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Gender, Science, and Two Cultures in Marion Zimmer Bradley's *The Ruins of Isis* (1978)

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Willkommen auf dem Planeten Isis, früher bekannt als Cinderella. Dies ist der Ort, an dem Marion Zimmer Bradley ihr Gedankenexperiment des spekulativen Science-Fiction-Romans *The Ruins of Isis* (1978) angesiedelt hat. Das Experiment basiert hauptsächlich auf folgender Tatsache: Isis ist ein Matriarchat und wird somit von Frauen regiert. Beginnend mit der Umbenennung des Planeten von Cinderella zu Isis formuliert die Autorin eine scharfe Beobachtung traditioneller Geschlechterrollen und Machtstrukturen, wobei sie sich mit ihrer Hauptfigur Cendri, einer Anthropologin, und deren Ehemann Dal, einem Archäologen, besonders auf die Wissenschaften konzentriert. Das Ergebnis ist ein klarer Kommentar zu den Kulturen, welche einander im Roman gegenüberstehen: Bewohner verschiedener Planeten, Frauen und Männer, Geisteswissenschaften und Naturwissenschaften. In diesem Artikel wird betrachtet, wie die Figuren, Kulturen und Disziplinen durch das, was C. P. Snow als »gegenseitiges Unverständnis« bezeichnet hat, getrennt sind. Es wird argumentiert, dass es Ziel des Romans ist, eben jene Trennung zu überwinden, und gleichzeitig bestehende Verhältnisse in den Wissenschaften und deren Interaktion mit gesellschaftlichen Strukturen kritisch zu hinterfragen.

Introduction

In 1666, Margaret Cavendish published the novel *Blazing World* as a sharp critique of the Royal Society's rejection of Cavendish as a member on the basis of her sex (cf. Rose 210). Hilary Rose proposes to view *Blazing World*, rather than *Frankenstein*, as the first science fiction novel in existence. This would indicate that matters of gender and science have always been integral to the genre of science fiction. What may be analyzed in science fiction novels are therefore not only futuristic inventions, but rather the – often gendered – culture of science itself. Hilary Rose has argued that »[f]eminist SF writers explore and raise in the imagination issues of overwhelming importance to women in culture and society [...]« (214); I propose to see gender imbalances in science as one of these issues. Rather than offering an escape from daily life, science fiction effectively dramatizes existing injustices (cf. Le Guin 2). In the words of Ursula K. Le Guin, »science fiction is not predictive; it is descriptive« (3).

Like *Blazing World*, Marion Zimmer Bradley's novel *The Ruins of Isis* (1978) is strongly inspired by the culture of science of its time, which had remained gender-biased more than three hundred years later. Joanna Russ posits that science fiction is a genre which is »peculiarly appropriate for feminist writing as it provides a vehicle for exploring [...] anxieties and experiences concerning science and technology« (qtd. in Rose 209). This is certainly true, yet this essay is not interested in exploring new technological inventions and their consequences. Rather, it aims to draw attention to the fact that women remain underrepresented especially in STEM disciplines (science, technology, engineering and mathematics) to date. When *The Ruins of Isis* was published, a mere six years had passed since the 1972 Educational Amendment Acts, meaning that the issue of women in science was a highly current one. The Educational Amendment Acts constituted the »first class-action lawsuits against sexual discrimination in public university hiring practices« (Yaszek 391). Title IX of these acts »guaranteed equal pay for men and women working in higher education, while banning sex discrimination in all federally funded educational programs« (391). Certainly, significant gains have been made since 1970, when women made up only 8% of all STEM workers (cf. Martinez and Christnacht n. p.). Yet, the number still had reached only 27% in 2019, and this was largely due to women's prominent representation especially in health-related sciences (n. p.). Gender keeps being an influential factor on position and salary in the natural sciences, so that according to Helen Shen, women in STEM on average make »82% of what male scientists make in the United States – even less in Europe« (22). Therefore, the matter of women scientists in general and their representation in American popular culture in particular remains highly relevant to date, meriting further analysis. As popular culture may function as a vehicle for the exploration of societal issues, especially

texts from decades past can highlight the imbalances that existed at the given time – in this case, the discrimination of women within the academic culture of the 1970s.

The Ruins of Isis constitutes a unique opportunity for examining the gendered culture(s) of science. As Lisa Yaszek notes, Zimmer Bradley's text performs »radical reassessments of science, technology, and women's work« (qtd. in Merrick, *Secret* 256), not least by choosing a female scientist as its main character. By aligning its male and female central characters with two separate scientific disciplines, Zimmer Bradley's novel further represents successive trends in the genre of science fiction. The archeologist Dal stands in as champion for the ›hard sciences‹ and ›hard sf‹, which are both associated with masculine values and represent early stages of the science fiction genre. Dal's wife Cendri, an anthropologist, represents a turn within the genre to ›soft sf‹ and the New Wave movement, whose authors »were primarily educated in the humanities« (Merrick, »Fiction« 106). This development cannot just be explained with an increasing number of women writers, or writers educated in the humanities, but further by Yaszek's theory that earlier technocratic ideals were simply »no longer adequate for dramatizing life in the modern world« (391). Because both characters are scientists, I propose to consider *The Ruins of Isis* not only in terms of science fiction and gender, but also in terms of *science studies* – an area that allows one to carefully consider which science – hard or soft, STEM or the humanities – is seen as superior to others within the given context of Zimmer Bradley's novel.[1]

The question of the hierarchization of disciplines is further integral to what is called the two culture debate. This debate originated from a vicious dispute between the British scientist Charles Percy Snow and the literary critic Frank Raymond Leavis during the late 1950s and early 1960s. In 1959, Snow delivered a lecture titled »The Two Cultures« in which he criticized the divide between what he saw as the two separate cultures of science and literature, deeming these to be divided by »mutual incomprehension« (Willis 5). While Martin Willis identifies this assessment, which sparked Leavis' immediate and strong response, not as an attack on the humanities but as a »call for greater comprehension« (5), Patricia Waugh explains the tension that resulted from Snow's lecture by classifying »the two cultures as ›essentially a debate about different kinds of knowledge and the value of different kinds of knowledge‹« (qtd. in Willis 6). The very same debate echoes throughout *The Ruins of Isis*. While Zimmer Bradley's novel can, similarly to Snow's lecture, be perceived as a »call for greater comprehension« (Willis 5) between genders, characters, cultures and sciences, it largely depicts

[1] My interest in this particular novel is based upon its depictions of gendered systems of science, which I believe merit analysis. I am treating the author as separate from her work for this purpose. Nevertheless, the person Marion Zimmer Bradley must be strongly condemned for the allegations of abuse that have been brought forth against her.

arising arguments between the two main characters and the gendered cultures and disciplines they represent. The genre of science fiction itself can provide the grounds for an »important exchange« (Merrick, *Secret* 222) across the chasm of the two cultures. Yet, insofar as the two cultures have been transposed by authors and scholars onto ›hard‹ vs. ›soft‹ sf, repeating the idea that they are divided risks further broadening the divide (cf. 223). In an attempt to build a bridge between disciplines, scholars have argued for a third culture instead, complementing the two cultures discussed in Snow's lecture (cf. Shaffer). *The Ruins of Isis* too attempts to establish such a third culture towards its ending, where genders, societies and scientific disciplines might be equal. Since this aim is however not fully achieved by the end of the novel, the initial two cultures and the many ways in which they intersect with science and gender within Zimmer Bradley's work constitute the focus of this essay.

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The plot of *The Ruins of Isis* follows its main character and sole focalizer, Cendri. In providing the only available point of view, the reader is encouraged to identify with Cendri, even if her version of events may at times be classified as subjective and her narration can be seen as partly unreliable. Cendri is an anthropologist who was trained and educated on the fictional planet of University – a name which draws attention to the novel's engagement with competing scholarly discourses. On University, Cendri had previously met her husband Dal, who hails from a planet with an equally telling name: the patriarchal planet Pioneer. Within Zimmer Bradley's universe, we further find the matriarchal planet Isis, on which much of the action takes place, and Cendri's home planet Beta Capella, which is hardly mentioned. There is no equivalent to Earth, meaning that all mentions thereof in this essay are meant in an extradiegetic sense.

The novel opens with Cendri and Dal arriving on Isis together. Formerly known as Cinderella, the planet's name change to Isis is significant, since it disassociates the inhabitants from a fairy tale which essentially relies on a male savior figure. Instead, the inhabitants of Isis link themselves to a powerful goddess of protection and magic, and thus underline their own agency. As part of her character development, Cendri too later changes her name to »Cendriya« (Zimmer Bradley 231). This points to her empowerment, even though Cendri herself initially suggests that she changes her name to better align her identity with the host culture, where names with three syllables are more common for women. In integrating the main character into a new culture, Zimmer Bradley's work can be seen as a typical science fiction »encounter« narrative (Strengers 32). In such a narrative, the »heroic scientist explorer« (Yaszek 386) typically stands

in for the reader and interacts with an alien society – in this case, the entirely human inhabitants of Isis. As Cendri immerses herself in the culture of Isis and learns about its customs, including its views on gender and science, the reader is thus simultaneously educated on the very same matters.

Since Isis is a matriarchal culture which exists independently from the conglomerate of other planets, known as the Unity, the novel not only presents an encounter narrative, but also a thought experiment. As Brian Attebery relates, the separation by gender was a prominent theme and »the basis of a fascinating series of thought experiments« in the 1970s, »the decade when women writers of SF ceased to seem exceptional« (107). In the case of Zimmer Bradley's novel, the given thought experiment presents the reader with a simple enough question: what if women ruled the world, instead of men? In asking such a question, one might observe how *The Ruins of Isis* for the most part does not depict a society that is gender equal, but rather subverts gendered experiences from Zimmer Bradley's own time. The novel establishes a clear gender hierarchy, which presents women as superior both through its choice in focalization as well as the featured culture of Isis. It should additionally be noted that while other science fiction works have found creative ways to blur the boundaries between male and female, *The Ruins of Isis* very much upholds and depends on a view of gender as a binary construct.

From the beginning of the novel onwards, men on Isis are alternatingly regarded as animals, property, or as a threat. In dividing men from women via assigned habitats, Isis is a ›separatist‹ society in both terms of gender as well as in the distance Isis maintains from its neighboring planets. After a past attack on Isis, the matriarchal society functions only with a minimal amount of trade with the other planets of the conglomerate. Since women live without men in Zimmer Bradley's novel and commonly only engage in heterosexual relations during the planet's fertility rituals, the key relationships these women form are amongst themselves, be these of a homosocial or homosexual nature. As anthropologist, Cendri exhibits an active interest in the depicted cultural customs, discovering her own bisexuality throughout the novel. Cendri's interaction with the women of Isis fundamentally influences her character and her relationship with Dal, even though she initially perceives these interactions as part of her research rather than her private life.

Since Isis is one of the very few remaining matriarchal societies in the universe Zimmer Bradley imagines, anthropologists from University have long been eager to study it. This has however been expressly forbidden by the two matriarchs currently competing for power on Isis, who do not perceive themselves or their planet as research objects: »[t]he Matriarchate of Isis is not an experimental society, and we will not allow ourselves to be studied by scientists as if we were one of those glass-sided insect colonies

we give to our little daughters for toys!« (Zimmer Bradley 18). Isis is not only home to the Matriarchate, however – it is also home to ancient ruins, the titular *Ruins of Isis*, which archeologists (among them Dal) are as eager to study as anthropologists are to engage with the planet's population. Since the ruins existed long before the current inhabitants ever set foot on Isis, the two matriarchs are willing to have them studied by University scholars – preferably of course female ones. Initially, Dal's supervisor Scholar Dame di Velo, one of the most respected archeologists of the time, had been invited for this purpose. Since di Velo then suffered an accident, the matriarchs of Isis have begrudgingly sent for her assistant – whom they assumed to also be a Scholar Dame by the name of Malocq. Dal Malocq is said assistant but cannot travel to Isis as a male scholar. Since he is desperate to get a look at its ruins regardless, he convinces his wife Cendri, who bears the same last name, to pose as an archeologist for the duration of their stay.

Effectively, neither Dal nor Cendri are able to openly pursue their respective research. The archeologist Dal is relegated to the role of the assistant's assistant and Cendri is unable to directly ask anthropological questions, knowing the matriarchs would not allow such research. Both of them need to be careful not to blow their cover, even as Cendri covertly attempts to collect as many anthropological insights as possible through interacting with the inhabitants of Isis around her, while Dal is denied all access to his object of study. Both scientists need to adjust to the schedule and demands of Isis, which delays their first visit to the ancient ruins significantly and effectively affords Cendri more time to pursue her anthropological work. What consequently arises between Dal and Cendri is a series of arguments about whose research deserves priority and whose discipline is more important as a whole. Even though Cendri ventures that »[w]e really do the same work, in a way, don't we, Dal? [...] I study cultures while they're still going on, and you study them after they've stopped, but it's the same work, isn't it, darling?« (Zimmer Bradley 42), and even though one might argue that archeology and anthropology are indeed not so very far apart on the spectrum of all scientific disciplines, what develops is nevertheless a tension between two different (scientific) cultures, as well as genders.

Opposing Opinions on Gender and Science

The Ruins of Isis distinctly portrays differing views on gender and science especially in considering the planets of Isis and University, neither of which are presented as ideal. The idealist Cendri claims a great many times throughout the novel that scholars of all genders are perfectly equal on University, yet she frequently contradicts herself through recollections. These recollections illustrate that gender equality on University has not yet been achieved, eliminating the option of University as a possible ›third cul-

ture.‹ This observation is underlined by the fact that Cendri, who has been trained on a planet she perceives to be gender-equal, is still overwhelmed when arriving on Isis. Clearly, she is not accustomed to seeing women as pilots, rulers, and firefighters. She observes that »[t]he pilot of the shuttle ship was a woman. Cendri had been prepared for this – intellectually – but the reality was a shock« (Zimmer Bradley 1). One might argue that Cendri's sentiment here reflects her own unconscious cultural bias. The work that has traditionally been assigned to men in Zimmer Bradley's world as well as on University, including the practice of science, is exclusively performed by women on Isis. Yet, Cendri soon overcomes her initial reaction when her anthropological training kicks in. As she observes the pilot of the space shuttle, she wonders:

> The observer in Cendri, the anthropologist she had been trained to be, asked automatically, uniform? Badge of office? I didn't think they had a space service of any kind, they have so little contact with the Unity. She wanted to clutch at Dal's hand, all the time knowing perfectly well that this was the one thing, here at the very entrance – officially – to the Matriarchate of Isis/Cinderella, that she must *not* do. (1, emphasis in original)

It becomes evident throughout the novel that Cendri, who is in the habit of deferring to her husband Dal for important decisions and who sees him as a source of comfort in this instance, needs to redefine both her sense of self and her relationship. On the one hand, the inhabitants of Isis would not react favorably to a public display of heterosexual affection. Rather, this would be seen as a severe breach of cultural customs, while homosexual affection is publicly accepted and encouraged on Isis. On the other hand, Cendri realizes that she has so far not been treated as Dal's equal, nor does she perceive herself to be, as the following example illustrates. When confronted with the prospect of acting as senior scientist in a discipline that is not her own, Cendri panics:

> Cendri clamped her teeth in her lip, and thought, not for the first time, *I'll never be able to handle this. Not even with Dal's help. Never. Maybe the Unity is right, not to give assignments like this to women. I know I'm going to make a mess of this one! It's going to be rough on Dal if I fail at this – and maybe worse if I succeed. Women on Pioneer are never Scholars; there hasn't been a Scholar Dame from Pioneer in the history of University!* (7)

Cendri's deliberation that Dal might be more upset if she succeeds in her assignment of posing as archeologist than if she fails reveals a great deal about their relationship and the distribution of power therein. Cendri blames this imbalance on Dal's upbringing on the patriarchal planet of Pioneer, further pondering that »he had come a long

way in one generation, but culturally imposed social attitudes were not changed overnight« (9). It might be of interest to note that Isis has not sent any scholars to University either, neither male nor female. The reason for this is however not gender, but Isis' general separatist policy and its distrust in the Unity, which the rulers of Isis justifiably believe might seek to destroy the Matriarchate. In order to accommodate Dal and his patriarchal upbringing, Cendri decides after their marriage that »perhaps one advanced degree was enough in the family,« noting how she herself »had no particular ambition, now, to be a Dame« (9).

Throughout the novel, Cendri needs to maintain a balance between her own scholarly success and her relationship with Dal. She tells the readers multiple times that she has taken time off from work after her marriage, as was customary for female scholars in the fictional world. There are parallels to Zimmer Bradley's own world insofar as Helen Shen reports that to date, »female postdocs who become parents or plan to have children abandon research careers up to twice as often as men in similar circumstances« (22). Even though Cendri's choice is not unusual for a woman from Beta Capella and she and Dal do not yet have children, the decision to take time off from work in hindsight seems to prove to Cendri that she is not a »serious scholar« (Zimmer Bradley 49). She ruminates that »a man, a serious Scholar, wouldn't have done that. Women just *aren't* as serious about Scholarship as men!« (49, emphasis in original). It is thoughts like these that illustrate Cendri's own bias about women in society and in science, including herself. They further reveal underlying cultural assumptions grounded in what Cendri perceives as natural, biological differences between women and men.

Since Dal's and Cendri's relationship, which was established on University, is not equal, observations like Cendri's confirm that University does not constitute a possible ›third culture‹ within the novel. Both on University as well as in the United States, it might merely have become harder to detect ongoing mechanisms of gendered discrimination within the sciences at the time of the novel's publication. Where previously these mechanisms had been clearly visible in terms of women's exclusion from higher education in general and science more specifically, the masculine-coded values of science and resulting beliefs in women's abilities constitute a subtler form of marginalization. Cendri repeatedly notes that there are, in total, fewer female than male scholars on University, that men hold more advanced positions than women, and that women are especially well represented only within the social sciences – a fact that is further emphasized by her own status as anthropologist (cf. Zimmer Bradley 7; 19). Plainly put, gender »shapes location, rank, and rewards in science« (Frank Fox 208), so that men hold »the key positions of power and authority« on University as well as in Zimmer Bradley's reality (Flicker 308).

Because Cendri has been taught to see University as a planet characterized by gender equality, she has to explain existing gender discrepancies in the sciences through other means than through a sexist (scientific) culture. Accordingly, she supposes that:

> If there were fewer Scholar Dames than Master Scholars and Scholar Doctors, surely it was only that fewer women were willing to compete for these advanced academic prizes. Psychologically, Cendri had learned, women were less competitive, she had seen it in herself after her marriage to Dal. (Zimmer Bradley 19)

Cendri here quotes psychological evidence, which she presents to the readers as a fact. She aligns this evidence with her own experience and does not question what she has learned, nor what kind of scientific culture might have produced her knowledge. Rather, Cendri chooses to believe in a kind of biological determinism, which effectively relieves her of the responsibility to critically examine her own choices and her relationship to Dal. Cendri's beliefs are further fostered by Dal himself, who is outspoken about his opinion on women in science – including his wife.

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If University can be seen as metaphor for Earth in the author's present, Dal's home planet Pioneer stands in for Earth in the past – a notion which is further underlined by Dal's interest in archeology. It does not sit easy with Dal that he, as a male scholar, has a female superior. Even though his mentor is one of the most respected archeologists of the Unity, and the only other scholar who shares Dal's particular research interest, Cendri observes that:

> Dal liked the Scholar Dame di Velo and respected her work. But it was clear that he found it hard to accept the notion that a woman could be his superior in position and status; she knew he was chafing until his own Master Scholar qualifications would make him the Scholar Dame's equal. He said often, as a joke – but he said it once or twice too often for a joke – *what would they think of me on Pioneer, taking orders from a she-Scholar?* (Zimmer Bradley 9, emphasis in original)

The term »she-Scholar,« which is reminiscent of »she-devil« and similar slurs for »a malicious or spiteful woman« (*Lexico* n. p.), clearly reveals Dal's attitude on women in science. When conversation lands on the topic of archeological research, he benevolently asks Cendri:

> Of course, you wouldn't be interested in [a] historical perspective, would you, Cendri? Women aren't – it's excusable, of course, *probably necessary for biological reasons*, but women always tend to live in the present, and leave historical perspectives for men. And women never seem even to define this as a fault! (Zimmer Bradley 45, emphasis mine)

The reference to biological reasons, which in Dal's opinion make women unfit for archeology, is important because it speaks to Dal's sexist views which he presents as scientific facts. Cendri in turn wonders if Dal »included the Scholar Dame Lurianna di Velo, one of the most notable archaeologists in the Unity, among those women who were unable to see anything in historical perspective,« but decides it is safer not to ask him (45). Throughout the novel, Cendri frequently bites her tongue to avoid confrontation with her husband, even when Dal clearly presents his research as superior to Cendri's, disregarding anthropology and other sciences like it as feminine and whimsical. He states that »[n]o society can ever be judged except in historical perspective,« thus denying his wife's contribution to scholarly discourse (43). Cendri, »who had heard this before without agreeing to it« and who is certain that »she would never agree to it,« yet lets his words pass without comment (43).

Throughout the novel, Dal not only disregards Cendri's personal interest in anthropology, he also ignores the field's scientific procedures where they might be helpful in navigating a new and foreign culture. When Cendri criticizes his impatient behavior by telling him that »the first rule for fieldwork in anthropology [is to] find out [what] the society's taboos and attitudes toward time [are], and just accept them,« Dal furiously responds: »[d]amnation, Cendri, I made a casual comment, I didn't ask for a lecture on anthropology!« (Zimmer Bradley 23). He is reluctant to adjust to the culture of Isis, convinced that instead Isis should adjust to the Unity and Dal's own customs. He is further disinclined to work together with the female scholars of Isis, who might support his archeological research. At the archeological site, Dal bemoans a lack of »ninety to a hundred men« (150) and creates an unnecessary confrontation by issuing orders to the female assistants from Isis, who are indignant (151). Yet, as reluctant as he is to accept women as scholars and the culture of Isis as valid in its own right, going so far as involving himself in a revolution on the planet which seeks to emancipate men, the inhabitants of Isis are equally slow to accept men as scientists and equals.

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On Isis, which constitutes Zimmer Bradley's thought experiment, men are seen as similarly unsuited to research as women are on the planets Pioneer and, to a lesser but still significant extent, University. When Dal asks the matriarch Mahala for assistants for his research, his request is initially denied since she insists »[t]hat until she has seen and spoken with the Scholar Dame she does not consider it wise to expose her students to the hazards of male scholarship« (Zimmer Bradley 141). What these ›hazards‹ may be can only be guessed at, but it is suggested that they derive from the foreigner's gendered culture of science which may somehow corrupt the female scholars of Isis. Of course, it is questionable whether science and scholarship are in themselves gendered, rather than having been gendered by the surrounding culture. There is a clever parallel to this notion presented in the novel when the rivaling matriarch Vaniya demands to know how »scholarship [can] be male or female,« since such a distinction seems to her »like speaking of the feminine nature of the atomic table of the elements, or the maleness of a volcano!« (141) This observation can be read as criticism of Zimmer Bradley's reality, where the language of science had traditionally indeed more often than not been gendered, presenting nature as a passive and hence female-coded object for the active male scientist to behold and conquer (cf. Merrick, *Secret* 224). To the reader, the matriarch's outburst thus becomes an ironic comment on extradiegetic reality, where the gendered language and values of science still need to be revised.

Science fiction can provide a vehicle for such a revision of the language and values of science. As Lisa Yaszek notes, especially science fiction in the eighties, which saw the advent of the internet and therefore a much broader exchange of knowledge(s), required »people – especially Western people – *to reconsider who and what counts within the practice of science and technology*« (393, emphasis mine). When Zimmer Bradley wrote *The Ruins of Isis*, science was still dominated even more so than today by a set of values which are largely aligned with masculinity. Men are seen as »intelligent and competent, rational, assertive [and] analytical«, which are all qualities essential for the practice of science (Davies 11). *The Ruins of Isis* evokes some of these values, but it also subverts them. On Isis, women rather than men are associated with the above-mentioned traits. Just like Cendri was not prepared to see women as pilots, the inhabitants of Isis, among them the archaeological assistant Laurina, are not prepared to see men as scholars. When Dal is able to begin his archeological work, Laurina is shocked at his abilities and laments:

> ›Cendri – Cendri, I am – I am frightened. I had never believed that a male could make a clear and comprehensive plan like this, full of logic and good sense. An adult, functioning male.‹ [...] ›I can understand – on worlds where males make the rules,

> their kind of scholarship is accepted as best, it *must* be,‹ […] ›but this – this is *real*. It is, perhaps, a little too linear, a little too left-brained, but it is real scholarship, real intelligence. It frightens me, Cendri, because I could not have done as well myself. And if a male – an adult male, subject to the compulsive sex drives which keep them from learning – can do this well, then where is the virtue or benefit in being a woman?‹ (Zimmer Bradley 161sq.)

Once Laurina discovers that one of the core assumptions of her society is incorrect, namely that men are less well-suited to scholarly work for biological reasons, her worldview as well as her sense of self are severely shaken. She had previously accepted it as a scientific fact that men are unable to perform as well as women intellectually due to a disproportionately high sex drive. In realizing that this accepted truth may be socially constructed, rather than based on scientific evidence, Laurina is suddenly faced with an abyss of former certainties that might now have to be reconsidered. It is interesting to see that the Matriarchate of Isis has employed the very same strategy to restrict men from science as has been employed in most Western cultures to exclude women. The following section of this essay thus takes a closer look at this phenomenon.

Using Science to Justify Social Paradigms

The fact that Isis too perpetuates a sexist culture of science in order to subjugate men is evident from the very first chapter onwards. The first example of this is provided by the pilot of the space shuttle, who transports Cendri and Dal to Isis. While Cendri is given the copilot's seat, the following accommodations are offered to Dal, who is here referred to as Cendri's »Companion,« while she is addressed with the honorific »Scholar Dame« (Zimmer Bradley 5):

> If the Scholar Dame is worried about her Companion – you can put it in the seat over there, and wedge it in with blankets. But I wouldn't worry. A few bumps and bruises don't hurt them, you know; they really don't feel things the way that we do. *That is a scientifically established fact*, Scholar Dame, and we have quite careful humane regulations to avoid accidental harm to males. (5, emphasis mine)

On Isis, men are not referred to with the pronoun ›he‹ unless it is used in a sexual context. Rather, men are treated like animals, complete with a collar or a branding to identify them. This treatment is based on the assumption that men are inevitably going to commit crimes against the female inhabitants of Isis if allowed to move freely, and punishments are harsh in order to prevent this. Scientific research is cited to warrant

such treatment, and further quoted to explain why men are excluded from higher education on Isis. As Cendri's friend Miranda reports,

> It is a *biological fact, long proven by any impartial scientist*, that the average man's brain is smaller than the brain of a woman, that female children are taller and heavier at puberty, and of course after puberty, males are so much at the mercy of their compulsive sex drives that it is impossible to educate them. (33sq., emphasis mine)

One can safely assume that all science that is available to the inhabitants on Isis has been produced by the women of this strictly matriarchal society and can therefore hardly be seen as ›impartial‹ when it comes to its conclusions about issues of gender. Science, as Zimmer Bradley imagines and likely experienced it, is not a neutral, value-free enterprise. This is why, ever since Donna Haraway's influential work in feminist science studies during the 1980s, scholars have argued for an embodied, culturally and historically situated science. Thus, »[a]n essential element of feminist interventions in the sciences has been the process of challenging the narratives, myths, and truth-claims of science,« as Merrick states (*Secret* 243). This includes deconstructing the myth of the infallibility of science (cf. Shepherd-Barr 49), the bodiless notion of objectivity and the passive voice, along with the overall »culture of no culture« (Rose 2). As can be seen in the aforementioned examples from Zimmer Bradley's novel, the inhabitants of Isis need to undertake a similarly deconstructive effort.

Initially, women on Isis believe that what they consider men's overwhelming sex drive is a just, scientifically proven reason for excluding men from higher education. But it is not only the alleged biological fact of their sex drive which renders them unfit for learning, as Miranda explains to Cendri early on in the novel: »*[i]t is a historical fact*, Scholar Dame, that every society where men were allowed to rule has been destroyed from within by wars, because of the competitive, aggressive nature of the male animal« (Zimmer Bradley 37). Interestingly, where Cendri had previously argued that a competitive nature makes men *more* suited to science, Miranda here maintains that it makes them *less* so. The very same ›fact‹ is thus used for two opposing purposes on the same matter of debate, which shows that, contrary to common belief, the facts do not ›speak for themselves.‹ Rather, it is humans who speak for them, since, as James J. Bono states, science is an »inherently interpretive and performative activity« (157). Accordingly, it is not only gender but also scientific facts which are »historically and culturally specific« (Mills et al. 14). By establishing a culture of science that favors women but maintains science's standing as one of the »great dominants of our contemporary life« (Le

Guin 5), social stereotypes about men and women are not lessened on Isis – they are simply reversed.

This reversal of stereotypes is illustrated by several instances where the inhabitants of Isis employ phrases which have been used on Earth during previous decades to justify the exclusion of women from science. The matriarch Vaniya for example expresses her surprise when she is told that Dal is Cendri's assistant as part of the ploy that the couple initially pursues. Not having expected a male scholar, Vaniya points out that »it did not occur to us that a woman Scholar would choose a male for assistant at her serious business!« (Zimmer Bradley 53). The matriarch then blushes and further inquires: »Don't you find it [...] distracting« (53)? The notion that male assistants could distract female scientists from their work presents men as sexual objects, which is emphasized by Vaniya's blush. Throughout *The Ruins of Isis*, men are both sexualized and infantilized, two strategies which have frequently been used for women in patriarchal cultures of science in both real life as well as film and fiction (cf. Haynes 310).

In a similar vein, it is argued in the sexist matriarchal society that men should not exert themselves too much intellectually. The exclusion of men from higher education and science on Isis is marketed as being for their own benefit. Vaniya asserts that »there is a *proven biological difference* which simply unfits men for certain tasks. It would seem to be *kinder* not to force men to compete in spheres where they are not qualified« (Zimmer Bradley 54, emphasis mine). Furthermore, as Vaniya argues, affording men a higher degree of education would divert them from their true purpose: »[Vaniya] glanced at Rhu and Dal, saying, ›You two must really not take this personally, but, Scholar Dame, don't you find it tends to *unfit a man for his real function*, when *he* is allowed to develop his mind too much?‹« (54, emphasis mine). Men's »real function«, as the matriarch puts it, is a purely physical one, which might be compromised by what is deemed an excessive degree of education. In line with Isis' cultural customs, the deliberate use of male pronouns in this instance hints at the sexual meaning behind Vaniya's words.

However, Vaniya is not only concerned with the effect that employing a male assistant could have on the assistant in question, she is also critically conscious of the patriarchal culture of science on University. Her inquiry as to why Cendri would have chosen a male assistant over a female one thus also aims at a different target, as the matriarch explains:

> ›I am not narrow-minded, I hope; I am not one of those who believes that learning makes a male somehow *unmanly*, and on some subjects I can converse with Rhu [her male companion] –‹ [...] ›*almost* as with an intelligent woman. But that is not what I

> meant, not entirely. You come from a society dominated by men, Scholar Dame – at least one where the academic prizes are mostly reserved for men. *So it would seem you might well have chosen a fellow woman for the prestigious post of your assistant, rather than choosing a man who could have won scholastic honors on his own.*‹ (Zimmer Bradley 53sq., emphasis mine)

Once more, Vaniya's assessment confirms the lingering patriarchal structures of University, where those few women who have managed to make a name for themselves in the scientific community are under additional pressure because their choices can either confirm or further disrupt the status quo. To actively counter these structures, Vaniya proposes a strategy which has since been introduced by Marieke van den Brink and Yvonne Benschop as »mobilizing femininities« (477). The term refers to the practice of women supporting other women in academia and especially STEM disciplines, helping each other to advance their careers. However, there are limits to the effectiveness of this practice, since the women involved are often accused of favoritism. According to van den Brink and Benschop, »[t]his makes it less likely that women mobilize femininities in the same unconscious way as men mobilize masculinities, because their support of other women is highly visible and not so easily taken for granted« (478).

Moreover, studies have shown that even female scientists subconsciously perceive women as less suited to science than men in a male-dominated culture of science, deeming men more competent and worthy of higher salaries than women (cf. Moss-Racusin et al.). This is a dynamic which Zimmer Bradley's novel represents by showing Cendri's self-doubts and surprise at the scientific achievements of the women of Isis. In order to persist in STEM, Mills et al. outline how acquiring »the identity of a scientist« can be regarded »as paramount for a successful career in science« (46). Since science is male-coded, however, acquiring such an identity puts women's perceived femininity at risk. Even though Cendri is an anthropologist, rather than a woman in STEM, she still faces similar challenges, which I will explore in the following.

Woman vs. Scientist

The assumption that a female scientist is »either not a ›real‹ woman or not a ›proper‹ scientist« (Flicker 317sq.) is something that Cendri continues to grapple with for large parts of the novel. She describes how when she met Dal on University, »she had been flattered that he had tried to meet her on an intellectual level, as a fellow scholar, rather than as a man meets a woman« (Zimmer Bradley 7). However, as this state is prolonged, »it had seemed almost a slight« to Cendri, who has started to doubt her own desirability (7). She recounts having felt »relieved« when Dal first developed a romantic and sexual

interest in her, »as if, in some way, he had confirmed the quality of her womanhood« (7). By the time the action of the novel takes place, Cendri has become accustomed to accommodating Dal, putting her own scholarly career on hold. She only learns to question Dal by entering an environment which empowers her and enables her to critically examine previously unquestioned power structures – such as University's culture and her relationship to her husband.

On Isis, Cendri begins to prioritize her own interests and research for the first time. Even as Dal is growing increasingly frustrated when his first visit to the ruins keeps being delayed, Cendri is thrilled at the added opportunity to spend time in the Matriarchate of Isis and to covertly pursue her anthropological research. However, the emotional work it takes for Cendri to lift Dal's spirits – and in doing so saving their relationship from suffering from her husband's discontent – presents a drain on her own energy, which she might otherwise invest in her work. To the reader, she relates that »[t]his was the beginning of the most complex and difficult assignment she had ever had; her first work as an independent professional, not a student,« which in itself presents a challenge (Zimmer Bradley 37sq.). Yet, the situation is further complicated by the fact that »she wasn't even free to concentrate on it, because all her emotional energy was taken up with worrying about Dal's feelings!« (37sq.) As a result, Cendri finds herself dividing her time and energy between her work and her relationship, negotiating between her roles as scientist and wife. It is uncertain to unlikely that Cendri would have expected similar consideration from Dal, who had previously been allowed to actively pursue his career.

The fact that Dal is unable to begin his research and act in accordance to the scientist role he is accustomed to for the first half of the novel negatively affects his sense of self-worth and masculinity. On Isis, Dal is regarded not as scholar, but as Cendri's legal property and responsibility. The only function he is socially allowed to perform is Cendri's sexual entertainment. Being unable to do his research while simultaneously being severely restricted in his agency – something he is not used to – prompts Dal to compensate the humiliation he suffers by asserting his sexual dominance and by becoming increasingly aggressive toward Cendri:

> Dal threw himself down in the padded alcove where they slept. ›Aren't you coming to bed?‹ ›Later, Dal,‹ she said, turning her back on him. ›I want to write up my notes for today. One of us ought to do some work.‹ He scrambled up; stood over her in a rage. ›That's not fair! It isn't my fault we haven't started the work we came here to do!‹ ›I didn't mean that,‹ she said, sighing. (Zimmer Bradley 83)

As can be surmised from this quote, Dal is not at all content with the fact that Cendri can work, while he cannot. He takes his frustration out on his wife, whom he frequently blames for the delay of the archeological investigation. In line with Cendri's character, she sighs and apologizes, something she does quite frequently throughout the novel. Instead of engaging in the argument, Cendri gives in and turns to Dal, putting away her notes since

> [s]he could not write them up in peace when Dal was in this mood. *It seemed there was only one way to placate his bruised pride*. She tried to make allowances for it; this was the only function he was supposed to have here, it was no wonder that he tried to make an impression the only way he could, to leave the stamp of his body on Cendri, to make up for his humiliation otherwise on this world. *But she found herself helplessly resenting it, enduring it, without desire, feeling used and exhausted*. (84, emphasis mine)

This scene clearly exemplifies the lengths that Cendri will go to in order to appease her husband, even as she does not enjoy his sexual advances but rather endures them. What is further conveyed in this instance is not only Dal's need to be in a dominant position over Cendri, it is once more also his disregard for Cendri's anthropological research, which he does not perceive as deserving more attention than himself. He interrupts Cendri's work because to him, her findings and the field of anthropology as a whole are irrelevant. What is carried out between Cendri and Dal is thus not only a struggle between private versus professional lives or genders, it is also a struggle between two scientific cultures, as the following section further explores.

Anthropology vs. Archeology

Far from being arbitrary, I would argue that Marion Zimmer Bradley's choice in staging the conflict between the sciences via the two disciplines of anthropology and archeology is an interesting one. From a literary perspective, having an anthropologist as sole focalizer is one of the easiest ways to explain a foreign culture to the reader via various mentor-mentee constellations (cf. Schaffeld 185). These constellations consist of an expert character explaining a (scientific) concept to a non-expert character, who stands in for the reader (cf. 185). Cendri, as anthropologist, is inherently propelled to find out how the society of Isis operates, and any information she gathers is immediately relayed to the reader through her thoughts and observations. Furthermore, as Yaszek maintains, anthropology offers a way to exchange »stories about outer space for those focusing on the inner spaces of individuals and their societies« (391). Focusing on

these inner spaces allows the novel to criticize the gendered structures of science and society. The most prominent inner space to be found is of course Cendri's consciousness, where she grapples with gendered constructs both in her own life as well as in her research. Considering that science fiction portrays the world not as it might be in the future but as it is in the present, Cendri's experiences can be seen as standing in for the experiences of many women in academia from the 1970s to date.

In contrast to anthropology and the science fiction genre, archeology turns to the past. As Julia Reid claims, »[t]he burgeoning of interest in archeology across the nineteenth century expressed the era's peculiarly urgent attention to the past« (357). It is perhaps no coincidence that Dal is from Pioneer, the very planet which I have argued represents the past in Zimmer Bradley's novel. By making him an archeologist, Dal's wish to reconnect to days gone by is made plain. In addition to »a nostalgia for a lost past,« Reid identifies in early archeology »an emphasis on ›taxonomies of cultural difference‹« (364), which can certainly be detected in the novel. While Cendri as anthropologist notes numerous cultural differences, she does not view one culture as better than the other but retains a professional neutrality. In contrast to his wife, Dal frequently stresses his own difference from and perceived superiority to the inhabitants of Isis, both the male and the female ones. The only presence he is interested in are the so-called Builders, an ancient alien race which may or may not still reside on Isis.

Because the novel includes such a presence and Dal's fascination with it, one is able to draw a parallel to the distinction between female and male trends within science fiction. In focusing primarily on technology, Hilary Rose claims that male-oriented, male-authored ›hard‹ science fiction can be said to fetishize »abstract intelligence itself, reducing humanity to a vast disembodied brain« (216). Perhaps it is no coincidence then that the presence Dal encounters among the ruins is in fact disembodied, even as it is later revealed to not be the life form that built the surrounding structures. When it comes to the Builders, Dal is not interested in them as a society and culture, but rather in the ruins of that society and culture, which exhibit extraordinary technological features. To Cendri, who admits that she could develop an interest in the past culture of the Builders, the ruins themselves are secondary. While male science and science fiction can be said to be »so firmly anchored in the male experience that it can deny the traces of [the] body and claim to be a product of pure consciousness« (Attebery 48), essentially reducing the body to the eye, the body very much matters to Cendri. As an anthropologist, Cendri is arguably exclusively interested in the kind of embodied, culturally situated knowledge, which Donna Haraway has advocated for and which Dal so utterly denies (cf. Haraway 583).

It is noteworthy that overall, Cendri cares as little about Dal's research as he does about hers, even as she enables him to study the ruins by posing as senior investigator. While such an effort could be seen as building a bridge between two scientific cultures and initiating interdisciplinary exchange, Cendri notes that:

> Frankly, she didn't care all that much whether the Builder ruins ever got explored or not. That, of course, was Dal's prime concern; as for Cendri herself, the longer the exploration of the ruins was delayed [...], the longer it would give her to explore and make notes on the fascinating and supposedly impossible society of the Matriarchate. (Zimmer Bradley 36)

The ploy that Cendri and Dal use in order to allow Dal to investigate the ruins, which he perceives as their primary mission, leads to increasing frustration and resentment on Cendri's side over the course of the novel. However, Cendri herself is at first unable to classify her own discontentment:

> She could only – if she were fortunate – follow his study and analysis of the ruins, and come to her own conclusions about the things she wanted to know about the Builders. And even that was a poor substitute, she thought *with a bitterness so deeply submerged that she was not fully aware it was there*, for spending her own precious and irrecoverable time on Isis doing his work instead of her own research into the live, growing, real culture of the Matriarchate which was all around them. How could Dal be content to waste his time on beings which had been dead for years, centuries, millennia? (144, emphasis mine)

As may be surmised from this and previous examples, the relationship between Dal and Cendri is classified by a distinct lack of communication, a »mutual incomprehension« (Willis 5) between characters of different genders and scientific disciplines. What is presented here on a personal level stands in for an accusation levelled by one scientific culture against another of being *unwilling* to understand, rather than entirely unable.

This unwillingness to communicate is further exemplified by the fact that while Cendri occasionally engages with Dal's research throughout the novel, there is little to no exchange between them concerning Cendri's discoveries about the culture of the Matriarchate. The one prominent exception where Dal displays a keen interest in Cendri's anthropological research is grounded in Dal's suspicion that his wife cheated on him during the planet's fertility ritual. While Dal's suspicion is justified since Cendri has slept with both a dozen Isis men and the archeological assistant Laurina on the occasion, it is telling that his male pride and sense of ownership over his wife are what

finally prompt him to inquire about her research. Cendri, however, being aware of Dal's less than generous view of anthropology, is not sure her husband would understand her version of events:

> ›Cendri, tell me about it!‹ he demanded, ›*Fertility rituals on undeveloped planets are all indecent*! If you're not ashamed of it, why don't you want to tell me about it?‹ Suddenly she was angry. ›Because I know perfectly well you wouldn't understand,‹ she flared at him, ›*You've made it very clear that you regard all these things as senseless native customs and superstition*; I'm not going to hold it up for you to ridicule!‹ ›Cendri, we agreed to share our work –‹ ›Share be damned!‹ She was really angry now. ›*What you mean by sharing is that you tell me what to do and we do it!*‹ (Zimmer Bradley 237, emphasis mine)

What is confirmed during this argument is not only Dal's opinion of Isis as a primitive planet full of »senseless native customs and superstition« (237), but also the unequal divide between Cendri and Dal's work. Where he has not displayed an interest in anthropology before, it suits Dal for personal reasons to suggest that he and his wife discuss their discoveries in this instance. While this conversation could have constituted a bridge between sciences and cultures in another setting, a productive exchange between spouses and disciplines is here rendered impossible due to the previous actions of both parties. On the one hand, Dal's jealousy and rage toward his wife as well as his proven contempt for her discipline as a whole and her object of study in particular complicate communication. On the other hand, communication cannot be achieved because Cendri has indeed cheated on her husband over the course of her research. While this can be seen as ethically questionable on a personal level, the novel further presents professional considerations of research ethics.

Both Cendri and Dal at times can be viewed as being in violation of a scientific code of conduct. Cendri studies the society of Isis against their explicit wishes, and, in doing so, herself becomes the traditional male-coded scientist observer who gazes upon a female-coded, objectified Other. Her role of heroic scientist is further emphasized by the fact that she too, like many other (male) science fiction heroes before her, takes a female lover in the alien society she studies (cf. Yaszek 386). In contrast to other science fiction works, however, the protagonist of *The Ruins of Isis* does not intend to alter the existing social structures by imposing her culture and worldview on the planet's native inhabitants. Dal, in contrast to Cendri, does seek to interfere with Isis' cultural customs, which he views as primitive. Similarly to Cendri's anthropological research, Dal does not perceive the culture of Isis as something that holds value in its own right.

This complicates any potential cultural or scientific exchange in both cases, increasing the divide between two cultures.

Towards the end of the novel, Cendri finds out that Dal has been sent to Isis by the Unity with the secret mission of initiating a revolution, even if it is against the Unity's own laws, a fact that raises crucial questions about Dal's position as scientist and his research ethics:

> *This is against the laws of the Unity!* [Cendri] thought, then berated herself as naive. Who but the Unity could have sent Dal on such a mission, primed with the passwords he would need? So much, she thought wrathfully, for the University code of ethics, of noninterference in the basic codes of a society! (Zimmer Bradley 170)

The Ruins of Isis here offers an intriguing example of the clash between research ethics and political interests. Science, which is to date largely dependent on funding, cannot always remain ideologically pure. Rather, as exemplified by my arguments on using science to justify cultural constructs and power imbalances, it can also be used to advance political agendas. Dal believes that the Matriarchate needs to be overthrown so that more access to the ruins is given to University scholars. Learning about his betrayal, Cendri wonders how Dal »could stoop to this – to entangle himself in Unity politics« (170). After all, »Dal was a scientist,« subject to »[t]he ethics of a Scholar of University,« which in Cendri's opinion »should certainly supersede the political struggles of the Unity« (170). His disregard for research ethics in Cendri's eyes makes Dal a compromised scientist, while he maintains that she herself is not a serious enough scientist because she is unwilling to go to the same lengths for the sake of discovery:

> She cried, shaken, ›And you'd destroy the whole culture of Isis for your damned Ruins, just to be the man who opened them to the Unity, just for your own personal ambition?‹ ›*And you call yourself a scientist!*‹ he stated at her in scorn and the beginnings of contempt. ›I don't believe you even care about the Ruins, Cendri!‹ (238, emphasis mine)

Compromising ethics for the sake of science allows one to classify Dal as an »amoral scientist« (Haynes 235), that is to say, a scientist who disregards the wider ethical consequences of their research, instead prioritizing their scientific interest above all else. It also underscores a problematic representation of science as an all-encompassing profession that demands absolute dedication, and in some instances, sacrifice. Dal is willing to destroy the Matriarchate, regardless of the fact that such an action has the potential of further complicating future relations between Isis and the Unity. Seen

through Cendri's eyes, the revolution Dal incites constitutes the loss of a culture as well as a threat to the Isis inhabitants she has learned to call friends. Yet, the revolution also presents an opportunity to create on Isis a new, third culture marked by gender equality. While Cendri recognizes that it may take a long time before such a new culture can truly be established – if it can ever be fully achieved at all – she is also content to remain on Isis and continue her work. Reporting back to University some time after the revolution, Cendri relates that »social mingling between men and women« remains limited, even though scholarly exchange with the Unity has been on the uptake (296).

This scholarly exchange is fostered by Cendri and Dal, who become permanent residents of Isis at the end of the novel. Being able to freely choose their place of residence reflects not only political change on Isis, but also speaks to an increased mobility in the extradiegetic world at the time of the novel's publication (cf. Yaszek 393). In the novel, Cendri publishes her work on the matriarchal society and receives the permanent title of Scholar Dame, even though it is not certain whether the inhabitants of Isis have agreed to such a publication. Dal leads the archeological investigation of the Builder ruins and the first women of Isis are allowed to study on University, while Isis invites additional scholars from the Unity. Dal and Cendri remain married to one another and conceive a child – however, having lived on Isis for a while, Cendri does not view this as a reason to take time off from work. As one may observe from these developments, many bridges are being built at the end of the novel – and yet it is uncertain if these are truly sufficient to provide a way across the deeply ingrained divide between genders, sciences, and cultures.

Conclusion: Bridging the Divide

By introducing two scientist characters from different disciplines, one male, one female, the novel offers a unique perspective on gender and science. *The Ruins of Isis* is both a product of its time in how it engages with the changing (scientific) culture of the 1970s and 1980s, as well as a response to earlier currents within the genre of science fiction. Just as Snow's lecture has by some been classified as a »call for greater comprehension« (Willis 5), *The Ruins of Isis* can be seen as making an argument for the overcoming of differences and conflicts between societies, disciplines, and genders. In relation to the »radical lesbian utopias« of the 1970s and 80s, Jane Donawerth maintains that *The Ruins of Isis* offers »a critique« of such complete separation (218). Indeed, I would argue that the novel advocates not for distance between the social worlds of men and women, the sciences and the humanities, and science and culture more generally, but for a way to reconnect these spheres.

This essay has combined science studies with science fiction studies, gender, and various notions of two cultures. If the two culture debate is »essentially a debate about different kinds of knowledge and the value of different kinds of knowledge« (Waugh qtd. in Willis 6), the same is certainly true for *The Ruins of Isis*. The novel can not only be seen as vehicle for addressing contemporary issues, such as gender equality in science, it also highlights that science is not an objective or value-free enterprise. Instead, the myth Western society has constructed around science can be re-examined productively if one's own position is tested and questioned. The novel achieves this by placing Cendri in a foreign society, which causes her to reflect especially on the gendered culture of science she had previously assessed as equal for all. As Isabelle Strengers relates, »[c]ontemporary anthropologists would certainly agree that immersing oneself in a different world, being willing to experience its manner of consistency and to experiment [tests] our certainties« (31). Being willing to test one's own assumptions becomes paramount not only for all characters of the novel, but also for communicating across scientific disciplines, especially since the position that science itself inhabits on University as well as Isis goes largely unquestioned. Science is, according to Charlotte Sleigh, »our most culturally credible force – the last word in many debates« (24), or in Le Guin's words, one of the »great dominants of our contemporary life« (5). It is one of those absolute certainties, which, if one follows Strengers' advice, might still be tested and experimented with. After all, it is only by questioning existing structures, that gender equality in science on this very planet might still be achieved.

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The author has no competing interests to declare.

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