

The happiness project

BBTN: Chemistry in baseball

*This story
appears in
ESPN The*

Magazine's Oct. 14 Bay Area Issue. [Subscribe today!](#)

CONNIE AMAREL LIVES in Lompoc, Calif., near Santa Barbara, where she writes children's books and keeps a pet tarantula. In mid-August, with the **A's** coming off a 16-day stretch in which they blew a six-game lead in the AL West, Amarel and her husband made the five-hour drive to Oakland to see her favorite team play the Astros. She brought 300 homemade cookies, peanut butter with chocolate kisses, and those cookies now sit on a tray on a table in the center of the A's clubhouse. A few of them do, anyway. Maybe 10 remain.

"I started going to A's games in the late 1980s," she says. "They were in a big slump, and I thought, I'm just gonna make some good-luck cookies. I grew up in Ohio, and I guess when somebody was having a hard time you made them cookies."

After her first batch, she saw Terry Steinbach, then the A's catcher, signing autographs, and she asked if he got her treats. "Those helped me hit a home run," he told her. "Bring some more." So she did, and does. She'll bake 5,000 cookies for the A's this year, a variety of recipes that she punctuates with yellow and green M&Ms ordered in 5-pound shipments from Las Vegas. With every batch, she says a prayer: "Please help the A's. If it's your will."

A cute story. But imagine, for a moment, that Steinbach wasn't just flattering her. Imagine that those cookies made him a little happier. Imagine that the chemicals in his brain responded to emotional warmth and actually made him, to at least a tiny degree, a better athlete. To a certain extent, we can do more than just imagine; there's actual science behind this notion. Happy truck drivers are less at risk to crash. Happy salesmen sell a third more products. Happy

students learn better. Endorphins, released by feelings of love, are a natural painkiller. Hugs reduce stress.

So now imagine that Connie's 300 cookies nudge one Athletic into taking, rather than swinging at, one nasty slider. That over the course of the season, those 5,000 cookies help the A's produce, or prevent, just one single run. Teams are willing to pay about \$500,000 per run on the free agent market, according to most player-evaluation systems. The A's get that run for free and can spend that \$500,000 on a second-round draft pick, a top Latin prospect or starting third baseman [Josh Donaldson](#). So now we have to imagine that those peanut butter cookies in the middle of the room might not just be a cute story -- they might be Oakland's secret weapon.

A decade ago, when Michael Lewis published *Moneyball*, advanced baseball analysis was simple. Sabermetricians saw the sport as a series of individual battles between pitcher and hitter, which made it far easier to analyze than football's or basketball's moving and interconnected parts. The secrets of the Moneyball A's -- OBP is better than batting average; pitchers should be judged mostly on strikeouts and walks; context-dependent stats like RBIs, wins and saves should be ignored -- were discoverable by anybody with access to box scores and an open mind. Sabermetrics were mostly about limiting decisions to what could be measured.

But today, with World Series contenders openly embracing advanced analytics, the Moneyball movement is increasingly about imagining what might be measured. Big Data has replaced box scores and helped illuminate the cooperative aspects of baseball: Defense is a collaboration among the pitcher, clusters of defenders, the bench coach who positions them and the advance scouts who guide those bench coaches. Strikes and balls reflect the pitcher's command but also, to a startling degree, the catcher's ability to frame the pitch.

But it's clubhouse chemistry that takes collaboration to its distant terminal, one that front offices can't necessarily ignore: If the gregarious lefthanded reliever

"helps" the third baseman hit two extra home runs -- if inducing happiness can be measured -- then who should get paid for those two home runs? The man who hit them or the muse?

"What I can tell you unequivocally is that GMs and front offices are actively studying and trying to find ways to quantify clubhouse chemistry," says [Gabe Kapler](#), a former player who now consults for the Rays' scouting and player-development departments. "Call me naive, but I believe there's something to it."

What we have then, 10 years after the book was released, featuring the team it made famous, is the ultimate Moneyball question: How much does happiness matter?



Michael Zagaris/Oakland Athletics/Getty Images Oakland outfielder Josh Reddick celebrates a moon shot with a jog through his teammates' "home run tunnel."

CHEMISTRY CAN BE ENGINEERED

There are two (nonexclusive) ways to look at the past two A's seasons, in which

the team has wildly outperformed expectations and won more games, through mid-September, than anyone else, claiming back-to-back AL West titles. One is to conclude that the A's have a fantastic roster, deep and balanced, put together brilliantly by Billy Beane and his staff for less than the cost of some teams' disabled lists. The other is to conclude that they have had fantastic chemistry -- a slippery narrative trick most often used in retrospect to explain surprises. In this case, though, it's hard to ignore what former Oakland pitcher and abiding stathead [Brandon McCarthy](#) said in March at an analytics conference. He told the audience that the A's, 94-win division champs the year before, would have been "at best a 70-win team" without [Jonny Gomes](#) and [Brandon Inge](#), a pair of part-time role players. If that's true -- no small if -- then clubhouse chemistry can be worth more than \$100 million in superstar free agents.

In Tampa Bay, manager Joe Maddon runs his clubhouse like a camp counselor, bringing in live penguins to help the club "chill," mandating group dress-up days to build camaraderie and taking the entire team out for drinks (on his dime) to get their minds off losing streaks. Other teams donate the 25th spot on the roster to a veteran presence like [Jason Giambi](#) or [Mark DeRosa](#), each perceived to be a chemistry superstar even as the on-field utility of the players disintegrates. Ultimately, though, as one NL front office executive concedes, there's not much a team can really do except try to sign good dudes, avoid bad dudes and hope that the magic just ... happens.

That's all wrong, says Katerina Bezrukova, an assistant professor of group dynamics at Santa Clara University. After examining five baseball seasons with Rutgers associate professor Chester Spell, she concluded that chemistry is not a magic trick. It's a math problem. Central to her research is the idea of fault lines, the divisions that keep some employees isolated from others. Think about fault lines like cliques in high school: If five friends all love cheerleading and five other friends all love marching

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band, then those 10 people are divided into two groups that don't interact. But if girls from each group are also into, say, running the school's canned-food drive, there is now a third, overlapping group. And if there's a conflict between a cheerleader and a flutist, there are networks for resolving it.

Bezrukova and Spell tracked every MLB team's demographics: age, race and country of origin, along with salary and position. They found that teams with lots of overlap -- say, the three Venezuelans on the team who play different positions; the high-priced veterans who speak different languages -- outperformed teams with severe fault lines by about three wins per year. Three wins is far short of McCarthy's claim, but it's about as big as the impact of baserunning, according to Baseball Prospectus. And teams typically spend more than \$15 million to add three "wins" on the free agent market.

We had Bezrukova and Spell run a fault-line analysis of this year's A's roster, along with that of the 2013 Angels, preseason favorites to take the division. The researchers found a big gap in Oakland's favor and signs of isolation in the Angels' clubhouse. Without talking to a single player, scouting a single fastball, looking at a single stat or really even knowing all that much about baseball, the researchers would have predicted that the Angels would disappoint and the A's would exceed expectations. Which is exactly what's happened this year.

The A's are as low-budget as you've heard: Before one August game, reliever [Jesse Chavez](#) got stuck outside the clubhouse when the door handle broke. In the home dugout, there are five layers of peeling paint exposed in some places and an empty light fixture. The highest-paid player is making as much as the Angels' seventh-richest player. Even the corporate sponsor seems like a too-obvious metaphor: Overstock.com, which pays for the stadium's naming rights, is



Michael Zagaris/Oakland Athletics/Getty Images
Outfielder Coco Crisp is as fun a teammate as his name suggests.

a discount retailer that liquidates unwanted merchandise.

All of this puts the A's at a competitive disadvantage, but it seems to benefit the clubhouse culture. Oakland, out of necessity, signs players with limitations; out of necessity, the team sometimes asks them to fill holes they're not used to. That means plenty of platoons, which keeps egos in check, and players being asked to change positions: Donaldson is an infielder who was once a catcher; [Brandon Moss](#) is an infielder who was once an outfielder; [Sean Doolittle](#) is a reliever who was once an infielder. Overlapping roles, no cliques.

Oakland trades its stars before they leave for free agency, so only four Athletics this summer were actually drafted and developed by the team. It's a culture of baseball immigrants, the AL's melting pot. Nobody owns the clubhouse. The music that plays there before game time reflects this shared ownership: Rather than the house, hip-hop or country booming out of most clubhouses, the A's usually listen to classic vinyl or VH1-style mom pop, inoffensive background music that nobody could really object to (or feel territorial about). It must be the only clubhouse that plays Jethro Tull.

It's "a unique bond we all have," says Moss, a journeyman who joined Oakland in June 2012 and has hit more than 45 home runs since. "A lot of clubhouses you walk into, they're like, 'Why are they calling him up, he hasn't done well; why they giving him another chance?' I walked in here and everybody is happy to have you. There's a lot of guys here who had to fight a lot, that have never been on the easy road. I refuse to believe that's a coincidence."

CHEMISTRY IS NOT INVISIBLE

In the 11th inning of a mid-August game against the Astros, Doolittle puts a runner on base and allows a double to left-center. Centerfielder [Chris Young](#) bobbles the ball, and what looks to be a play at the plate becomes a run. Doolittle takes the loss.

There is no music in the clubhouse afterward, no conversation, the only sounds the clinking of plates and silverware as the players bus their own dishes. Doolittle slumps onto a couch at the far end of the room. Young appears from the showers.

"Hey, man, I messed that ball up," Young tells Doolittle. "There would have been a play at the plate. I'm sorry."

"I appreciate it," Doolittle says, "but I threw a thigh-high fastball right down the middle."

This, it seems fair to say, is chemistry. Young is a veteran outfielder, an African-American, a former top prospect, a former All-Star, a newcomer to the organization and the highest-paid player on the team at \$8.5 million this year. Doolittle is a reliever with one year of service time, white, homegrown by the A's and making about one-seventeenth of what Young is this season. Yet alone in the quiet end of the clubhouse, they connect with each other and show that they have each other's back.

"

It would be silly to deny that there was something involved. But there wasn't a huge lesson. ... It just happens.

" -- Athletics assistant GM David Forst

There's no GM around to see that conversation and certainly no analyst around to file it into a spreadsheet. This is the problem Russell Carleton spends a tremendous amount of energy on. Carleton is a psychologist by day, but he's also a prominent sabermetrics writer, and for two years he worked for the Indians. (Nondisclosure agreements prevent him from talking about his work there.) At Baseball Prospectus this year, he has tried to find statistical evidence that Inge, a 36-year-old utilityman, makes his teammates better, that young players benefit from veteran mentors, that chemistry (and happiness-related performance) is affected by free agent signings. In all cases, the results were mixed: Inge's teammates, for instance, hit about 0.7 percent more home runs than expected when he's around but also strike out more. (This vastly oversimplifies Carleton's caveat-heavy conclusions.)

"It's tempting to think that it's impossible to measure team chemistry," Carleton writes. "I personally think 'impossible' is the wrong word. It's not a physics problem; it's a logistics problem." His idea for how to measure the presence and value of chemistry is relatively simple: Just ask players to list which teammates they're closest to. Map the links. Each player should share some link to every other. Where there isn't a link, make efforts to break down barriers. To test whether happy players hit better, just ask them, before every game, how happy they are. Establish a baseline for their happiness, track changes and track performance.

Yes, this would be awkward, and therefore not likely. "Don't tap on the glass at the zoo" is how one insider put it. But Michael Kraus, a psychologist at the University of Illinois who found a correlation between personal chemistry and team success in the NBA, insists you can quantify good clubhouse guys in baseball. Just keep a camera on the dugout and tally frequency and duration of social interactions. "You would be able to see relationships between individuals that would help you decide who is really part of the team and who is feeling marginalized. You could find networks. You could see certain people not interacting, and you could decide to fix that somehow."

WHERE MONEYBALL MEETS THE HOLY SPIRIT

Whether teams are willing to look at players like lab rats is an open question. Then again, maybe they already are: Post-Moneyball front offices treat their research like state secrets, but analysts do hear whispers about data-driven clubs trying to do chemistry better. Several teams have privately solicited chemistry-related research ideas from sabermetricians, and one NL stat-friendly front office has tried to "scout" chemistry by having minor league coaches grade opponents on personality characteristics.

"I heard the [Red Sox](#) were doing some things with it," one club official says. Perhaps not coincidentally, Boston's recent moves have centered on "character guys" (including Gomes) after a contentious 2012 season. GM Ben Cherington

told the Boston Herald this spring that the team makes 10 to 15 calls before acquiring a player, looking for insight into his personality. But he also acknowledged the club's limitations: "I just don't know how to predict it and drill down and engineer it."

The [Indians](#), a team that rivals the A's in statistical devotion and payroll limitations, have put brainpower into trying to quantify chemistry but without much success that they're willing to admit. "We'll continue to look at it," says GM Chris Antonetti. "To figure out all those interactions, theoretically you would derive a ton of value from it."

The twist is that these A's -- the team that McCarthy says has profited from good vibes -- were constructed by a front office that publicly downplays the value of chemistry. "I'm convinced," Beane told AthleticsNation.com last winter, "that chemistry and all that are byproducts of winning."

And yet: "You couldn't be around that [2012] team without having your views affected," assistant GM David Forst says.

"It would be silly to deny that there was something involved. But there wasn't a huge overriding lesson like 'This is how you put that group together.' It just happens. Nothing was solved by the 2012 A's."

Maybe nothing will be solved by this year's team either, but the usual metrics can't explain everything about its run to the AL West title. The morning after Young's botched play costs his team a win over the Astros, there's a sign on the clubhouse door: Turn Door Handle Only 3/4. (The door won't be fixed through the rest of this nine-game homestand.) Connie's cookies are gone, but there's a plate of desserts made out of Fruity Pebbles, provenance unknown. Reliever

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Ezra Shaw/Getty Images Despite the second lowest payroll in MLB over the past two years, the As have the highest win percentage in baseball -- and two division titles -- in that span.

[Jerry Blevins](#) walks past in garish Zubaz workout pants, a throwback to the 1990s that a bunch of A's have been wearing. Warren G is playing, then Tom Petty, then Color Me Badd, another day of Songs Nobody Hates. The volume is up, and when the next song starts, an Aerosmith anthem, a bunch of the guys can't help it. "Livin' on the edge!" they holler.

Three hours later, Young leads off for the A's. He rolls over a pitch, hitting a routine grounder to shortstop, but busts it to first base. He turns it into a bang-bang play and the call goes his way. He scores one pitch later on a double.

"I mean, I think almost every team, first at-bat of the game, 12:30 in the afternoon after playing an extra-inning game the night before, probably not running that out," Doolittle says later. "He has every reason to just throw the bat and be like, 'Here we go again.' He busts his ass, leads to a three-run inning." The A's win 5-0, avoiding a sweep by the Astros.

Is there data in that play? Maybe. Maybe the narrative is of a happy group of misfits bouncing back from their most frustrating loss of the year to come up huge in a must-win game. But maybe the narrative is that without Gomes and Inge, the leaderless A's choked and lost two out of three, at home, to the worst team in baseball. Same facts, opposite conclusions, both true.

Ultimately, chemistry remains, for most teams, baseball's holy spirit: too significant to ignore, too abstract to touch. A gift, by the power of which a team may abound in hope. "Maybe somebody will try to figure out a way to classify personalities and quantify the impact of those," Bill James once said. "I doubt that's going to happen in my career.

"But maybe the next one."

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