnson's 23andMe results, on the other hand, said that she was 43.4 percent sub-Saharan African, 36.9 percent European (just over half of which was Italian), 12.8 percent Western Asian, 2.7 percent East Asian and Native American and 1.8 percent a combination of Western Asian and North African. The rest was unassigned. The company does not provide ranges, but it does give a confidence level for its result.

The ancestry-composition report from 23 and Me, with each figure to the tenth of a percent, suggests a high level of precision, but the default conclusions are remarkably speculative; they're only at the 50 percent confidence level, meaning that the ancestry composition you see on your report is as likely to be not true as true. If you dig down enough — I couldn't figure out how, so I called for instructions — you can increase the confidence level to 90 percent (meaning your geographic assignments are 90 percent likely to reflect your true ancestry, based on the company's data set and algorithm), though the figures locked at the top of the main page remain at 50 percent. At the 90 percent confidence level, 38 percent of Johnson's ancestry was unassigned (compared with 2 percent at the 50 percent level). Her Italian ancestry dropped to 7.9 percent, from the 19.6

percent Italian that showed on her main page, and the specificity of her African heritage disappeared.

I asked Scott Hadly, a 23andMe spokesman, why the default is set at the 50 percent level, given that it's so uncertain. "People want really specific information, down to which county in England they're from. We would rather be more general in the results, than to give specific results that may not be accurate. So we try to give results that are interesting to them, which they can use to explore, to see if it tells them something informative. We're not necessarily telling them, 'This is what you are.' We're saying, 'This is what the DNA says.'"

And yet, in a matter of weeks, Johnson's African roots had bounced from 27 percent to 45 percent African — and her Italian roots had been reported as 0 percent, 49 percent and 20 percent. Through it all, of course, Johnson's true ancestry, whatever it actually is, never changed.

Ethnicity is not the only area in which personal genomic testing companies have been criticized for insufficient transparency; publichealth and consumer advocates have raised serious concerns about how companies use the avalanche of genetic data they've collected from their customers. The data haul is a potential gold mine for biotech firms, insurance companies, marketers, data brokers, law enforcement and, most of all, pharmaceutical companies. Drug companies have poured hundreds of millions of dollars into at-home-DNA-test companies worldwide, banking on all that genetic data, linked to vast crowdsourcing on individuals' physical and psychological disorders, to slash the time and cost of developing new treatments and drugs, including ones tailored to an individual's unique genetic makeup. Scientists have already made incredible progress, building on the advances by the Human Genome Project. Data from 23andMe customers has revealed spots on the genome that are linked to depression, Parkinson's, lupus, inflammatory-bowel disease, allergies and some cancers, prompting Fast Company to name the business the second Most Innovative Health Company this year.

But critics say the business model that led to that heap of data is worrisome, putting at risk the privacy of the most precise identifier a person has — a concern that intensified after studies showed that it's possible to reidentify individuals from anonymized genetic databases. In July, hackles were raised again when the pharmaceutical giant GlaxoSmithKline invested \$300 million in 23andMe and gained exclusive rights to its customers' data. Much of the jump in DNA-test sales this past

year or two has been a result of deeply discounted prices (they now cost about \$99) and aggressive marketing, as companies try to lure evermore people to give up their personal genetic code. Last year on Black Friday, 23andMe's discounted test was one of Amazon's five best sellers; that same weekend, AncestryDNA reportedly sold a whopping 1.5 million kits. In 2017, in a consumer guide to DNA ancestry testing, the Council for Responsible Genetics wrote, "These come-ons promise more than they can deliver, ignoring problems with accuracy while obscuring a business model in which customers pay for the privilege of giving away valuable information to venture capitalists who expect it will make them very, very rich."

Johnson hoped the new tests would conclude that her genes aligned with who she believed herself to be. Illustration by Jules Julien

#### VI.

In the last few years, just a few miles away from Sigrid Johnson, another woman's origin story was unfolding. Her name is June Smith. Like Johnson, Smith had no idea as a child that the parents who were raising her weren't the ones who created her. Smith's neighbors knew that the 6-day-old baby who had suddenly appeared in the Smith house wasn't born to the Smiths, and they also understood that fact was meant to remain private. So for years, neighbors knew more about Smith's origins than she herself did. In their solidly black neighborhood in South Philadelphia, Smith stood out. Her skin was lighter than most, and her hair was wavy and long, "like a white girl's," she said. Though she had some good friends,

she was bullied by others. "Automatically, I was a target, because darker people thought that a lighter-colored person is more privileged," Smith told me. "I wasn't black enough."

Like Johnson, Smith learned startling news about herself when she was 16, when a neighborhood friend let slip that Smith's parents weren't her "real" parents. Smith marched inside to interrogate her mother, who chided her for asking such crazy questions. Eventually her parents confessed. They described a white Italian woman who handed over her 6-day-old infant after explaining that the father was black and adding: "I can't take that baby home. If I do, they'll kill her." Smith told me: "I never knew if my mom added that last part, but I know she never wanted me to know that woman, so she may have said it to deter me. Then again, it was part of that era. Either way, I grew up with a lot of animosity toward that white woman, the idea that she didn't want me just because I was black."

Smith's mother showed June her original birth certificate. It said she was Gail Moser. The news shook Smith's understanding of who she was. The search for identity that's so central to adolescence took on extra urgency. For starters, she said, "I couldn't imagine a white woman gave birth to me." So Smith did what she could to reconcile the two versions of her life. Her high school was predominantly white and disproportionately Italian-American, so "I began hanging out with white kids and started acting and dressing like a punk rocker, because I thought that's what white kids did. I went through a total change. I told the white kids I was half Italian. I actually felt they were more accepting of me than my black peers were."

Smith never denied she was black, but she didn't embrace it either, once she found out she was half white. It wasn't until she was in her 30s, as her self-esteem solidified, that she welcomed back her black identity. "I saw how society treated people of color, and I thought, You know, black people raised me. And so I became more conscious that, culturally, that's who I am." Had her birth mother raised her, she said, "I'd probably consider myself white, because I would have grown up in that Italian home. I would have grown up with Italian ways, Italian foods, Italian whatever. But because of how I was raised, African-American, this is who I am. And I accept that, and I'm proud of it."

Although her cultural identity was clear by then, she still yearned to know about her biological family. She wrote and self-published her autobiography in 2014. The last line says, "I am the product of someone, but the reflection of no one."

June Smith, Johnson's sister, who also grew up in Philadelphia. Illustration by Jules Julien

#### VII.

AncestryDNA and 23andMe give their users the option to have their DNA profile uploaded to see if any genetic relatives pop up. Johnson did so, curious but expecting little. AncestryDNA promptly revealed two women whose DNA indicated that they were "close family," which Johnson thought meant they were her first cousins. She reached out to them. One never responded. The other was June Smith.

In late August, Johnson and Smith connected by phone. After introducing themselves, Smith asked Johnson if she was adopted. Johnson said yes. Smith asked, "Was your biological mother Ann D'Amico?" Johnson was startled that this stranger would know such a thing. Smith then asked what her birth name was. When Johnson said, "Joan Moser," Smith started to cry. She said, "I've been looking for Joan Moser — for you — all these years."

Each knew she wasn't really a child of Eric Moser, D'Amico's white husband, despite his name being on their birth certificates. These babies had black fathers, presumably two different men, given that Johnson and Smith's DNA results indicate that they are half siblings, not full ones.

Smith told Johnson that she discovered her first Moser connection in 2015: a half sister named Nancy Moser, who told her that D'Amico had six white children, all of whom D'Amico raised. Moser said that their parents had died, and that on D'Amico's deathbed, their mother conceded that she had

"other children" and added, "I wonder if they made it. ... "

Smith had been swiftly enfolded into the Moser family, a comforting but also confusing experience. The siblings had told her she wasn't the only biracial child. They told her that three years before Smith's birth — when at least some of D'Amico's children were already in grade school — D'Amico gave birth to a baby she named Joan. After two or three months, according to Moser lore, someone told D'Amico's white husband that Joan, whose skin was darker than her siblings', couldn't be his child: She was black, so she had to go.

Smith described how welcoming the Moser siblings had been and how the eldest told her she thought Smith might have a twin sister, though she has never shown up on Smith's AncestryDNA page. But a few years back, AncestryDNA linked Smith to a niece whose deceased father, Thomas, was another biracial child of Ann D'Amico. The Mosers welcomed his family too.

After Smith and Johnson talked, Smith alerted the Moser siblings that Joan Moser was alive and well. Johnson was flooded with warm texts, phone calls and Facebook messages from the Moser family. "All at once," Johnson said, "I got: 'I'm your brother!' 'I'm your sister!' 'I'm your cousin!' 'I'm your sister's daughter!' "Though they were total strangers, they embraced her as they had Smith, writing: "Hi honey. I'm one of your sisters. ... Love you." "I'm glad to know you're in our family now." And "I accept you no matter what color you are and I can't wait to meet you. Just remember you are accepted into our family because you are family, and we love you." When Johnson saw a photo of Thomas, she was stunned by how much he looked like her son, Ron. That family resemblance made the connection all the more real.

"It all hit me real hard," Johnson told me. "I cried and boohooed like a baby." She went from being an only child to a woman with a slew of siblings, nieces and nephews. After two days packed with catching up on 65 years of family, Johnson stopped answering calls and reading texts. Overwhelmed, she went to church to calm her soul and express her gratitude. And then she dove right back in with her new-old clan.

Since then, she still sometimes feels dizzy as she tries to replace a long-familiar identity with a welcome but much more complicated one. She marvels that for all those decades as a "single child," she had siblings galore, living only a few miles away, and she never knew it. One of them even looked like her and had been told the same lie about her origins, and

then the same gut-wrenching truth. Smith so deeply understood Johnson's experience, because she had lived it herself, as a sister would. A real sister. Finally. Those realities were far more mind-bending than any of the ancestry findings, with their wildly different percentages and ephemeral certainties.

Johnson and Smith talk two or three times every day. "We're stuck on each other," Johnson said.

She sighed. "You turn 65, take a DNA test and find out your whole life is a lot different than you ever thought it was."

