

CAREERS

GENDER DIFFERENCES How language in job descriptions affects the response **p.395**

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DOMINIQUE ROCHE



Marine ecologist Sandra Binning recommends that researchers who are pregnant take a few extra steps of preparation before going out into the field.

WORK-LIFE BALANCE

Child on the horizon

Fieldwork can be tough on a pregnancy — but there are ways to manage.

BY EMILY SOHN

Conservation biologist Amy Dickman had built her career around remote fieldwork in Namibia and Tanzania — extended trips that included close run-ins with wild animals. She had encountered venomous cobras in toilets and bread bins. She had been charged by elephants. And she had been attacked by a cheetah. During her first expedition to Tanzania in 2004, a lion sniffed at her tent and eventually fell asleep on top of it, trapping her arm beneath its body.

The likelihood of such events — both

thrilling and terrifying — was high in her work, which aimed to reduce conflicts between humans and carnivores. So when Dickman learnt in 2013 that she was pregnant, it felt at first as if she might be risking a huge career setback.

She worried that the pregnancy would interfere with her usual field trips to the African wilderness, where she often spent eight months at a stretch doing research that has helped to reduce killings of carnivores by 80% (see go.nature.com/2guyn1h); it has also led to multiple career and funding awards and some 40 publications in peer-reviewed journals. And

she fretted that colleagues, superiors and others might perceive her as professionally weaker — although everyone, including her university, was supportive.

Equally disquieting, she says, was the new equation she faced when making decisions about risks: she was now carrying a tiny person that could not offer its own consent to being plunged into dangerous situations. “You’re directly responsible for someone else within your body,” says Dickman, who has appointments at the University of Oxford, UK, and the University of Vermont in Burlington. And others, she notes, including the baby’s father, ►

► also have a vested interest in risk mitigation.

As academic researchers worldwide struggle with a model that places increasing importance on every publication, grant and keynote talk, many female researchers whose careers hinge on remote or challenging fieldwork agonize over the idea of getting pregnant. They wonder whether they can continue to travel into the field to dig for fossils or scuba dive for data, and whether they will need to change or curtail the type of research they do.

Yet those who have continued with expeditions say they find that the experience can be safe and rewarding, and beneficial for science: their successful field trips show other female researchers, for example, that they, too, can be scientists and also plan a family.

But health in pregnancy is unpredictable, as are conditions in the field. After months of preparing for trips that might involve large teams and complicated logistics, it can be hard to decide whether to go and, once there, to determine how best to deal with pregnancy-related complications or disheartening comments from superiors or others.

Scientists who have balanced pregnancy with remote or otherwise risky fieldwork recommend detailed planning for medical care abroad along with frank communication with superiors and colleagues about their specific fieldwork aims. A willingness to shift gears can be helpful: sometimes, cancelling an excursion can be the right choice. Comparing the length of a pregnancy with the timespan of a typical career can also provide a helpful sense of perspective.

“Over the arc of a career, these are little blips,” says Kim Cobb, a climate scientist at the Georgia Institute of Technology in Atlanta. “The idea that a field trip is make-or-break is kind of folly. You’ll have ample opportunity over the course of your career to participate in field trips.”

DELICATE BALANCE

Some scientists try to make deliberate choices about when to start a family as a way to ease the transition into a new phase of life. As a graduate student at the Scripps Institution of Oceanography in La Jolla, California, Cobb loved having “two surfboards and a career that stretched out in front of me full of possibility, publications and adventure”.

But she wasn’t sure how a pregnancy might affect the feeling of freedom that she so relished. Because she and her husband (also an academic researcher) were based in the United States, which has less-generous parental leave benefits than do many other countries, they decided to delay their first pregnancy until they each felt relatively secure in their jobs. They now have four children, and Cobb resumed trips into the field when each infant was nine or ten months old.

Cobb feels lucky that she could control her family timing in a way that worked out well for her. Some female researchers, whether

for personal or for other reasons, don’t want to wait — or don’t have the option of waiting — until their careers are established before they become pregnant. And sometimes, of course, a pregnancy comes as a surprise. The uncertainties that surround a pregnancy can cause conflicts when an expedition requires detailed planning. As a result, questions about when and how to tell superiors can arise earlier than might be comfortable for some.

Dickman, for example, felt obliged to tell her supervisor about her pregnancy when she was only seven weeks into it, much sooner than many women would share such news, because she would need to shift the timing of a field trip to avoid taking anti-malaria medications in her first trimester. “This is something we shouldn’t feel apologetic about,” she says. Her supervisors were fully supportive of her choices.

It is often best to emphasize the need for confidentiality when informing others about a pregnancy, says Siân Halcrow, a bioarchaeologist at the University of Otago in New Zealand. Early in her first pregnancy in 2004, she learnt that she was not legally obliged to tell her superiors until her second trimester. But she privately shared the news, which was leaked to her department head.

When she opted to tell him herself, he said that he already knew. Although her career was not affected by this breach of confidence, she was still upset by it.

Halcrow also recommends documenting communications. Her plans for a field trip to another country were cancelled once against her will, and she now advises pregnant researchers to put all discussions into writing, and to follow up face-to-face meetings with e-mails that summarize the conversations and underscore the person’s desire to stay involved in fieldwork. “Pregnancy is not a failure,” she says.

RISKS AND RECOMMENDATIONS

Travelling while pregnant raises some health risks, especially when the destination is remote or endemic for specific diseases, such as Zika, which can cause birth defects. The World Health Organization in Geneva, Switzerland, recommends the second trimester as the safest for travel, advises against sleeping at altitudes above 3,000 metres during pregnancy and warns of serious complications if pregnant women contract malaria or viral hepatitis E.

The risk of developing deep-vein thrombosis during flights is five to ten times higher than average, or about 1 in 1,000 to 1 in 500, for pregnant women, according to the US National Institutes of Health (M. Izadi *et al. Adv. Biomed. Res.* 4, 60; 2015). The organization recommends that women who travel during pregnancy pack a medical kit that includes prenatal vitamins, compression hosiery, antiemetic drugs and a blood-pressure monitor.

Physicians can offer important advice about forthcoming field trips, says Cobb. She opted out of a trip during her second pregnancy



Archaeologist Briana Pobiner in the field in Kenya.

after asking her obstetrician about visiting a research site on an isolated Pacific Ocean island, from where it would have taken a week to reach medical care. The obstetrician vetoed the trip, Cobb says. Cancelling doesn’t have to ruin a research project for ever, she adds. For example, she has quickly received ‘no-cost’ grant-funding extensions from the US National Science Foundation, allowing her to postpone fieldwork.

Considering a project’s importance to big-picture goals can help to guide choices, says Sandra Binning, a marine ecologist at the University of Neuchâtel in Switzerland. While pregnant, she travelled to a long-familiar remote field site in Australia near the Great Barrier Reef: the work there was essential to her long-term research and she knew that the local field crew was supportive. But she cancelled a mid-pregnancy trip to Egypt — where she was meant to co-teach a class on field research to graduate students — because she had contracted a food-borne illness on previous trips. A graduate student who was originally scheduled to observe the course for training replaced her, with no repercussions.

Extra preparation can smooth fieldwork trips and mitigate anxiety. Before going to Australia, Binning asked her obstetrician to sign documents that said she was fit to travel, and told field-station directors about her pregnancy in case of complications. She also flew home when she was about seven months pregnant because some airlines can stop

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women with advanced pregnancies from travelling on long-haul routes (see go.nature.com/2fxptyv). And she called her university, her health-insurance company and each airline that she would be flying with to find out whether she would need a physician's approval to fly home at the end of the trip.

Those who have been pregnant while doing fieldwork recommend researching vetted medical providers and learning about the safety profile of medications that might be necessary in the field. Friends, colleagues and others can answer questions and provide emotional support. Before a two-month trip to Kenya during her pregnancy, Briana Pobiner, an archaeologist at the Smithsonian Institution in Washington DC, got in touch with colleagues and others who she knew had done similar travel. She also contacted the East African chapter of her undergraduate institution's alumni association to learn about the challenges they faced and how they managed them. Those conversations helped her to locate a hospital close to the field site, as well as an obstetrician in nearby Nairobi whom she could see for check-ups.

Such advice from a wider community can be a great help, agrees Suzanne Pilaar Birch, an archaeologist at the University of Georgia in Athens. Soon after she became pregnant in 2016, she was invited to Cyprus to join a field project a few months later. It was an opportunity she would normally have jumped on, but she would have been six months pregnant by then and was unsure whether to go. What if she committed to the trip but suddenly faced complications? And would she have to tell the team that invited her before she agreed?

To seek advice, she started a conversation on Twitter through TrowelBlazers, a network of female archaeologists and Earth scientists that she had helped to create several years earlier, under the hashtag #pregnantinthefield. The torrent of responses from scientists in many disciplines included some tales of pregnancy complications that had kept researchers home. But many more of the anecdotes were positive, and women posted photographs of themselves doing such tasks as measuring iguanas or excavating fossils in countries as varied as Belize, Oman, Croatia and Chile. Ultimately, Birch accepted the invitation to Cyprus, told her hosts about the pregnancy in the initial phone call and went on a smooth trip. She was happy to get in one last drive for data before the baby came.

Seeing other pregnant women in the field can be a major confidence boost, Binning

adds. When she started her career as a marine ecologist, she took a two-week course in Barbados, and one of the three instructors was pregnant at the time. "I had an image of a pregnant woman doing field work, and it didn't seem to present any significant problems for her," she says. "I always had that in my head. When I got pregnant, I never saw it as a barrier. It is so important that other women get these anecdotes and stories and see that it's possible."

And a visible pregnancy can create opportunities to connect with people from another culture. As a female leader of a research team, Dickman says, she had always been treated as an outsider by the women living in native communities near her Tanzanian field site. But when local women on her field staff saw that she was pregnant, they began to quietly bring her extra boiled eggs and more hot water to shower with.

Some researchers find that their attitude to risk changes as a result of being pregnant. While driving through a game reserve in Kenya one night during her pregnancy, Pobiner and a colleague almost hit an elephant on a dirt road. The near miss jolted her into realizing that she could never again afford to be as casual as she once was about health and safety in the field. "I thought, 'Wow, this was scary — it's not just me I have to worry about any more,'" she says.

STAND UP FOR YOURSELF

Pregnancy can be a learning experience that extends beyond the actual physical condition, Cobb says. She was three months pregnant in November 2006 when she travelled from the United States to the Bahamas to consult on a coral-reef filming project. On her physician's advice, she avoided scuba diving with the team. But she boarded the boat every morning to offer advice and support.

On the second day, choppy seas slammed the boat up and down, and Cobb worried that the impact might be harming the fetus. Although she asked the boat captain to slow down, the ride continued to be rough, and she was uneasy that night and beyond.

Cobb's son was born healthy and at full term the following spring. But the experience taught her the value of standing up for herself and of discussing concerns with team members before setting out on an expedition. She now talks to her field teams about speaking up and looking out for each other before they charge ahead on a precious field day. "I explicitly say, 'The field rule is that we are all in this together and there are natural risks to a field expedition, so let's go through them one by one. You need to say, 'I feel uncomfortable' or 'I feel unsafe,'" she says. "You need to be your own advocate." ■

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GENDER DIFFERENCES

Language matters

Two studies highlight yet another set of differences between female and male researchers. One suggests that messages that link career success to 'brilliance' in science can discourage some women from pursuing certain career paths or education opportunities. The other finds that women are more likely than men to offer 'honorary authorships' to scientists who might not deserve the accolade — a courtesy that risks obscuring the magnitude of their own contributions.

In the first study (L. Bian *et al.* *J. Exp. Soc. Psychol.* <http://dx.doi.org/doi.org/10.1016/j.jesp.2017.11.006>; 2018), researchers surveyed nearly 200 undergraduates about their interest in hypothetical internships and in studying certain university subjects. Consistently, women were less keen about the possibilities when the descriptions emphasized the importance of brilliance by asking, for example, for an "intellectual firecracker" with a "sharp, penetrating mind". But when descriptions of the same options used language such as "great focus and determination" — highlighting the importance of hard work and dedication — women's interest grew significantly. Conversely, men were generally more interested when descriptions emphasized intelligence over effort.

The gender difference could have real consequences for students and researchers, says lead author Lin Bian, a psychologist at Stanford University in California. "Women are not motivated to pursue fields or jobs that are perceived as requiring intellectual talent or brilliance," she says; rather, she thinks that women are more likely to gravitate towards a field when scientists emphasize other keys to success in it, including hard work. "It's important to de-emphasize the role of brilliance in achieving success."

In a second study (E. A. Fong and A. W. Wilhite *PLoS ONE* **12**, e0187394; 2017), researchers at the University of Alabama in Huntsville looked at survey responses from more than 12,000 US scholars from a wide range of disciplines. Overall, 35.5% of respondents reported giving at least one 'honorary authorship' to a researcher who contributed little to the paper. Women were 38% more likely than men to have felt obliged to give honorary authorships. "Female researchers", the authors conclude, "may be less able to resist pressure to add honorary authors because women are underrepresented in faculty leadership and administrative positions in academia and lack political power." ■