Cora Zoé Övermann

Female Scientists at Risk:

The Representation of Career Challenges in Contemporary U.S. American Science Novels

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Cora Z. Övermann

List of Abbreviations

ACS	American Chemical Society
ASD	Autism Spectrum Disorder
AUSR	American University of Science Research
BAU	Bay Area University
BIO	Brayton Institute of Oceanography
CMV	Cytomegalovirus
DAST	Draw-A-Scientist-Test
FFP	Fabrication, Falsification, Plagiarism
HPLC	High-Performance Liquid Chromatography
ITIC	Information Technology Intelligence Corp.
LGBTQ+	Lesbian, Gay, Bisexual, Transgender, Queer, and Other
MIT	Massachusetts Institute of Technology
MOI	Maine Oceanographic Institution
NIH	National Institutes of Health
NSF	National Science Foundation
ORIS	Office of Research Information Services
PFD	Personal Flotation Device
PI	Principal Investigator
PMDD	Premenstrual Dysphoric Disorder
QRPs	Questionable Research Practices
SET	Science, Engineering, and Technology
STEM	Science, Technology, Engineering, and Mathematics
TOE	Theory of Everything
UGC	University of Greater California
WHO	World Health Organization

Contents

I. Introduction

Objectively speaking, there is no reason why science to date should be perceived by large parts of the population as a masculine activity. Yet, centuries of aligning scientific values such as objectivity, reason, and rationality with masculinity have certainly left their trace in contemporary Western society (cf. Colatrella 2021: 141; Fox Keller 6; Harding 82). While the average person has few scientist acquaintances, most citizens nevertheless have a readily accessible idea of the scientist in mind, who is White, male, heterosexual and middle aged. The absentminded, eccentric or even manic scientist is an image as iconic as that of Albert Einstein. In popular culture, works from decades past have thus painted the scientist in Einstein's image. It was only in 2014 that Roslynn D. Haynes eventually asked, "Whatever happened to the 'mad, bad' scientist?", noting how the stereotype of the singular scientist had slowly been eroded.

From the 1980s onwards, the decade that saw an increased interest in science both from a cultural as well as a scholarly perspective, representations of science and its practitioners have diversified. Since the 2010s, there is light in the laboratory, now "staffed by equal numbers of men and women, most young and enthusiastic" (Haynes 2014: 36). As recent works have moved on from the male scientist as "problematic individual" (cf. Kirchhofer and Roxburgh), theater, film, and fiction have instead begun to problematize the structures that the scientist operates in. As Peter Weingart and Luz María Hernández Nieto state, "two of the most notable characteristics of the recent body of fiction literature about science are the diversity of science-related topics that are dealt with and the detailed views they give of the internal world of science" (59). The internal world of science, however, is a perilous place, including "individual financial problems," scientists' "worries about their careers" and "collective concerns such as securing funding for research and the survival of research institutions" (Weingart and Hernández Nieto 60).

Having arrived in the twenty-first century, scientist characters now find themselves subject to the same pressures that have long governed many other professions. No longer isolated but fully integrated into a capitalist Western society, scientists in fiction "have replaced their quests to rule or destroy the world with more mundane goals, such as a patent, a Nobel Prize, the quest for recognition from their peers, or a tenured position at a university" (Weingart and Hernández Nieto 71). In effect, doing science has become risky in ways that extend beyond the uncertainty of research itself. Examining scientists in fiction today, Roslynn and Raymond Haynes assert that they are "subject to a unique set of career-specific risks and dangers, largely undocumented and unrecognized by the wider society" (78). The present thesis takes this deficit as a starting point.

Based on centuries of gendered and racial bias, it is especially demographic groups who do not fit the traditional image of the 'White, male, heterosexual and middle aged' scientist who are disadvantaged in the areas of science, technology, engineering, and mathematics (STEM). While this is hardly news, the discrimination that women, people of color, sexual minorities and young researchers experience have newly been integrated

into fictional representations of science. Due to this development and a growing corpus of so-called "science novels" (Schaffeld 2016a: 121), it is only now becoming possible to productively analyze cultural images of women scientists and the challenges they face in fiction. Hence, this thesis undertakes the effort to examine how women scientists are represented in works published from 1993 to 2019, which depict a period from the early 1980s to the late 2010s. Specifically, this dissertation aims to explore in how far risks for women scientists are shown as being both gender- *and* career-specific in contemporary U.S. American science novels, thereby filling an existing gap.

To date, scholarly research has either focused on wider connections between science and literature, or on the portrayal of the male scientist in film and fiction. Only singular works exist on the female scientist, such as Eva Flicker's "Between Brains and Breasts—Women Scientists in Fiction Film: On the Marginalization and Sexualization of Scientific Competence" (2003); Jocelyn Steinke's "Cultural Representations of Gender and Science: Portrayals of Female Scientists and Engineers in Popular Films" (2005); Carol Colatrella's *Toys and Tools in Pink: Cultural Narratives of Gender, Science and Technology* (2011), as well as her recent chapter "When the Scientist Is a Woman: Novels and Feminist Science Studies" (2021); Kerstin Bergman's "Girls Just Wanna Be Smart? The Depiction of Women Scientists in Contemporary Crime Fiction" (2012); and finally, Roslynn D. Haynes' chapter "The Scientist as Woman" in her influential work *From Madman to Crime Fighter: The Scientist in Western Culture* (2017).

As this brief list of works, which this dissertation takes as a point of departure, illustrates, there has so far been no extensive examination of the female scientist in literature specifically. Especially literature, however, has been assessed as an "area of unrealized potential" when it comes to the field of feminist science studies (Squier and Littlefield, 314). In 2011, Susan M. Squier and Melissa M. Littlefield have pointed out that "the fields of feminist science studies and literature and science share a commitment to reinterpreting the foundational premises of scientific theory and practice" (314–15). The present project has no ambitions quite so grand, but rather seeks to understand how science and gender, as well as the internal world of science and its resulting risks, are represented in contemporary fiction.

Fiction and the novel play a pivotal role in this research due to the novel's narrative structure. Through narrative, risks as well as characters' responses to it can be productively analyzed. According to Julia Hoydis, risk and narrative have always been inextricably linked, with the enjoyment and dangers of both depending on the uncertainty of not knowing what comes next. Risk is thus an integral part of narrative. "It creates suspense and threads of causality, and thus moves plots forward," as Hoydis explains (21). In effect, "the 'risk society' emerges together with the novel," which is "dedicated to plotting time and causality, coincidences and calamities while negotiating individual consciousness, characters' motives, fears and hopes" (Hoydis 23).

Based on the connections between risk, narrative, and gender, this thesis operates with a methodological framework of postclassical feminist narratology. As Jan Alber and Monika Fludernik elucidate, "[s]uch a deployment of narratological models places