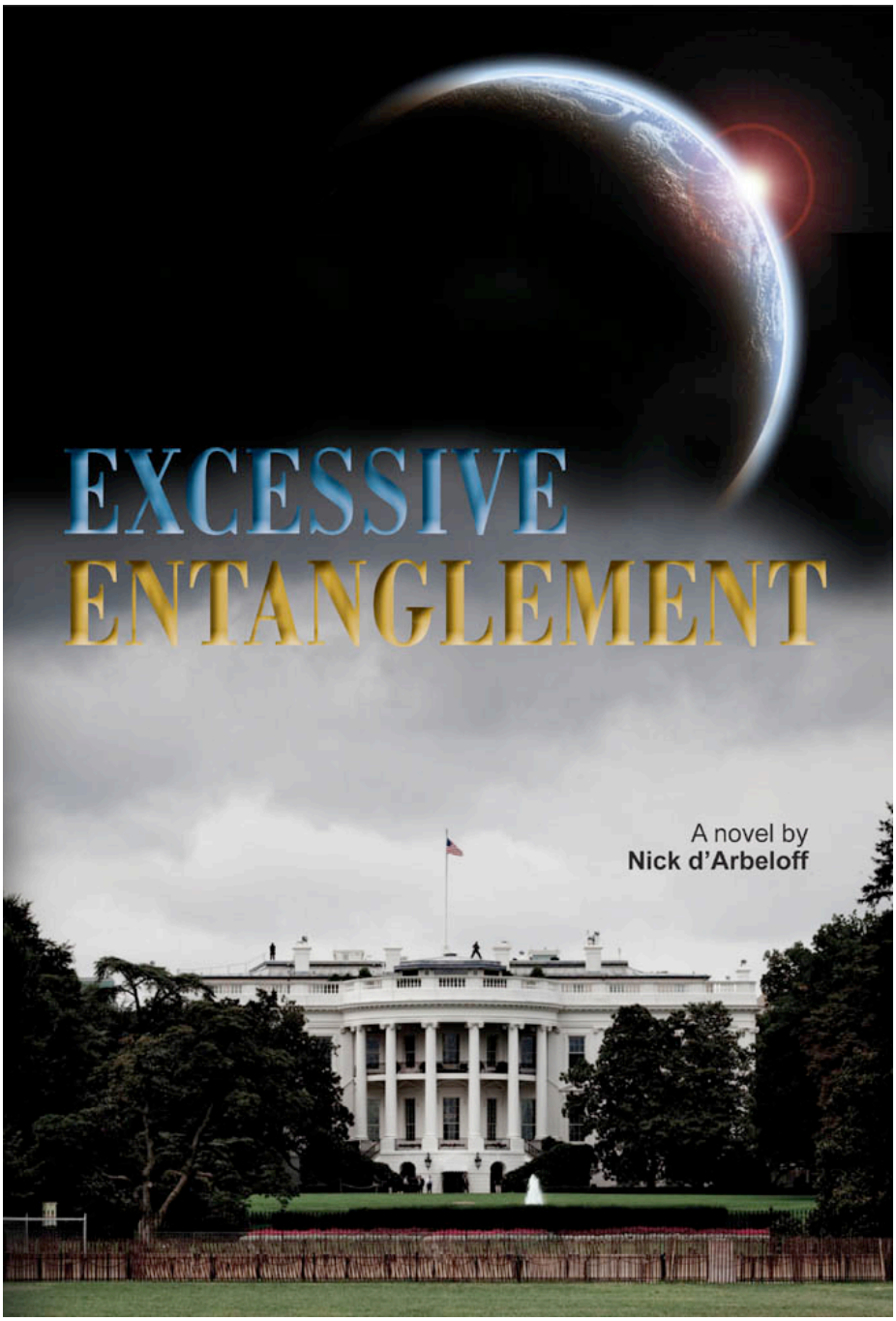
EXCESSIVE
ENTANGLEMENT
A novel by
Nick d'Arbeloff

Excessive Entanglement

By

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First Edition

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ISBN 978-0-6152-4477-8

In its 1971 ruling on Lemon v. Kurtzman, the Supreme Court outlined a three-part test for determining if a government action violates the First Amendment's separation of church and state: The court ruled that, first, the government action must have a secular purpose; second, its primary purpose must not be to inhibit or to advance religion; and third, the action must not precipitate "excessive entanglement" between government and religion. This decision, known as the Lemon test, is now the standard by which government actions are judged for First Amendment compliance.

1.

Devlin McGregor stared at the screen in front of him. He had been contemplating the numbers and readings for what seemed like an eternity—or two. Yet still his brain was rejecting the obvious conclusion. He was scared—of being wrong or of being right, he wasn't entirely sure.

He got up, stretched, and walked to the coffeepot. He chose the cleanest of four unwashed mugs, poured a half-cup of burnt coffee, took a sip, and returned to his desk. And stared again.

Something must be improperly calibrated.

Once again, for what must have been the tenth time, Devlin looked at the instruments and ran through their configuration, checking off each setting like a pilot before a flight. Nothing amiss. To the best of his knowledge, everything as it should be.

The data must be correct.

2.

The early morning sun penetrated the trees in Providence Park, giving the yellows and reds of the changing leaves a glowing luminescence.

Suzanne took a deep breath, inhaling autumn as she gently pushed the baby carriage along the path.

This was her favorite part of the day. There was enjoyment in the frenetic, unpredictable, high-speed blur that was her workday, but she cherished this little 15-minute sliver of relaxation and contemplation.

A jogger passed, nodding in silent greeting; two squirrels screeched at one another in a nearby tree. The sound of falling acorns had been a relative constant for the past couple of weeks.

Her baby stirred, spasmodically shaking his tiny fists before settling back down into quiet slumber. She reached down and gently repositioned the blanket around his shoulders. She stared into her son's peaceful face; the love she felt for him was overwhelming. She wished that she could just stop time, suspending the rush of civilization so that she could immerse herself in nothing but his life, his needs, and his rapidly growing awareness of his surroundings.

But that was not an option. She looked at her watch: time to head back. She gently tilted the carriage, pivoted counterclockwise, and headed left down a path towards her home. By this time, the baby's nanny would have already arrived, and would be preparing bottles for the day ahead.

She came to the edge of the park, exited and came to a stop at the crosswalk. The sight and sounds of morning traffic caused her blood pressure to begin its slow steady rise from a state of relaxation to what would be the day's first peak of tension as she read emails before departing for work. She was adept at controlling the pressure, and better than most at maintaining outward calm—she had to be, but serving within the administration made it nearly impossible to claim any semblance of true inner tranquility.

The light changed and she crossed, then took a side street which led to another where she lived. She passed a parked car in which two men sat; the driver reading a newspaper, the other a book.

She closed her eyes for a moment, absorbing the sun's first warming rays into her Fairfax, Virginia neighborhood. A dappled pattern of elongated tree shadows played on the townhouses to her left as she walked.

At last coming to her own street off to the right, she smoothly lowered the front wheels of the carriage from the sidewalk to the pavement, then the rear, and proceeded across.

As always, as Suzanne approached her house, her brain began to churn with ruminations of the tasks and projects that would demand her attention over the course of the day. She hadn't noticed that the car with the two men had

pulled silently out into the street behind her, until the hybrid engine switched from electricity to fuel and accelerated. Her thoughts of work vanished in an instant, replaced at first by a burst of confusion; *what is this idiot doing?*

But within a fraction of a second, thought itself was supplanted by raw adrenaline and instinctual self-preservation. As she broke into a run, the car bore down on her with unmistakable intent.

For the last half second, time stood still. Her fate seemingly inescapable, her brain formed a dense stream of emotions and thoughts: mourning the loss of motherhood, the sacrifice of career, never seeing her son walk or grow into a young man, the little boy's irresponsible father taking custody. All of this congested as one overflowing mass within her consciousness until, at the last possible moment, Suzanne refocused her energies and lunged forward. Simultaneously, the car strangely swerved left, the passenger-side mirror missing her right hip by no more than an inch or two.

She pulled up, heart racing, confused but overwhelmed by the realization that both she and her little boy were alive and safe. She turned to see the car that had come so close to ending her life, but saw only a taillight disappear as it turned left and out of sight.

She looked down on her son, who was—incredibly—still sleeping. Suzanne reached a hand into the carriage to adjust his blanket, but pulled it back, suddenly feeling a sharp pain in her side like the sting of a wasp. She looked down and spastically brushed the insect away. Another sharp pain erupted in her chest as she noticed that on the street by her feet was not an insect at all but some kind of tiny dart.

As her vision started to blur and her brain and muscles relinquished control of her body, she released her grasp on the stroller and fell helplessly to the pavement.

The carriage started to roll forward, very slowly at first, then gathered momentum as it accelerated down the street. Suzanne tried to reach out, but could not; as she fought desperately to keep her eyes open and trained on the speeding stroller, she felt the last of her body's energy fade away. The carriage slammed into the side of a parked truck, its rear wheels lifting a foot off the ground upon impact. The baby was thrown forward, but the buckled safety straps held firm; his forward motion was arrested, and he was thrown back down, deeper into the carriage. No sound emanated from the half-enclosed cocoon for one or two seconds, but then erupted in force.

The now sunlit neighborhood woke to the sound of a baby screaming with fear, panic, and confused rage, while its mother lay in a twisted heap nearby.

Suzanne Ortega, Deputy Director of White House Communications, was dead.

3·

Devlin McGregor walked down the polished hallway toward the frosted glass doors of the facility's executive conference room. He was accompanied by his boss, a jolly, heavyset NASA veteran named Pete Michaels.

Devlin had worked for Pete for a little more than eleven years, or roughly half his career at NASA. Pete had been a great boss. He'd supported Devlin from the start, steering him onto projects where Devlin's natural abilities could flourish.

Up ahead, Devlin watched as two suited members of NASA's top echelon opened the doors and entered. He was nervous. Pete knew it.

"Keep in mind, Devlin: these people are no smarter than you, but they do know the game. When they challenge your assertions, it's not personal. They're just trying to cover their bureaucratic butts, and make damn sure they don't get everyone all worked up over nothing."

"I know, I know. Thanks Pete. I appreciate all the help you've given me in getting ready for this."

"Hey, my butt's on the line too, you know."

Pete grinned at Devlin as he grabbed the gleaming stainless steel handle and swung the half-inch-thick glass door open, then gestured for Devlin to enter.

30 years earlier, as a freshman at Harvard, Devlin had initially believed that everyone around him was at least three times smarter than he—a bumpkin from Garretsville, Ohio. He had held back in class, afraid that his parochial, small-town upbringing would cause his class contributions to be off-key and subject to ridicule. However, as he listened to others, he began to realize that his classmates had no particular lock on insight, and that his own thoughts seemed more logical, better arranged than those of his peers. It wasn't long before he emerged from his shell and became one of the stronger participants in most of his classes; his grades followed suit.

This self-confidence had stayed with him. Though not often called upon to deliver presentations to NASA management, he was well-prepared, and—despite some anxiety—was actually looking forward to it.

* * *

The meeting was going well. Devlin had presented his methods, and was now moving through his preliminary data.

"As you can see here," Devlin gestured to one of two visuals of the newly discovered planet on the large screen, "2033 DA_{16} has a circumference of 29,887

miles, roughly 20% larger than Earth, while the rotational speed at the equator is remarkably close to ours, at 1,195 mph. This means that the length of a day on the planet is approximately 25 hours."

Devlin moved on to a new set of images. "Now, the planet's orbit around its sun is fairly slow; one year is 528 earth days. Since the planet's axial tilt is only 17.8%, versus 23.4% for earth, the seasons should be less pronounced."

"Mr. McGregor, what do we know regarding water coverage on 2033 DA_{16}?" asked a rotund, well-dressed man seated at the table, as he gently ran his thumb and middle finger around the perimeter of his meticulously groomed Vandyke beard.

"Our data doesn't give us a precise figure at this point, but we're estimating that land and ice cap comprises 40% of the planet's surface. However, one feature of the planet I find quite interesting," Devlin noted, "is the configuration of land mass. While our current technology does not give us an exact picture, we believe there are more than 15 separate continents fairly evenly distributed across the planet."

Devlin drew a deep breath, brought up two final images, and prepared to announce the finding for which the group had been assembled. Devlin pointed to one of the images.

"On the left is a chart showing the atmospheric make-up of Earth: 79% nitrogen, 20% oxygen. On the right is the atmospheric make-up of 2033 DA_{16}: approximately 75% nitrogen, 23% oxygen."

Devlin looked at Pete, then at the group of executives, making eye contact with each. As he'd expected, his nervousness had abated, and he'd quickly found himself enjoying the event. *And now the finale.*

"Unless further analysis undermines the data collected thus far, it appears that the planet would support life as we know it, and is therefore fully habitable by human beings."

One of the executives shook his head in wonder, then spoke up.

"Amazing, truly amazing. Mr. McGregor, as the discoverer of this planet, have you given thought to what it might be named?"

"I have."

Interpreting this softball question as indication that the meeting was drawing to a successful close, Devlin paused for effect.

"I would like to call it Cerulea."

"Cerulea," the man repeated slowly, rolling the name over in his brain. "And why is that?"

"Well, it's quite simply the most beautiful bright blue sphere that I've ever seen."

4·

An aide knocked twice, heard a muffled invitation to enter, then opened the door and stuck his head in.

"Madam President, we'll be touching down in about 15 minutes."

"Got it. Thanks, Jay."

The aide departed, closing the door behind him. President Virginia Belknap looked out the window of her cabin, her mind elsewhere, then back down at the half-finished eulogy on her desk.

She stared at the words, holding her forehead with thumb and forefinger. Suzanne's death seemed such a tragic waste. The Virginia police, working with the FBI, had concluded that the cause of death was cardiac failure brought on almost instantaneously by the injection of Batrachotoxin R, one of the most lethal and fastest-acting poisons on the planet—derived from the secretions of a certain species of frog found in Central and South America. It had entered her bloodstream via a microdart, an increasingly common projectile munition developed by the CIA but now widely used by hunters and animal control professionals for killing or subduing large mammals. They'd also noted that, with no witnesses—and no murder weapon, the likelihood of finding the perpetrator was extremely low.

The President sighed deeply. Suzanne had been an incredibly loyal and capable member of her staff—and a friend. Perhaps because of that, she wanted to transcend the usual platitudes, and say something a little more meaningful, but it wasn't coming to her. She thought of the many times the two of them had worked together on finding just the right phrase for an important speech, and smiled at the irony. Then, thinking this over, it occurred to her that she knew exactly what to say; she picked up her pen and began to write.

After filling up several pages, she felt the whine of the jet engines give way to the other-worldly, high-pitched hum of the electric lift fans as the aircraft prepared to land. The President took a final sheet of paper and wrote one last sentence. She re-read the final few paragraphs, then looked at her watch; they would be right on time.

Although Suzanne's family was honored to have her speak at the funeral, the President was also keenly aware that her presence could be a logistical nightmare, making such events far less intimate than they might be otherwise. But Suzanne Ortega had been one of her top speech writers for more than three years. And even though it meant that she would miss the final press conference of the OAS summit meeting in Caracas, it was unquestionably the right thing to do.

Besides, the absence of the U.S. President would shift the limelight to some of the lesser known leaders of the Organization of American States. As a result, they'd be forced to make some firm commitments on the summit's key

initiatives before a world audience. The issues involved were age-old, but the relative importance of each had changed considerably.

Terrorism, an unpleasant and accepted constant in daily life, was no longer confined to Islamic fundamentalists. It had become an inefficient and inappropriate means to an end for a sizable number of both religious and secular organizations, including racist groups, eco-terrorists, drug cartels, and opponents of ever-increasing globalization.

But the threat from terrorism had met with substantial competition. With increasing frequency, it was eclipsed by the perils of nature. Natural disasters were tragically common; global warming—in combination with a growing human population approaching eight billion—was generating tremendous stress on the planet's ecosystems and natural resources. Just one such disaster typically took far more lives than most terrorist acts put together.

Terrorism was also overshadowed on occasion by disease. The century had already witnessed one devastating pandemic, in addition to several localized epidemics. Despite the world's growing knowledge regarding contagion and containment, shorter winters and longer summers had allowed many previously unthreatening pathogens to propagate across wide areas of the globe.

The aircraft came to a rest on a field adjacent to a cemetery on the southern edge of Suzanne's hometown of Red Cloud, Nebraska. The President grabbed her suit jacket from a hanger behind her desk and put it on; she folded the eulogy and placed it in an inside pocket. Through the window she could see her Secret Service team assembling to escort her to the graveside service.

Arriving directly at her destination still took some getting used to. Air Force One, the huge 797 that had been the President's primary means of long distance travel for her first two years in office, had been relegated to overseas flights and relabeled Air Force Bravo.

Its replacement, known as Air Force Alpha, was designed for vertical take-off and landing and was capable of traveling roughly twice the speed of sound. Its technical name was the SB-3 FanJet. The plane was equipped with two large jet turbines for supersonic travel, but converted this power to electricity for take off and landing, driving 12 large-diameter lift fans located in the wings and underbody of the fuselage. The technology had been developed by Sonic Blue Aerospace, a start-up company out of Pasadena whose founder had helped to engineer the Joint Strike Fighter, the military's primary workhorse for over 20 years.

While the aircraft offered only marginally more interior space than the huge Lockheed VH-71 marine helicopters that used to ferry the President to Camp David and local venues, its tremendous speed, combined with its VTOL capability, meant that she could walk out of the Oval Office and be virtually anywhere in North America in under three hours.

There were no crowds to greet her on this occasion; she walked singly down a set of steps and onto the field. The President shivered slightly—less from temperature than from the cold and lonely realization that this event marked Suzanne's death, a close colleague and friend who she would never see again. With Secret Service agents on all sides, President Belknap proceeded on toward the gravesite.

5.

Chief of Staff Roger Tucker entered the Oval Office a few minutes before 2 pm. He sat on the far sofa in front of the fireplace. He always chose this position; he could see both doors as people entered and, during boring meetings, of which there were many, he could look out the window and daydream a bit.

He was reviewing some briefing papers on his tablet for his 4 o'clock when President Belknap entered. He stood instinctively without immediately pulling his eyes from the report.

"Hey Roger. Coffee?" she asked, walking over to a sideboard.

"Madam President. Please." He placed his tablet on the sofa, and walked over to where the President was pouring two cups of coffee. She handed one to him. "So how was the funeral?" he asked.

"It was quite touching, actually." She paused, reflecting on the event earlier that morning. "I've got to say, the plains of Nebraska somehow add a desolate poignancy to a funeral service." Then, as if wrapping up the event for long-term storage, she added crisply: "Very sad."

"I'll bet," Roger offered. He'd been fairly close to Suzanne as well, but they'd decided that both of them attending the service would be too much—not to mention inefficient.

Ginny Belknap leaned against her desk, sipped her coffee, and changed the subject. "So. What's this all about. A new planet?"

"Yes, Ma'am. But, if I'm not mistaken, there's a little more to it. Cheryl didn't offer much detail, but it was clear that there's something special about the discovery."

"How so?"

"Not entirely sure. She was somewhat cryptic when I pressed her, and said she'd rather explain in person. She's bringing the discoverer along with her."

At this point in his career, Roger was fairly unflappable, and hardly prone to excitement. But after one fairly uneventful year into the President's second term, he'd found himself intrigued by Cheryl's call.

He'd served Ginny Belknap for 5 years. Initially, when the President-elect had approached him during her transition, Roger had tried to convince her out of it, reasoning that the appointment of a gay chief of staff would start her administration off on the wrong foot.

She, however, dismissed the concern as old-fashioned, and wouldn't be denied. Over half a decade, they'd dealt with natural disasters, economic crises, raging conflicts in developing countries—a colorful assortment of cataclysmic events.

It was widely held in Washington that they made a formidable team. Although, despite the President's willingness to pour him a cup of coffee now and then, he held no illusion as to who was the boss. It was her steady intellect and diplomatic talents that had made the difference—as they worked to convert problems into political success.

The President's secretary knocked, and then opened the side door.

"Madam President, Cheryl Wald and Devlin McGregor are here."

"Thanks, Mary. Show them in."

The President glanced at the daily schedule on her desk, and quickly consumed a few pertinent facts regarding McGregor's background.

Cheryl Wald and Devlin entered the Oval Office. Cheryl was a tall woman with short hair and sharp features. She wore a non-descript olive suit, but somehow made it look like the latest thing. She was smart and incredibly competent; Ginny Belknap had appointed her NASA Administrator mid-way through her first term; though they had not had ample occasion to interact, Ginny liked her a great deal.

"Cheryl, great to see you."

"Likewise, Madam President. Roger; how are you?"

"Good, Cheryl. Please..."

He gestured to the sofas. Since Roger's tablet occupied the center cushion of one, Cheryl and Devlin walked to the other with its back to the door. They all remained standing.

Cheryl Wald introduced Devlin McGregor; they exchanged salutary nods. The practice of shaking hands had been banned during the pandemic earlier in the century. It was well-documented that the practice had been the single greatest contributor to the spread of the disease. Intended as a temporary measure, health officials urged all people in all nations to continue utilizing an alternative greeting, even after the pandemic subsided, and most did. The handshake was now fairly rare—reserved for special occasions and ceremonial greetings.

"I believe we overlapped years ago at Harvard," the President said warmly to Devlin. "You graduated in '07, is that right?"

"Yes, Ma'am, that's correct."

"I was class of '05—although my guess is, given your academic focus, we probably didn't have many professors in common."

"I would guess you're right, Madam President." Devlin thought of several clever ways to elaborate on this simpleminded response, but—as with so many visitors to this office, the words had not arrived in time, and he remained silent.

President Belknap smoothed the skirt of her suit with one hand as she took a seat in the elegantly upholstered Queen Anne chair between the sofas, and crossed her legs. They all took a seat as well.

"Devlin has been deeply involved in planetary analysis, using data from the Darwin and Cash telescopes," Cheryl began.

She went on to explain the basics of the discovery, then turned it over to Devlin to draw the final conclusions. When the short briefing was complete, the President leaned back in her chair.

"I'll be damned," the President exclaimed. "Mr. McGregor, this is an incredible discovery; one that will have a huge impact on how we look at the universe—and at ourselves, for a long time to come."

"Madam President," Cheryl interjected, "there's something else you should know."

The President and Roger Tucker both turned and offered their attention.

"It's possible that this news will have an even greater impact than you think. Before the decision was made to pull the plug on the manned Mars mission, NASA engineers and other scientific organizations had been aggressively exploring different techniques for accelerated space travel.

"The most obvious candidates were nuclear and antimatter," she explained. "At first blush, it looked like antimatter was the most viable, but containment proved elusive. Ultimately, the team settled on nuclear-powered ion beam technology, which would have required nearly three months of travel time for a thirty-day stay on the red planet.

"However, two other concepts were also explored—both far more ambitious," Cheryl continued, "the Alcubierre SEC drive and the Heim gravity engine. While many in the scientific community believed both of these designs to have impassable limitations, there were others who were determined to see them through."

Cheryl paused, then looked directly at the President. "About two years ago, scientists at the Defense Advanced Research Projects Agency, working in conjunction with the Max Planck Institute for Gravitational Physics, successfully demonstrated a working prototype of the Alcubierre drive. NASA scientists are in the process of confirming the results, but it's believed that the breakthrough is real. In typical DoD fashion, all of this is strictly classified."

"I'm sorry Cheryl, but I'm not exactly sure what you're telling us," Roger said haltingly.

"Let me put it this way," Cheryl explained. "The planet that Devlin has discovered is roughly 27 light years from Earth. Using ion beam technology, it would take nearly 100 thousand years to get there. Using a ship equipped with an Alcubierre drive, it would take less than 15."

"You mean 15 thousand," Roger clarified.

"No. I mean just 15," Cheryl said firmly. "Perhaps a little too far for a round-trip mission, but certainly close enough for a one-way journey."

There was silence.

After 5 years together, Ginny Belknap and Roger Tucker had developed an ability to communicate their thoughts to each other without speaking. As they held each other's glance for just a brief moment, they shared their mutual reaction to what they'd just heard: this news could change the path of their next three years together considerably.

In fact, as they returned their eyes to their guests, both suspected that the thought they'd just shared might be significantly understated.

About the Author

In his everyday life, Nick d'Arbeloff works as an agent in the clean energy revolution, working to transform our energy infrastructure in the face of climate change and finite fossil fuel supply. He lives in Carlisle, Massachusetts.

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