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Women at the Bottom of the World: Lois Jones and the First All-Female Expedition to Antarctica

Kate Alley
Tulane University, New Orleans, Louisiana, USA

Abstract: This paper provides an overview of the decision that Antarctic researcher Lois Jones faced in 1969. After spending years conducting her research based on samples collected by her male colleagues, Jones was presented with the opportunity to lead her own expedition to Antarctica, on the conditions that her crew was all-female and would reside primarily off-base, away from the male researchers of McMurdo Station. By placing Jones' dilemma in the broader context of polar exploration and the historic role of women in it, this paper analyses the potential implications of Jones' eventual all-female crew on the gender dynamics of scientific research.

Introduction

In 1969, Dr. Lois Jones found out that after years of conducting polar research with samples collected by her male colleagues, she herself had gained the approval necessary to visit the globe's southernmost continent on a research expedition of her own. The approval had been given by the United States Antarctic Program and came with conditions which removed Jones's autonomy surrounding her expedition in a way that her male colleagues did not have to face. As such, Jones had to decide whether to pursue a mission on the terms set forth by an institution with little to no desire to enhance gender equality in Antarctica, or risk losing the potential for progress that this compromised acceptance presented.

Enter Lois Jones

Born and educated in Ohio, Lois Jones was an emerging leader in the field of geology upon the completion of her PhD in 1969 (Jones 1969). She had already completed both an undergraduate and master's degree in chemistry prior to writing a 368-page thesis on the presence of unusually high levels of salt in the lakes and soils in the valleys of the Transantarctic Mountains, a region known for its lack of ice and snow despite freezing temperatures. However, Jones was forced to write and defend her work without having ever visited the region she studied (Seag 2020). The United States Navy facilitated all U.S. research in Antarctica, and Navy regulations didn't allow for women to be transported on military vessels such as those used to transport researchers to Antarctica (Herbert 2017). Therefore, women were not allowed to conduct field work in Antarctica, meaning that Jones was unable to collect her own geological samples. As such, every sample used in her research had to be donated to her from her male counterparts who were able to conduct their own field work (Seag 2020).

Upon the successful defense of her dissertation, Jones was no longer content with using samples that she herself had not acquired. A professor at Ohio State University by the name of Colin Bull had for years been advocating for the Navy to transport women to Antarctica for research expeditions, arguing that excluding women from research slowed down scientific progress. The newly minted Dr. Jones presented the possibility to make that vision a reality, and Dr. Bull recommended that she apply for funding from the United States Antarctic Program (USAP) for the 1969-70 field season to continue her study of geological salinity. The USAP sent a positive response, with a set of conditions set by the Navy that Jones would be required to meet before embarking on the adventure she had been building up to for her years-long academic career.

The terms included that the Jones expedition must reside primarily in the field, 200 miles away from McMurdo Station and that the crew must be composed entirely of women (Rejcek 2009). Because of these conditions, Jones needed to consider the implications of conducting her research not just from a scientific standpoint, but with an understanding that her actions could impact the future of gender within Antarctica, as well as an understanding that the members of any potential expedition she was leading would be forced to spend the Antarctic summer away from a centralized source of food and water. As such, she needed to decide whether to accept the conditions of the USAP despite their adherence to androcentric norms of scientific research, or to take a stance against those conditions.

History of Polar Exploration

A Male-Dominated Start

Part of the monumentality of Jones's acceptance by USAP was the fact that an American female-led research expedition had never occurred before (Herbert 2017). The first explorers to travel to Antarctica reached the continent in 1821, and the early stages of increased polar exploration—what is now known as the "heroic age"—took place from 1897 to 1922 (Seag 2020). The virtues that inspired this era of explorers were inherently chauvinistic, as explorers were motivated in large part by the idea of entering a rugged and truly wild landscape that could only be successfully traversed by men. The scientific researchers that followed similarly instilled their own expeditions with the belief that polar exploration was a pursuit solely for men (Herbert 2017). Infrastructure created for Antarctic research stations was built seemingly without regard for the potential of female researchers eventually joining the midst of their male counterparts. At the McMurdo station, the primary United States Antarctic research base, residences specifically for women were not built until well into the 1970s, and there were no designated women's restrooms at the research base until 1980. Equipment that women were fully capable of handling under normal circumstances were made more difficult to operate due to their being built to fit a male body (Blackadder 2014). To this day, the United States Antarctic Program commissions clothing that is designed to fit a male frame, meaning that women are simply offered smaller sizes of clothing made for men instead of being provided with an alternative that is designed with the intent to fit their own bodies. Though a female-led expedition would not eliminate the presence of androcentric social norms and infrastructure, Jones' expedition presented the possibility to begin a shift away from excluding women in polar research.

The First Forays

For decades prior to the 1969 summer season, women had been vying for the chance to work in Antarctica. Marie Stopes, a respected paleobotanist, was rejected from participating in a three-year expedition led by explorer Robert Scott in 1910 (Seag 2020). A series of applications

from unidentified female students of noted polar explorer Ernest Shackleton reveal three enthusiastic and unfulfilled female pleas to be included on an expedition. In 1929, 25 female applicants vied for a spot on a joint expedition between Britain, Australia, and New Zealand. They were all rejected. Eight years later, 1300 female applicants were denied the ability to partake in the British Antarctic Expedition. Despite consistent interest in research and exploration, by the year Jones' crew arrived in Antarctica, less than a handful of women had ever set foot on any part of the continent (Herbert 2017).

The first women in Antarctica were defined primarily by their proximity to men. These were the wives and occasionally the daughters of captains aboard ships bound for short term landings during their time hunting whales and seals in the globe's southernmost oceans (Seag 2020). It is this practice that led to the continent's first five female visitors. First was Caroline Mikkelsen, the wife of a whaling captain, who landed in 1935 (Sloan 2023). She was followed a year later by Ingrid Christensen, the wife of whaling entrepreneur Lars Christensen. Ingrid's friend Lillemor Rachlew, daughter Sophie Christensen, and fellow crew wife Solveig Widerow also joined. Ingrid was the most familiar with Antarctica, as she had already joined her husband on three separate expeditions that had failed to make landfall (Seag 2020). The experiences of these women were not lauded in their time as notable, since they were mainly viewed as dead weight carried by their brave and heroic male partners. The presence of women on Antarctic soil was given the same reception as the unloading of cargo onto the ice.

Women Working the Poles

The roles of women as expeditioners versus mere companions collided during the 1946-48 Antarctic expedition led by Captain Finn Ronne. Edith Ronne, the first woman to serve in a professional role on an Antarctic expedition, represented the vanguard of women as polar expeditioners, rather than simply companions (Hansson 2003). She handled logistical efforts to plan the expedition led by her husband and intended to join the crew for part of the trip down the coast of South America. While en route to see her husband off, Finn convinced Edith to join the crew as their historian. She went on to fulfill this role as well as maintain correspondence with the North American Newspaper Association to document the daily happenings of the expeditioners (Weinraub 1995).

Perhaps less enthusiastic to be joining the expedition was Jennie Darlington, wife of the crew's chief pilot and future author of *My Antarctic Honeymoon: A Year at the Bottom of the World*, a memoir wherein she recounts how women should remain out of Antarctica (Herbert 2017). Throughout her book, Darlington commented on her role as a passive passenger on her husband's expedition; even the decision to join the expedition is dictated by others. Upon hearing that Ronne would be joining the expedition, Darlington wanted to join as well so that she could continue to be with her husband, a sentiment that her husband did not agree with. Despite the fact that she wished to be a part of the expedition, Darlington did not express her opposing viewpoint to her husband and would have continued to act as her husband wished had it not been for his own change of heart. Upon arriving in Antarctica, Darlington documented her distaste with the continent, describing it as "a vast, empty expanse with the dead, distant look of a lost planet" (Darlington 1956). She went on to describe the ways in which living in an Antarctic environment directly acted at odds with her own ideas of femininity, and her desire to leave Antarctica as a result.

These two women are reflective of the two primary schools of thought surrounding the ability of women to travel to Antarctica (Hansson 2003). On the one hand, hopeful female researchers and those aware of the potential contributions of women were advocating for women to gain access to this traditionally male-dominated space. On the other hand, there were the men and institutions such as the USAP who wished to maintain their exclusionary norms, intent on keeping Antarctica as a sacred space for heroic male exploration.

Beyond Antarctica, women intent on pursuing polar exploration during the late nineteenth and early twentieth centuries had slightly more success. Individual wealth could open previously closed doors, as they did for Fanny Bullock Workman in the Himalayas, and for Louise Arner Boyd in Greenland (Middleton 1965). Both women led teams to explore polar regions and were able to do so through their own personal financial contributions to their respective expeditions. A landmark moment in institutionalized support for polar research came in 1957, in the form of the International Geophysical Year (IGY). IGY encouraged cooperative geophysical science research, much of which was centered in polar regions, among 67 participating countries. During this time, more projects began, necessitating a larger workforce dedicated to geophysical sciences, creating much-anticipated opportunities for women to take part in research. Maria Klenova, a marine geologist from Russia, was able to leverage IGY to become the first ever female researcher on the continent of Antarctica (Sloan 2023). A slow but steady stream of women followed in Klenova's footsteps, as two fellow Russians—hydrobiologist V.S. Korotkevich and geomorphologist Liudmila Nikolaeva—landed in Antarctica one year later. In 1963, two scientists named Nelly Lafuente and Wanda Quilhot conducted research on Antarctic birds at the Chilean base. Four Argentinian biologists joined the ranks of women in Antarctica in 1968. And in October of 1969, just a few weeks before Jones' anticipated expedition date, Christine Muller-Schwarze, a psychologist conducting research on penguins alongside her husband, became the first American female researcher on the mainland of Antarctica (Seag 2020).

However, while organizations such as the National Science Foundation became more accepting of women partaking in research endeavors, any potential funding for Antarctic journeys during this time were stifled by a logistical restriction. Almost all American expeditions to the Antarctic were based at McMurdo Station, a naval air base created in 1956 in anticipation of the International Geophysical Year. The U.S. Navy, in its operation of McMurdo, made a stipulation that women were not allowed to live there, nor could they be transported there via Navy plane (Rejcek 2009). The Jones expedition and Christine Muller-Schwarze became the first requests for American Antarctic expeditions to gain approval (Sloan 2023). Muller-Schwarze was granted approval partly because her husband would also be part of the expedition. The USAP clearly continued to view women simply as add-ons to men, with no inherent value on their own; Muller-Schwarze would be living in the same space as her husband and would therefore not require the same infrastructure on the research base that an unmarried woman would require. Lois Jones, on the other hand, was an unmarried woman.

Implications of Inclusion

While an all-female expedition was in many ways groundbreaking, it revealed the continuation of androcentric norms in Antarctic research. By requiring Jones and her hypothetical female crew to live far away from McMurdo Station, the research base was absolved of the responsibility to create infrastructure for the women, meaning limited structural change at McMurdo would be put into place. Stationing the women in the field also absolved the men on the McMurdo base from coming to terms with their own misogynistic behavior, a behavior that for

many had been enhanced by existing in a male-only environment for months on end. The "heroic" connotations that had been present among male expeditioners for well over a century at this point had developed into the notion that the Antarctic landscape was something pristine and untainted. Many male researchers at the time of the Jones expedition still viewed the earth's most isolated continent this way, as a world beyond society. To them, the introduction of women presented the possibility for sexual relations, which brought a corruption to their sterile, male-dominated land (Herbert 2017). The attribution of purity to Antarctica can be seen throughout its expedition history, as its landscapes are often referred to as "untouched" and "virgin." Despite the relative lack of women in Antarctic contexts, many landforms and water features on the continent are named after women, oftentimes wives of expeditioners (Seag 2020). The connotation of women, purity, and the land, coupled with the expressed desire by male expeditioners to traverse Antarctic landscapes, created an unsettling dynamic fueled by heteronormativity for any potential females on the continent. Had the Jones expedition been more integrated into a research base, they would have disrupted the long-unchallenged dynamic of the land's feminization and men's dominion over it.

But while the potential of a Jones expedition would not necessarily create systemic change at McMurdo, it still would provide the opportunity to set precedents in scientific research. Jones would be able to show her fellow researchers that she and other women were capable of producing meaningful scientific work that would advance their respective fields of study if she were able to lead a team of women on a successful field season. Being able to conduct her research in its entirety, instead of relying on her male colleagues to collect samples for her, would also allow for Jones to assert more independence in her scientific publications (Tickhill 2016). She would not be tied to being a research partner, but could instead be making every decision for herself, granting her the autonomy that she and her fellow female researchers had been denied for years. Beyond the purely scientific community, a female-led expedition to Antarctica would also create something of a media frenzy, meaning that Jones would be able to serve as a role model to other women and girls and give validity to their aspirations, no matter how large or outlandish they might be (Rejcek 2009). Simultaneous to the possibility for success and progression, Jones would also face extreme pressure from an androcentric scientific community, as her precedent would impact future researchers from marginalized communities. While a good field season would pay dividends for those barred from scientific research, any flaws in the execution of her own research would be scrutinized by the United States Antarctic Program, an entity already wary about allowing Jones onto the continent. As polar historian Megan Seag notes:

> The women understood when they were on the ice that if they didn't do an exceptional job, they were going to close the door behind themselves. They were told, "If you don't do a good enough job, there won't be any more women for a generation in the Antarctic." (Seag 2020, 1)

In addition to stigma in Antarctica itself, the women of a potential polar expedition would be forced to reckon with discriminatory behavior at home (Tickhill 2016). Traveling to an Antarctic research station was not for the faint of heart, as crews needed to reside on the continent for at least three months. This required researchers to settle any affairs in their personal life prior to departure, which in many cases entailed care for the children and parents of the researchers.

Notions of women being responsible for familial care allowed for the male researchers of Antarctica to somewhat disregard this component of expedition preparation, as the responsibility of caring for their children or for their potentially elderly parents was, for the most part, never their responsibility to begin with (Nash 2019). Additionally, while working men have historically been viewed as providers for their family who are doing the work necessary for their family to live a good life, working women have been viewed as abandoning their children in favor of pursuing a career for their own personal interest. As such, societal pressures surrounding motherhood made the option of having husbands take on the role of father less feasible for potential female Antarctic researchers. Moreover, it was not uncommon for female researchers to be married to male researchers who were also keen on conducting field studies in Antarctica, making it more logistically difficult to distribute familial responsibilities even for couples who might have a male partner willing to take on the task of caring for children and parents (Rejcek 2009).

When considering her offer of acceptance from the United States Antarctic Program, Jones was faced with an additional confounding factor, as she would need to consider who of her already limited cohort of female researcher peers would be able to join her. Though she herself was not married, nor did she have children, these were factors that had to be taken into account when composing the rest of her team (Jones 1969). Researchers who had children, were pregnant, or planning on becoming pregnant in the near future would need to consider their options and weigh them with the opportunity of conducting their own field research. Given the potential danger that pregnancies can impose on a person, coupled with the limited availability of licensed medical professionals in Antarctica with gynecological experience, having children in Antarctica is generally viewed as a risky decision that in most cases is not worth pursuing (Hansson 2003).

The pressures that women interested in pursuing an Antarctic expedition experienced were also felt by women in the scientific research community at large. Given the associations of women with home life, domesticity, and emotion, they had historically been discouraged from pursuing careers in science due to the taxing nature of the field and unfounded notions that women would be inferior researchers when compared to their male colleagues. At the time of Jones' potential expedition, she and the women she worked with were vastly outnumbered by male researchers (Tickhill 2016). Undergraduate departments of biology, geology, and chemistry (areas of study frequently examined by Antarctic researchers) throughout the United States frequently had less than a handful of women in their programs, and the number of these women that decided to pursue further advanced study was even smaller.

Ultimately, the United States Antarctic Program presented Lois Jones with the option to accept flawed working conditions in the hopes of advancing the cause of women in positions of scientific authority, or to advocate for those working conditions to change for the better, which could have put her entire project at risk of losing approval. In her attempts to pursue her dreams. She could choose to accept the conditions set before her and conduct her groundbreaking (both literally and figuratively) geochemical research. She would be able to show the world that a team of women could contribute meaningful scientific work, and could survive in Antarctica, even with limited help from the McMurdo Station research base (Seag 2020). Jones would be conducting a summer expedition, which posed fewer challenges than overwintering in Antarctica, but the logistics of getting food and water to a field station would still be exponentially more difficult for Jones to manage than staying at an established research base (Tickhill 2016). Additionally, given the location stipulation set by the United States Antarctic Program, this course of action would allow for limited accountability to change McMurdo Station in a structural or behavioral way. On the other hand, Jones could reject her offer on the grounds that it limited her autonomy as a

researcher, or she could advocate for the USAP to remove one or both of the conditions set upon her acceptance offer. This course of action could incite more systemic change within American Antarctic research, and Jones could cite the numerous other countries that had begun integrating female researchers into their previously all-male research stations. But this option could also prove catastrophic to Jones' research career. The USAP and the United States Navy managing McMurdo would gain credibility through the appearance of progressivity and inclusion by allowing Jones' and her potential crew to Antarctica, but they had not previously viewed this as a priority, and as such they still held majority of the power in this decision-making process.

Conclusion

Lois Jones was faced with a decision that extended beyond herself. As a female researcher in an area of science particularly dominated by men, her acceptance by the United States Antarctic Program presented the opportunity to establish her own autonomy and independence in her research, as well as the possibility of making meaningful contributions to her field of study (Seag 2020). The conditions that were included in her acceptance, namely the fact that Jones would need to reside off of McMurdo base and assemble an all-female crew, added a layer of complication not faced by her male colleagues when they embarked on their expeditions. These conditions in many ways eliminated the accountability of the USAP to make any systemic changes to Antarctic research procedures to make them more accessible to women, and as such Jones was tasked with deciding whether or not progression with constraints was true progression. The case of Lois Jones and her Antarctic expedition presents one specific way of approaching many broader questions. What does it mean to have a segregated workforce? At what point is conditional progress still progress? Does breaking boundaries on an individual level set enough of a precedent to enact systemic change? Does more risk equate to more reward?

Epilogue

Eventually, Lois Jones decided that she would accept the conditions set for her expedition by the United States Antarctic Program. Jones assembled an all-female research team in the form of geologist Eileen McSaveney, entomologist Kay Lindsay, and undergraduate chemistry student Terry Tickhill Terrell (Rejcek 2009). Terrell joined the crew after one member announced they were unable to go on the expedition due to a personal matter. While she was in many ways qualified to join the crew, the relatively rare addition of an undergraduate student to an Antarctic expedition was in part necessitated by the all-female crew requirement imposed on Jones by the USAP (Tickhill 2016).

As Terrell remarked in an interview after the expedition, their crew made a considerable effort to be "considerably less bother than the men," something that Jones had emphasized since the initial formation of their team (Rejcek 2009, 5). For Jones, this expedition was the culmination of years of work, and she viewed it as an opportunity to show the world that women were equally capable of living in Antarctica. The idea that future research endeavors could be squashed by her crew being viewed as a nuisance was nerve-wracking enough that when the crew encountered an unfamiliar form of heater at one of their research campsites, they waited three days before seeking assistance in turning it on. For the Jones expedition, the fear of appearing too weak to last without a heater, or worse, to be deemed fools for accidentally setting their sleep structure on fire, far outweighed the cold of three nights in Antarctica without a heater.

On November 12, 1969, six women boarded a plane. These women made up all but one of the women researchers on the continent of Antarctica at the time (Cimons 2009). Pam Young was

a biologist assisting her husband on the New Zealand Antarctica base. Jean Pearson was a reporter from the Detroit Free Press. The remaining four women were from the American Jones expedition. Fellow American Christine Muller-Schwarze was also conducting field work at the time, but due to the sensitive timing of her research subjects (the penguins of Cape Crozier, near the McMurdo Station), she was not able to make the trek to the South Pole. Though it was summertime, they bundled up, preparing for sub-freezing temperatures, and they were accompanied by naval officers on what was a mere three-hour flight. The plane transporting the women carried hundreds of pounds of cargo and fuel, despite the fact that the women would be flying back home to their research bases that same day. This strange convergence of events only starts to make sense when the final destination of the flight is taken into account: the South Pole. Upon their landing, all six were instructed to link arms and step off the landing platform together so that they could all share the title of being the first women to set foot at the southernmost point on the globe (Rejcek 2009).

This detour to the South Pole was part of a media effort by the United States Antarctic Program to display the women they had graciously allowed to conduct research in Antarctica. None of the women in Antarctica at the time were conducting research pertaining to the South Pole specifically, which demonstrates the USAP's view of women in Antarctica in part as a performative act. But while in some ways a false display of progressiveness, this moment also was the culmination of years of hard work, compromise, disappointment, and yet finally in its own way, victory. Though this part of the Jones expedition was largely symbolic, it nevertheless contributed to the advancement of women in male-dominated spaces. The success of the expedition allowed for more American women to conduct research in Antarctica. Just one year after the Jones expedition, Irene Peden became the first woman to work in the interior of Antarctica, and in 1974 Mary Alice McWhinnie became the first chief scientist at McMurdo Station. While it took several years to happen, moves were eventually made to increase the gender inclusivity of McMurdo base infrastructure. Today, approximately one third of Antarctic base residents identify as women, a huge shift for Americans at the bottom of the world that shows an increased acceptance of women within Antarctica.

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