

Communicative Experiences of African American Female Pilots on the Flight Deck:

An Application of Co-Cultural Theory and Narrative Nonfiction

to Inform Crew Resource Management

by

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ABSTRACT

This study sought to inform the curriculum of crew resource management (CRM) for multi-pilot flight deck operations. The CRM curriculum requires continued reexamination to ensure safe flight in the changing demographic of flight decks in the US. The study calls attention to the CRM curriculum's insufficient inclusion of robust training components to address intercultural communication skills and conflict management strategies.

Utilizing a phenomenological approach, the study examined the communicative experiences of African American female military and airline transport pilots on the flight deck and within the aviation industry. Co-cultural theory was used as a theoretical framework to investigate these co-researcher's (pilots) experiences. A parallel goal of the investigation was to better understand raced and gendered communication as they occur in this specific context—the flight deck of US airlines and military aircraft.

The researcher conducted in-depth semi-structured interviews and shadowed two co-researchers (pilots) for a period of days and built a relationship with them over the course of one year. Eight years of preparation working in the airline industry situated the researcher for this study. The researcher collected stories and interviews during this time immersed in industry. The data collected offers initial insights into the experiences of non-dominant group members in this unique organizational environment.

The study's findings are reported in the form of a creative/narrative nonfiction essay. This effort was twofold: (1) the narrative served to generate a record of experiences for continued examination and future research and (2) created useful data and information sets accessible to expert and non-expert audiences alike.

The data supports rationalization as a co-cultural communication strategy, a recent expansion of the theory. Data also suggests that another strategy—strategic alliance building—may be useful in expanding the scope of co-cultural theory. The proposed assertive assimilation orientation identifies the intentional construct of alliances and warrants further investigation.

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8. Notably, she was one of the first 10 women to pilot commercial aircraft in the US when women were finally permitted to work in this capacity in 1973.

To all whose names I did not mention, you are not forgotten. I will forever be indebted to you for the time, commitment, and encouragement you offered me.

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CHAPTER 1

INTRODUCTION

Overview

Challenges to the status quo have long created fear and resistance among dominant groups. Such resistance has been especially true among many of the White males who work as commercial airline transport pilots (ATPs). These elite pilots hold an ATP certificate (aka: license in other parts of the world)—the highest level of pilot certification granted by the US Federal Aviation Administration, which authorizes the certificate holder to act as pilot in command of scheduled airline’s aircraft. While progress is slow, public policies such as Affirmative Action legislation and the Civil Rights Act of 1964 have enabled non-dominant group members, including but not limited to women, Blacks, African Americans and Asians, to break into the once monolithic racial and gendered profession of ATPs.

Ashcraft (2005) examined how White male ATPs responded to these efforts and found that they co-opted structural changes of power by “embracing” and reframing their positions of power within the flight deck and within the organization. More specifically, Ashcraft explored the narratives of how White male pilots coped with what they perceived as a privileged occupation in decline through the feminization of their profession with the introduction of crew resource management (CRM) training. The current study attempts to extend her research by examining communication management and relational behavior patterns in flight decks but from the position of the non-dominant group member. Specifically, the study investigates the ways in which Black and African American female ATPs experience and manage their elite status as ATPs as non-

dominant group members. It is important to recognize the difference between Blacks and African Americans here, considering that participants in this study may not identify nationally or culturally as African American, having come from other nation states, but may identify racially as Black.

Cultural contracts theory (Jackson, 2002) argues that identity is constructed and negotiated but that as identities change, interact and vary, conflict arises externally and within groups. As minorities—including racial, gendered, sexual and religious minorities—make their way into the flight decks of commercial air transport aircraft (aka, airliners), continued resistance of the dominant class of ATPs may not only increase but has the potential to cause overt conflict among disparate groups that traditionally have not interacted socially by virtue of self-segregation (Dalmage, 2004, p. 64; Parrillo, 1996, p. 1029–103; Patillo, 2005). In this environment, dissimilar groups are forced to work in close quarters and within the codependent and hierarchical structures of the two-person flight deck operations that include a captain and a first officer. Given these changes and the potential for conflict, airlines likely will need to revisit policies, procedures and training scenarios to appropriately address them.

Crew resource management (CRM) (formerly called human factors training and colloquially dubbed “charm school”) was developed and implemented in the industry in the late 1970s and early 1980s after the addition of flight data and voice recorders. It was designed to address issues related to non-technical/non-mechanical aircraft crashes such as loss of situational awareness or communication breakdowns between crewmembers (CAA, 2006). This was a shift from a captain’s autocratic rule and authority to a culture that is more egalitarian and seeks input from all crewmembers (pilots, engineers and

flight attendants) during normal and emergency operations. What is potentially troublesome about the training and procedures is that the training was developed for, and in a time, when the industry was approximately 98–99% male dominated and largely White or Caucasian. The demographic profile of a pilot has changed, albeit marginally, creating a cultural shift in the flight deck.

Central to the model of CRM is a culture of behavioral expectations that includes acknowledging communication, actively seeking input from other colleagues, resolving conflict civilly, respectfully disagreeing with differences of opinion, and monitoring decision-making (LeSage, Dyar, & Evans, 2011). As changes in pilot demography slowly make their way from the margins to the mainstream, it has become necessary to investigate the communication norms and practices of underrepresented populations so that pilots may continue to operate in and enact an inclusive CRM culture. Successful CRM has led to reductions in incidence of aircraft accidents, reductions in patient morbidity and mortality rates in hospital settings, diminished loss of life in the fire service, and a decline in line-of-duty-deaths in police departments that have implemented a culture of CRM (Kanki, Helmreich, & Anca, 2010; LeSage, Dyar, & Evans, 2011).

Change in the demographic profiles of officers in the flight deck has disrupted the existing culture of masculinity and Whiteness. Today the profession includes 4% women and 10.2% non-Whites (US Department of Labor, 2012, Table 11). These changes have resulted in a shift in the communicative dynamic between pilots. Specifically, the discomfort of dialoging between cultures about race, gender or other marginalized identities is not only an inhibitory factor to open, frank dialogue about such issues, but it has also led to naivety on these and related issues. Unfortunately, the CRM literature does

not address the dynamics of intercultural communication. This lack of openness and understanding has in turn enabled stereotypical or strategic political messages to take a firm hold on public discourse (or lack of discourse) and has corrupted the principles of democracy by creating societal taboos (Allen, 1995) in multi-racial and multi-gendered flight decks. Taking a closer look at the racialized and gendered landscape of communication practices within the flight decks of commercial airliners not only can contribute to better communication at US airlines, but it also can contribute to understanding how employees in a variety of workplaces can communicate more effectively across race and gender lines.

In this study, Orbe's (1996, 2005) co-cultural theory is used as a frame through which to study the lived experiences of female military and commercial airline transport pilots who self-identified as Black or African American in order to understand how women of color negotiate their workplaces as well as how workplaces can improve their communication practices among diverse cultures. This study attempts to offer theoretical contributions that expand and build upon co-cultural theory by addressing, connecting and "testing" the theory's application in US organizations and the unique, autonomous work environment of passenger, cargo and military air transport airliners.

The Study's Impetus

The genesis of this study lies with a Facebook post. A friend and colleague who is an African American female ATP posted an update on Facebook in the summer of 2012. The post read something to the effect that she was stuck on the tarmac at Denver International Airport (for three hours at that point) because of a severe mechanical issue with the aircraft. Soon after the post, my colleague (I am a working crewmember, an

international flight attendant) showed me the responses to her post. Instead of consoling her for her frustrating day at work, the replies applauded her for “breaking down barriers,” being a role model for someone’s young child, and in general, for being present as an African American female in a profession that was originally, by design, exclusionary, a design that perpetuates its legacy by virtue of its historical ramifications. The industry’s decades of exclusionary hiring practices in the past and referral hiring practices that many airlines continue to rely on to recruit new pilots today helps maintain the status quo, in opposition to more recent policy changes that enable and promote “diversity in aviation.”

My colleague, whom I will refer to as Atoa, explained that while the responses to her Facebook post were “okay,” all she wanted was for people to “feel bad for me.” Instead, she felt she was forced into a specific character type—a role model and social activist, simply by posting her frustrations on Facebook. Thoughts about her dual minority status and an inquisitiveness about what it must be like to walk in the shoes of Atoa haunted my scholarly and social thoughts for more than a year. For perhaps the first time I began to wonder, “How did Atoa’s physical characteristics of being a female and African American change or not change communication in the flight deck?”

As a result, I began researching Atoa’s situation, which led me to choose this topic for my dissertation. To Atoa, I must give humble thanks for sharing that moment with me and for her willingness to speak with me about this project time and again by offering insight into the profession itself and into the intersection of race and gender communication in a specific workplace—the flight deck of commercial airliners.

Justification

The time is ripe for a study of this type. As Turney and Bishop (2004) argue,

In spite of what has been learned, cultural, social and organizational factors affecting women's employment in the aviation industry remain largely undefined. If effective air crew diversity is the goal, then it becomes necessary to continue to study differences and integrate diversity in the workplace. (p. 72)

Effective aircrew diversity—pilots who fly and communicate effectively to ensure the real investment of CRM, safe flight—is not possible without addressing the demographic changes within the industry.

In a frequently cited article, Houston (2002) called for the communication discipline to “explore relationships among African Americans and center Black communicative practices rather than Eurocentrically defined abstractions” (p. 36). Asante (1988) has called for similar changes in thinking about scholarship and African American communication since he popularized the cultural ideology Afrocentricity, a concept that was originally derived by public intellectuals during the 1960s civil rights movement. Asante subsequently used the term in his seminal book on the idea to explicate a theory of social change in 1988.

More importantly, perhaps, is that within the pages of academic literature a relatively small corpus of published research exists in relation to inter- and intra-racial African American communication. Few studies have investigated the topic on its own let alone the cross section of interracial communication within the workplace (Hopson & Orbe, 2007; Orbe, 2003). While communication research has traditionally been

scholarship of difference—looking at variables such as race, gender or sexuality separately (Ashcraft & Mumby, 2004)—the interplay of these biological, socially important constructs is equally, if not more important. Investigating such variables at the intersection, where a non-dominant group member enters an elite professional class such as the White male-dominated profession of ATPs, is of further significance. Studying them together is an important contribution of this work.

It is time to move beyond calls for action towards action (Allen, 2007). Action-oriented scholarship not only informs, but it also offers prescriptive texts and recommendations designed to better the lives of the work's participants. By examining the lived, communicative experiences of non-dominant group members with the same elite status (or class) of the dominant class, the study attempts to record and offer insight into the communication management strategies dual minorities use in their daily interactions with dominant group members in the workplace—specifically, the flight decks of US commercial airliners.

By the Numbers

The demographic landscape of commercial ATPs explains why it is important to examine the experiences of Black and African American female ATPs. The numbers are low, and the variables of racial composition along with defined gender identity make-up offer the study clearly defined variables. Black and African American's skin color along with female sex characteristics are exceedingly difficult to hide and assimilate into a hetero-normative, White male dominant co-cultural group, such as the one examined in this study.

Of the 129,000 employed ATPs and flight engineers in the United States, 4.1% are women and 2.7% are Black or African American (for point of comparison, 2.5% are Asian and 5.0% are Hispanic or Latino) (US Department of Labor, 2012). The Federal Aviation Administration (FAA) accounts for all aircraft certificate holders, not just those who are employed as pilots. The FAA figure offers a more global metric inclusionary of certified pilots that may be furloughed, terminated or retired in contrast to only those currently employed. According to the agency, there are 145,590 active airline transport pilot certificates, and of that number, women hold 5,818 or 4.0% of those certificates (Federal Aviation Administration, 2012a & 2012b). Table 1 below outlines the current state of affairs pertaining to active pilot licenses and type of pilot’s license for the year 2012 in the United States. Private pilot certificates (aka: licenses) are the least difficult to acquire, typically granted to enthusiast flyers, while commercial certificates are more challenging to obtain. Airline transport pilot certificates are the most challenging to earn and require years of aviation education, experience and many thousands of hours of flying time. For aviators, this certificate is often considered akin to what a doctorate is for a scholar.

Table 1

Active US pilot licenses for the year 2012

Certificate	All Genders	Female	% Female
Private	188,001	12,456	6.7
Commercial	116,400	7,536	6.5
Air Transport	145,590	5,818	4.0

(Table 1 continued)

Note. Adapted from “Table 1: Estimated active airmen certificates held as of December 31”, by the FAA, 2012a and “Table 2: Estimated active women airmen certificates held as of December 31,” by the FAA, 2012b. Retrieved from (2012a, Table 1 & 2012b, Table 2). Retrieved from http://www.faa.gov/data_research/aviation_data_statistics/civil_airmen_statistics/

Table 2 details the number of employed pilots and flight engineers for the year 2012, along with the percentage of that number who are female and the percentage of those who are of color (male and female), broken down into three race categories (Black or African American, Asian and Hispanic or Latino).

Table 2

Employed US Pilots & Flight Engineers for the Year 2012

Total	Women	Black or African American	Asian	Hispanic or Latino
120,000	4.1%	2.7%	2.5%	5.0%

Note. Adapted from “Household data annual averages, Table 11: Employed persons by detailed occupation, sex, race, and Hispanic or Latino ethnicity (employed US pilots & flight engineers for the year 2012),” by the US Department of Labor, 2012. Retrieved from http://www.bls.gov/cps/cps_aa2012.htm

The US Census Bureau (2010) reports that 49.2% of the US population is male and that a majority, 50.8% is female. Of the entire population, 6.8% are Black females (20,794,000) (US Census Bureau, 2011; See Table 3 for Black/White demographic breakdown).

Table 3

Population Totals for the US (2011)

Demographic	Total	Percentage
Combined (all)	306,110,000	100
Black	39,031,000	12.75
White	197,423,000	64.49

Note: Adapted from “Population by sex and age, for Black alone and White alone, not Hispanic: 2011,” by the US Census Bureau, 2011. Retrieved from <http://www.census.gov/population/race/data/ppl-ba11.html>

Of the 2.7% of Black and African American ATPs, a portion of them are women (likely less than 3% of the 2.7% subset). This equates to roughly .0007% of all ATPs employed in the United States (Zirulnik, 2013). This number is problematic when the entire US population is considered. Comparatively, 31.7% of the US population is comprised of White men (US Census Bureau, 2011) yet 95.9% of ATPs are men and 85.7% are White men (US Department of Labor, 2012).

While the total percentage of Black and African American ATPs is known (2.7%), the gender breakdown is not reported in publically available government or industry statistical reports. An exploratory study of this research project conducted in 2013 by the researcher estimates the number of Black and African American female pilots at less than 90 persons industry wide (see Appendix A). An investigation of the US legacy airlines concluded that 20 Black and African American female pilots are currently employed by these airlines (Zirulnik, 2013).

The designation of “carrier type” (e.g. legacy, major LLC, regional, fractional, etc.), with some exception, is a designation of class that represents the size and longevity of an airliner. The larger and more established carriers, often called legacy airlines, (e.g. United, Delta and American) and another class called major LLC carriers (e.g. Southwest and JetBlue) tend to employ the most experienced pilots and fly larger aircraft frames. With larger aircraft comes the added responsibility of transporting more lives and more cargo. Moreover, these larger airframes cost many millions of dollars more to purchase, maintain and operate than a regional or fractional airliner. While flying larger airframes is considered more prestigious within the industry, the pay disparity is a more telling factor. A captain on a regional jet may earn 50,000 USD per year, while the captain of a wide-body jet (e.g. Boeing 747) may earn 250,000 USD per year while maintaining a more flexible monthly schedule with more days off than a regional captain.

Unfortunately, data are not available regarding how many pilots are captains vs. first officers within the various racial and gender groups. Rank in this industry signifies positions of power within the organizations. In the hierarchy of flight operations, a captain has ultimate authority, command and responsibility for the aircraft, its operation, passengers and crew. This added responsibility is typically compensated monetarily. At times, the captains may make more than twice as much as the first officers flying beside them.

These data reflect the consequences of Ashcraft (2005) and Ashcraft and Mumby’s (2004) findings. Their research outlines the historical and intentional creation of what and who a pilot is—a White, physically strong and intelligent male who is confident, cool, calm and collected. “He” is a patriarchal figure created by the industry to

quell the apprehension of the public concerning flight risk and to reassure them that they are in capable hands. Thus, an entirely mythic, cultural and social construction became the model for what a pilot should be.

In part because of social constructions such as this, along with racial and gender stereotypes, women—and to a greater extent—people of color are overrepresented in occupations consistent with lower pay where employees engage in more menial tasks and have lesser social power. This includes janitors and building cleaners (18.4% Black or African American), maids and housekeepers (17.2% Black or African American), personal care aides (21.8% Black or African American) and cashiers (17.2% Black or African American).

According to Martin and Nakayama (2010), stereotypes are often useful in allowing us to make general assumptions about others we encounter so that we may more easily make sense of our social worlds and process information with efficiency. However, as they caution, though stereotypes are not necessarily inaccurate, they often tell an incomplete story. These stereotypes become problematic when they are used to discriminate and oppress.

Numerous social interactions, preliminary interviews and conversations about this topic have generated the cursory argument that this is simply the type of work women and men prefer and what Black and White (and other races) races enjoy—White men like to fly airplanes and Black women are much less interested in doing so. Such arguments ignore historical contexts, social construction and prejudice. It is more valid to argue that there are many more White pilots because the passenger air transport sector specifically created the image of pilots as White men. This construction was intentionally used to

exclude women and individuals of color from joining the profession until the 1970s (Ashcraft, 2005).

Institutional organizational theory suggests that workplaces form the normative standards of what employees ought to be, how they should look and what tasks they are expected to perform (Tomaskovic-Devey et al., 2006). In other words, industry-established norms help determine the gendered division of labor and racial structure of the workplace, which in turn creates and reifies public perceptions. Only when institutionalized public perceptions (the status quo) are challenged and boundaries are pushed can change result.

The concern is not only that the numbers of Black and African American female pilots is appallingly low (~ .0007%), but also that in comparison the total percentage of Black and African American women in US civil society (6.8%), there is a statistically significant underrepresentation of all non-dominant groups among ATPs in the United States. Findings from this study may offer insight into the challenges faced by non-dominant co-cultural groups working among (and with) a dominant co-culture, how these challenges affect individuals' decisions to perform these jobs, and how organizations can respond to the challenges and lack of diversity in their ranks.

This subject is worthy of study for two additional reasons: (1) it allows for an additional application and test of co-cultural theory in a new environment, and (2) it will produce a record of the communication behaviors enacted by non-dominant group members with dominant group members and offer insight into and understanding of workplace and organizational communication.

CHAPTER 2

THEORETICAL FOUNDATION AND LITERATURE REVIEW

Co-Cultural Theory

Orbe's (1996) co-cultural theory, an outgrowth of muted group theory (Kramarae, 1981), seeks to understand communication "from the perspective of those without power" (Orbe, 1998, p. 9) by incorporating standpoint theory (Harding 1987, 1991; Hartsock, 1983; Smith, 1987). Feminist standpoint theory argues that subordinate groups such as women must be studied from the perspective of a woman's lived experience and such findings may not necessarily have generalized applicability to all women (Smith, 1987). For the present study, co-cultural theory can help us understand the dynamic experiences, feelings and emotions from the perspective of non-dominant group members who must communicate within the structures of a dominant co-culture. This theoretical perspective is especially useful in attempting to explain how a traditionally marginalized population in the United States—Black and African American women—manage their day-to-day lived, communicative experiences in the traditionally oppressive, exclusive and patriarchal profession of airline piloting, points I will address later in this section.

Muted group theory, upon which co-cultural theory builds, is an interpretive theory that falls within the range of the critical and partly, the phenomenological tradition (Craig, 1999). While social scientific and similar perspectives assume the social and physical world preexists and seek to discover what is, phenomenological and social constructionist perspectives argue that the social world is created through language choices and interaction (Chomsky & Ronat, 1998; Pearce, 2007). For example, critical feminist theory asserts that the historical subjugation of women by men has occurred in

part by virtue of men's power over linguistic, dialectical and definitional trajectories (Harding 1987, 1991; Hartsock, 1983; Smith, 1987).

Muted group theory asserts that we understand our world through experience and by interacting and existing in a social space. We come to know it and to that extent we also come to create it when the opportunity for power exists (Kramarae, 1981). The theoretical underpinnings of muted group theory serve well where language is critical, as in co-piloted flight operations. Without clearly defined, agreed upon commands, checklists and procedures, the dual-piloted flight deck operation would falter. For instance, as one pilot flies the aircraft the other generally focuses on monitoring instruments as well as radio communication with other aircraft and air traffic controllers on the ground who are giving precise instructions on where to vector the aircraft, altitude and approaching aircraft (aka: pilot flying and pilot monitoring). Moreover, assertive and timely commands must be given to the pilot flying, such as "rotate." The pilot flying is instructed to rotate when the pilot monitoring instruments and velocity identifies the critical velocity (V_R) that allows the pilot flying to "rotate" or pull up the nose of the aircraft to gain lift and take flight from the runway.

The basic assumption of muted group theory is that the subjugation of muted groups through the control of language and definition is not values-free or values-neutral. Thus, muted group theory is values-conscious. What it does not offer is a way of speaking that provides equality for the muted group. For this reason, Orbe (1996) argues for the use of the term *co-culture* in place of *muted*. He asserts that "muted groups do not necessarily remain muted, but instead create strategies to overcome their mutedness" (p. 159).

Co-cultural theory differs from both muted group and standpoint theory in that unlike the former two, co-cultural theory seeks to recognize the marginalized from a standpoint that “unites *and* differentiates marginalized group experiences without essentializing them” (Orbe, 1998b, p.12). In essence, co-cultural theory seeks to recognize difference and sameness among and within co-cultural groups but does not give precedence nor prioritizes or generalizes the communication patterns and values enacted by a dominant co-cultural group over the patterns and values of a non-dominant group. Another way of explaining this difference is that co-cultural theory approaches research from the perspective of those who traditionally have been marginalized and is simultaneously grounded in the lived experiences of those individuals it seeks to study. While the original conceptualization of co-cultural theory (Orbe, 1998b) sought to give voice to traditionally marginalized people, more recent iterations of the theory also seek to understand the communication strategies persons of a non-dominant co-culture use to interact with individuals of dominant co-cultures to achieve a desired communicative outcome (Orbe & Roberts, 2012).

Co-cultural theory is a conceptual departure from classification and generalization that relies on a phenomenological approach to studying communication. According to Orbe (1998b), the theory “seeks to uncover the commonalities among co-cultural group members as they function in dominant society while substantiating the vast diversity of experiences between and among groups” (p. 12). This approach, according to Orbe (1998b), enables discovery and exploration of how oppressive practices (eg. racism, sexism, etc.) occur “at a personal, social, organizational, and institutional” (p. 12) level while simultaneously recognizing the multiplicity of ways in which these conventions of

oppression are manifested within and among co-cultural groups and individual members.

Co-cultural theory is grounded in five epistemological assumptions:

1. In each society, a hierarchy exists that privileges certain groups of people; in the United States these groups include men, European Americans, heterosexuals, the able-bodied, and the middle and upper classes.
2. On the basis of these varying levels of privilege, dominant group members occupy positions of power that they use—consciously or unconsciously—to create and maintain communication systems that reflect, reinforce, and promote their field of experiences.
3. Directly and/or indirectly, these dominant communication structures impede the progress of those persons whose lived experiences are not reflected in the public communicative systems.
4. Although representing a widely diverse array of lived experiences, co-cultural group members—including women, people of color, gays, lesbians, bisexuals, people with disabilities, and those from a lower socioeconomic status—will share a similar societal position that renders them marginalized and underrepresented within dominant structures.
5. To confront oppressive dominant structures and achieve any measure of “success,” co-cultural group members strategically adopt certain communication behaviors when functioning within the confines of public communicative structures. (Orbe, 1998b, p. 11)

These assumptions reflect an important foundation for this study, which seeks to understand the communicative experiences of non-dominant group members who exist

within an organizational context that is hierarchical in structure and is controlled by the dominant co-culture (see Chapter 1 section: “By the Numbers”). The corporate culture may impede the progress of non-dominant group members who must adopt prescribed communication behaviors to successfully operate within the bounds of their respective employing airlines.

Co-cultural theory (Orbe, 1996) further explicates “six interrelated factors that influence the process by which underrepresented group members communicate within dominant societal structures” (Orbe & Roberts, 2012, p. 296). These include: (1) preferred outcomes, (2) field of experience, (3) abilities, (4) situational context, (5) perceived costs and rewards, and (6) communication approach (see Orbe & Roberts, 2012, pp. 296-298 for a complete description of each factor).

These six factors that influence the process of co-cultural practice selection are described in more detail here. First, preferred outcomes is prefaced upon one question each person must ask of him or herself: “What communication behavior will lead to the effect that I desire” (Orbe, 1998a)? Co-cultural group members must consider communicative options available to them in order to achieve their preferred outcome in any given interaction. Three general outcomes exist: assimilation, accommodation and separation. Second, field of experience accounts for the sum of a person’s lifetime of experiences—a critical influence in a person’s evaluation and selection of what the individual considers an appropriate communicative interaction with a dominant group member. Third, ability refers to a person’s capacity to access and use available communication strategies. Not all persons have access to the co-cultural practices available or the ability to enact them. Fourth, situational context recognizes the elasticity

and variability of any give situation that influences the communicative practice or practices a person uses when interacting with (a) dominant group member(s). Fifth, perceived costs and rewards (advantages/disadvantages) of selecting a co-cultural practice cannot always be foreseen and depend on both field of experience and the preferred outcome sought. Sixth, and finally, communication approach refers to the way a communicative experience is enacted or performed. These include nonassertive, assertive and aggressive behaviors (discussed further in the subsequent pages).

Equally important in understanding the ways in which marginalized co-cultural group members communicate within organizations is a foundational model of nine communication orientations generated from an outsider within perspective (Orbe, 1998a) (see Appendix B for the *Outsider within Communication Orientations* Model). The outsider within perspective refers to a non-dominant co-cultural group member (the outsider) who exists, interacts, or works with or within the environment of a dominant co-cultural group. An example is a Native American female (a traditionally marginalized non-dominant group) chief executive officer running an automobile company (traditionally staffed by White men at the executive levels) in the US. To better understand how marginalized co-cultural group members communicate within organizations predominantly controlled by a dominant co-cultural group, Orbe's (1998b) model is set upon two distinct axes. One axis is titled "preferred outcomes" and the other refers to "communication approach." Each axis is factored further into three categories from which nine communication orientations are formulated. Preferred outcomes include: (1) separation, (2) accommodation and (3) assimilation, and the communication approaches include, (1) aggressive, (2) assertive and (3) nonassertive. Together these

compose the nine communication orientations: nonassertive separation orientation; nonassertive accommodation orientation; nonassertive assimilation orientation; assertive separation orientation; assertive accommodation orientation; assertive assimilation orientation; aggressive separation orientation; aggressive accommodation orientation; aggressive assimilation orientation (see Appendix C for a list of co-cultural practices and orientations summary) (Orbe, 1998a). Recognition of these nine distinct communication orientations is relevant to this study as it provides a base from which to identify existing or new communication orientations enacted by non-dominant Black and African American female pilots in the flight deck of US airliners that are predominantly staffed by White men.

Race Communication Research—An Absence Being Filled by Applications of Co-Cultural Theory

The absence of information on race and “diversity” in leading academic texts on organizational communication is alarming (Ashcraft & Allen, 2003). Ashcraft and Allen (2003) report that textbooks written by leading scholars in the field of communication fail to teach students—ultimately our future workforce and next generation of educators—how to effectively address and communicate about race in our public and private organizations.

This failure also was once true of communication research scholars. Twelve years after the US Congress passed the Civil Rights Act of 1964, Shuter (as cited in Orbe & Allen, 2008, p. 207) identified the lack of communication scholarship that emphasized racial groups other than Caucasians. Thereafter, research on people of color (namely African Americans) became more prevalent. This approach to studying people of color

unconsciously or consciously perpetuated the idea of people of color as “other” and blindly ignored the privilege of Whiteness by never questioning it (Orbe & Allen, 2008).

More recently, this gap in the literature has been addressed by scholars using co-cultural communication theory to investigate Afro Punk co-culture (Ramirez-Sanchez, 2008); dance-fight-game capoeira (MacLennan, 2011); and minority groups such as African American men (Orbe, 1994); women, gays and lesbians (Orbe, 1998a); first-year college students (Orbe & Groscurth, 2004); and the Roma “Gypsy” people of Europe (Gabor & Buzzanell, 2012). In the nearly 20 years since co-cultural theory was conceived, scholars have offered valuable contributions and extensions to the way in which co-cultural theory was originally conceptualized (Orbe & Roberts, 2012, p. 307).

For example, researchers have examined the communication orientations and strategies used by Black men in US career fields of high status, high power and high pay, (such as medicine, law, politics and education) that have oppressive organizational structures. Researchers found that non-dominant group members were mindful of their social position. Consequently, they tailored their body language and linguistic practices to adapt to the dominant group norms in order to allay perceived uncertainties or misgivings the dominant group may have had about them (Hopson & Orbe, 2007). A similar accounting of non-dominant group members was found in a study that investigated first generation college students (Orbe, 2003). In another study using co-culture theory, researchers Orbe and Camara (2010) found that non-dominant group members were unequivocally aware of their minority status and the oppressive or disadvantageous components that define their place in co-cultural settings.

Some of the first studies to use co-cultural theory as a framework or theoretical guide within organizational communication research were published in 2010. These studies looked at the ways in which disabled persons negotiate and manage assimilation within organizations (Cohen & Avanzino, 2010). Bridgewater and Buzzanell's 2010 study sought to understand the ways in which Caribbean immigrants make sense of their workplace communication through analysis of their storytelling. A later study sought to extend the use of co-cultural communication beyond that of non-dominant groups to include dominant group members who find the limits of current career theory not applicable to their particular circumstances—those working conditions that do not conform to traditional corporate or brick and mortar establishments (Gabor & Buzzanell, 2012). More specifically, the study applied the tenets of co-cultural theory to the work and family structure of the Roma people and “Gypsy careers,” which are by practice nontraditional when compared to careers of non-Gypsy people working in industrialized societies. The present study seeks to build on this initial research and to contribute to co-cultural theory by examining interactions situated within the structures of US corporations.

Segregation and Discrimination in Airline Transport Piloting

The aviation industry has a long history of discriminatory hiring practice and creating an unfriendly environment for White women and non-White men and women (Smithsonian National Air & Space Museum, 1999). Ignoring the aviation industry's racist and sexist history would be complicit in the sanitization of discriminatory practices that persist in corporate work environments. A review of the history of women and African Americans in aviation offers a platform from which we may begin to understand

the working environments in which Black and African American female pilots communicate. So too does the literature that follows on discriminatory practices and theories about segregation in the workplace.

At its inception, the airline industry rejected the idea of female pilots, because their “femininity” was not consistent with the values of individualism and masculine values (Mills & Mills, 2006). In 1924 the *International Commission for Air Navigation* (ICAN) and a year later the *International Civil Aviation Organization* (ICAO) banned women from employment as members of the flight crew (Cadogan, 1992; Penrose, as cited in Mills, 1998, p. 175). Even earlier, in 1918, the Women’s Royal Air Force of Great Britain banned women from flying aircraft and any related duties (Escott, 1989). Later, in the 1930s, officials of the Canadian government told Daphne Paterson that she was unsuitable to apply for a commercial pilot’s license because she was a woman (Render, as cited in Mills & Mills, 2006, p. 41).

Nearly a decade earlier, in 1922, Bessie Coleman, the first Black female to take solo flight in the United States, challenged the status quo just by attempting to take flying lessons. Gender and racial discrimination in the United States was so pervasive that not a single flying school would accept Coleman because of the color of her skin even though White female pilots were accepted as recreational enthusiast fliers. Consequently, Coleman moved to France where she was accepted to train as a pilot and graduated from flight school in just seven months. Upon her return to the US, Bessie Coleman was resigned to stunt and air show flying (Mills, 1995).

One year after Coleman’s death in 1934, Helen Richey became the first White woman to be hired by a commercial airline as a pilot; however, she soon had to give up

her dream because of a change in US government rules that disallowed female commercial airline pilots to fly in conditions other than fair weather operations (Mills & Mills, 2006). Nearly 40 years after these oppressive rules were imposed, the public would once again see female airline pilots emerge on the world stage when Frontier Airlines, American Airlines, and Air France each hired one White female pilot.

It wasn't until 1963 that a person of color was seen piloting a commercial aircraft in the US, when Continental Airlines hired its first Black male pilot, Marlon Green. This followed a US Supreme Court ruling found in his favor against the White-only hiring practices to staff the cockpits (aka: flight decks) of US commercial airliners (Reichhardt, 2007). Fifteen years later in 1978, Jill E. Brown-Hiltz became the first Black female pilot in the US when she was hired by Texas International Airlines (later subsumed by Continental Airlines).

In 1994 Patrice Clark-Washington, a native Bahamian, became the first Black female in the US to be promoted to rank of captain at a major commercial airline (UPS) (Smithsonian National Air & Space Museum, 1999). At that time, 11 Black females had been employed in the industry. Today, the numbers remain comparatively low.

Discriminatory Hiring Practices

For pilots of color in general, discriminatory practices used by commercial airlines continue. For example, in 1988 the Equal Employment Opportunity Commission (EEOC) found United Airlines in violation of a 1976 court decree that ordered the carrier to stop discriminating against minority and women pilot applicants (Key, 1988). More recently, in 2012, 22 African American captains and African American operations supervisors (all men) filed suit against United Airlines (presently United Continental

Holdings, Inc.; United Airlines, Inc.; Continental Airlines, Inc.) for its continued discriminatory hiring and promotion practices (US District Court, Case No. 3:12-cv-02730 MMC 2012). A court ruling is pending trial. (See Mills & Mills, 2006; Mills, 2005; Mills 1998 for more detailed historical accounts focused on the sexist and racist histories of US, British, and Canadian airlines).

In an analysis of segregation in US industry hiring practices using data from the EEOC for the years 1966–2003 that accounted for race, ethnicity and sex, Tomaskovic-Devey, et al. (2006) found that workplace desegregation stalled at 1980 levels for Black vs. White and Hispanic vs. White segregation. The failure has in part contributed to the monolithic demography of US ATPs and a culture of Whiteness and masculinity in the flight deck. The study also revealed that the Civil Rights Act of 1964 continues to benefit White women in the workplace far more than it has Blacks and African Americans. Tomaskovic-Devey et al. (2006) make clear that “because employment segregation is essentially a workplace process, it is likely that segregation levels and trends may vary substantially across communities and types of workplaces” (p. 566). In other words, while some workplace environments may report higher levels of integration, others are more skewed and report monolithic or near monolithic racial and gendered workplaces (e.g. all White or all Black). Consistent with current workplace data (US Dept. of Labor, Table 11, 2012), “race-ethnic desegregation is temporally, spatially, and industrially uneven” (Tomaskovic-Devey et al., 2006, p. 585).

Fernandez (1981) reports that during the last 30 years (when racial integration flat lined), White employees have assumed that the promotion of African Americans and Mexican-Americans was a direct response to their minority status—a matter of fulfilling

“quotas.” Meanwhile, these underrepresented populations are expected to assimilate into the dominant culture and leave their ethno-racial differences behind (Allen, 1995). All the while, research has identified companies preferring to hire “Latinos over blacks [sic] when filling positions in their organizations” (Elliott & Smith, 2004, p. 366; see also Moss & Tilly, 2001; Wilson, 1996). More compelling is a simple fact that “Black workers do not have an equal chance of being hired in predominantly White firms that hire through employee referrals” (Mouw, 2002, p. 516) a common practice of airlines. Such findings identify that organizations are not in the least bit colorblind. Neither are they blind to gender, sexual or religious difference that may be foreign or uncomfortable for employees and leadership comprising the status quo. Such sexist and discriminatory practices highlight the unwelcoming environment in which non-dominant co-cultural group members must contend with as an outsider within.

Co-Opted Self-Segregation

Women infrequently fill the most powerful positions within organizations typically occupied by men (Babcock & Laschever, 2003; Sandberg & Scovell, 2013). In the rare times women do take on powerful positions, typically they assimilate with the dominant class in order to survive (Acker, 1990); that is, they exhibit stereotypically male behavioral patterns. Acker (2006) found that only when women communicate like men are they afforded more equality and additional opportunity. Capt. Emily Warner, the first female pilot hired by a scheduled airline in the United States in her interview with United Airlines Captains Rick Wise and Jolanda Witvliet in 2000, illustrates the need for women to “become one of the guys.” When asked how other pilots at Frontier treated her, Warner’s response was:

When I first got hired [in 1973], the majority of the pilots were a bit cautious. Most pilots took about a year to warm up to the idea of women in the cockpit. After that initial period, I was just “one of the guys.” They did like to joke around a bit. I remember one day, when I was still a second officer on the B-737, the captain told me to check in [via the radio] with ATC [Air Traffic Control]. After I did, the controller then wanted to know if my seatbelt was too tight! [This was a joke refereeing to her high-pitched female voice on the radio in a profession dominated by the baritone voices of men]. (Wise & Witvliet, 2000, p. 29)

In general, women like Warner are less liked and more scrutinized when assuming positions of power even though they are performing the same tasks as a man in the position would (Sandberg & Scovell, 2013). Anecdotes such as the one Warner offers illustrate the added hardship faced by an outsider within.

The psychological and emotional consequences for Black and African American women breaking into the predominantly male, White profession of commercial aviation may be more grave than for White women when they attempt to break into high-paying, high-status positions (Berdahl & Moore, 2006; Feagin, 1991; Feagin & McKinney, 2003). The idea of entering a profession where levels of harassment and distress are elevated far above expected norms of stress due to one’s work is one reason minority groups may continue to be underrepresented in traditionally White, male-dominated professions such as airline transport piloting. Elevations in levels of stress and emotional distress is particularly true for non-dominant group members as Evans (2013) disclosed in her research on Black and African American pilots that included one Black female pilot and two Black male pilots.

Homogeneity of Airline Transport Pilots in Aviation

It is clear that the flight decks of commercial airliners are not the least bit inclusive and certainly not representative of the US population. While the answer to how this came about is historically rooted, hiring and network theories offer some explanatory value to the question of how flight decks have remained monolithic in terms of racial and gendered composition. In a quest to understand the communicative experiences of non-dominant group members within the confines of a dominant co-culture in the flight decks of US airliners shaped by corporate structure, the following offers some insight.

Acker (2012) uses a reflexive approach to reexamine theorizing about gender in organizations as a standalone variable and investigates its intersection with race, class and other variables that contribute to exclusion and subjugation. Overall, diversity and inclusion practices within organizations including Federal policy (Civil Rights Act of 1964) have had a patchy record of success (Acker, 2012).

The spatial-mismatch hypothesis is a popular theory that attempts to explain the racial divide in organizations in large urban communities (Mouw, 2002). According to spatial-mismatch hypothesis, organizations' racial divisions are a symptom of community self-segregation. In times of job growth, overcrowded urban centers create suburbs where jobs are created. As the jobs are filled, residentially constrained persons—primarily Blacks and African Americans—are unable to take these positions because of mobility issues. The geographic framework for the hypothesis is troubling in a multitude of ways including its myopic scope of geography as a primary determinant for workplace segregation and its lack of accounting for historical discriminatory practices in US commercial aviation. Although a popular idea that offers explanatory value, the spatial-

mismatch hypothesis does not apply when looking at pilot hiring. Major airports, the airline transport pilot's place of employment, are often located within or near inner-urbanized cities often populated by marginalized communities including Blacks and African Americans. Examples are Newark Liberty International Airport (EWR), John F. Kennedy International Airport (JFK), Miami International Airport (MIA), and Hartsfield-Jackson Atlanta International Airport (ATL).

Airlines are unique in that the workforce of crew—cabin crew (flight attendants) and flight deck crew (pilots)—transcend geographic boundaries. A large group of crewmembers commute to work via aircraft, sometimes flying internationally to get to their base (the airport where their flights originate and operation is stationed) where they begin their trip/workday. More typically, however, is that crew will fly transcontinental or over a few state lines to make it to work. As a result, the workforce is comprised of individuals with colloquial experiences, accents and values that may be even more diverse than a typical office environment where time and space bind the employees to a certain level of cohesion.

A more plausible cause of workplace segregation in the airline industry is the prevalence of informal hiring practices in conjunction with social segregation (Mouw, 2002) by race, gender and ethnicity. This in turn, allows the perpetuation and maintenance of gender and racial disparities within organizations (Acker, 2006). Employers that hire by referrals (either employee or acquaintance referrals) are more likely to hire employees that exhibit similar racial characteristics of the referring employee, hence the continuity in racial and gender composition of many organizations.

This segregation is perpetuated by a recruitment processes often referred to as real network effect as opposed to active exclusionary practices (Bygren, 2013).

Real network effect is a means of hiring through social ties that may be loose (acquaintance based) or moderate/strong based on recommendation and hiring of employees' former co-workers. For instance, "Compared with newspaper advertisements, the use of employee referrals reduces the chances of a Black worker being hired in a predominately White firm by about 72%" (Mouw, 2002, p. 516). Many airlines hire pilots based on referrals and recommendations including the use of formal recommendation letters from other airline insiders and vetted pilots. Such practices allow for the prevalence of an exclusionary structure within the ranks of the roughly 129,000 actively employed ATPs in the United States. This insider practice creates an unwelcoming culture when an outsider finally does enter this networked culture of pilots.

When addressing the mobility and the hiring and firing of minority employees, the minority vulnerability thesis proposes that segregation, job networks, and likely race-neutral employer decision making puts minority workers in a vulnerable situation (Pager, Western, & Bonikowski, 2009; Roscigno, Williams, & Byron, 2012; Wilson, 1996). In addition, even if race neutral-hiring practices are imposed, the informal hiring processes in place may limit minority employees' ability to get hired or promoted (Mouw, 2002).

It is likely that none of the ideas presented here alone can answer precisely why and how discrimination and segregation in the workplace operates. It is more likely that a combination of these ideas accounts for instances of occupational discrimination; that is, social demography, geography, socioeconomic disparity directly related to issues of

educational and occupational opportunity, access to employment through social networks, historical accounting, political motivation, and policy all are at play.

Perceptions of Female Pilots and How They Communicate

Academic scholarship concerning the experiences of Black and African American female ATPs goes no farther than sparse anecdotal stories documented by Evans' (2013) research that analyzed the interviews of three Black ATPs (2 males and 1 female) in a larger study on the emotional labor of Black pilots and flight attendants. Certainly undocumented in any significant way in the academic annals are the ways in which this group manages their lived experiences of dual minority status. Research on racially underrepresented first generation college (FGC) students offers some insight (Orbe, 2003). Due to their small numbers, FGC students experience a unique pressure to represent their race in favorable ways, perceiving that White students see them all in the same light as a unified group as opposed to individual beings (Orbe, 2003). This same work also found that these students had to negotiate the challenges of balancing numerous and conflicting cultural expectations of themselves and others (Orbe, 2003). According to O'Neill (2005), like FGC students, female pilots tend to be seen as a monolith as well and feel a pressure to perform better than their male counterparts while enacting stereotypical communication patterns and language of male counterparts.

Dominant groups often influence the non-dominant population to yield to its social and cultural norms and conform to standards even if those norms are uncomfortable, atypical or considered "wrong" in reference to the cultural and social norms of the minority group (Stage, 1999). For Black and African American female pilots, this may include engaging in stereotypically masculine behaviors such as

swearing, making sexual jokes or innuendos or verbally sparring with colleagues in an environment where White male ATPs strive to maintain an occupational identity as alpha-males (Ashcraft, 2005; Davey & Davidson, 2000).

Sex-Role Typing and Linguistic Manipulation

The Aviation Gender Attitude Questionnaire (AGAQ) (Vermeulen & Mitchell, 2007) was developed in response to the negative stereotypes and prejudices held by male aviators about female pilots. The questionnaire was designed to study the beliefs and attitudes held by male pilots about female pilots' ability and suitability as professional aviators. The questionnaire was validated through a study of 544 South African pilots; it is a useful tool for measuring and assessing perceptions concerning gender-related (female) pilot behavior. Specifically, the study looked at four factors: (1) flying proficiency, (2) safety orientations, (3) flight confidence and (4) flight standards. This study, along with a subsequent project that examined the gender-perceptions of 1,064 Australian pilots about female pilots on the flight deck (Vermeulen, Schaap, Mitchell, & Kristovics, 2009), concluded that female pilots unequivocally encounter sex-role stereotyping even though the stereotyping is often not articulated/verbalized within the organizations. That is, female pilots are secondarily identified by their professional role only after first being identified in terms of their gender.

Gender identification and sex-role stereotyping can lead to incidents of prejudice, gender bias and discrimination in the face of legislation or corporate policy intended to avert these negative behaviors (Davey & Davidson, 2000; Nicholson, 1996; Sitler, Turney, & Wulle, as cited in Vermeulen & Mitchell, 2007). Conclusively, Vermeulen and Mitchell (2007) reported that whether real or alleged, behavior is pervasively shaped and

influenced by perceptions based on gender differences (p. 199). Therefore it is imperative to manage such differences in two-pilot flight deck operations for the safety of the operation (Vermeulen & Mitchell, 2007). To ensure that successful crew resource management (CRM) is maintained, issues related to sex-role stereotyping, biases and prejudices need to be addressed in co-cultural/dual gender multi-crew flight deck operations. Only then can the aviation industry achieve and maintain effective communication behaviors between and among pilots who present divergent cultural, gendered and sexual attributes.

The use of linguistic manipulation, also known as code-switching, offers some group members the ability to assimilate or separate from the dominant group, depending on their communicative goals (Orbe, 1998a). By strategically choosing to use the linguistic norms of a specific co-cultural group, in this case Black or White, users seek to align themselves (and their identities) with other interactants. Conformity and assimilation into the dominant culture is one means of surviving. However, in workplaces where policy, procedure and scripts are used to guide communication and are enforced, code-switching then becomes an imposition upon non-dominant group members. The choice to, or not to, code-switch is coercive. In this case, non-dominant group members may have to yield to the norms of the majority—White male, hetero-normative ATPs—where heterosexuality is yet another assumed characteristic (Acker, 2006). These performances of assimilation behavior are acts of silent oppression by the dominant culture (McPhail, 1997).

Non-dominant co-cultural group members typically pursue three general preferred outcomes when coexisting within a dominant co-cultural environment: assimilation,

accommodation, or separation into or away from the dominant co-cultural group. The costs, risks, rewards and benefits of selecting one outcome over another are not fully understood nor is the choice of communicative approach (eg. aggressive, assertive or nonassertive) used to achieve each preferred outcome (Orbe, 1996, p. 170; See Chapter 2: section on Co-Cultural Communication for more details).

Recognizing, identifying, and then reporting the findings of this study may increase our understanding of the costs, risks, rewards, and benefits of specific communication strategies and outcome preferences of non-dominant co-cultural persons in the airline industry. The study may also inform policy makers on how to disrupt discriminatory work environments, which likely includes the promotion of open, clear communication among coworkers, so that an effective CRM culture may thrive in the flight decks of US airlines. Investigating and identifying inconsistencies or disruptions to the CRM culture in the flight deck is the first step to addressing this issue.

Communication and relationship management techniques and behavior patterns employed by Black and African American females in positions of powerful, high-paying occupations remain largely understudied.

Current research on gay/lesbian and transgendered individuals in the workplace (Brewster, Velez, DeBlaere & Moradi, 2011; Colgan, Creegan, McKearney & Wright, 2008) may shed light on other non-dominant group member's relational and communication management strategies choices. For example, gay/lesbian and transgendered non-dominant employee groups reported withdrawing from the organization and increased psychological distress consistent with findings on the impact on White female pilots who work in an autonomous and predominantly elite, White male

environment (Berdahl & Moore, 2006; Feagin, 1991; Feagin & McKinney, 2003; O'Neill, 2005).

Pressure and Performance Expectations

Scott (2013) found that Black women had to work harder and be more diligent in their work in order to be seen as an “exemplary team player” (p. 319) within organizations. In a study of predominantly White European female pilots, Davey and Davidson (2000) found that, like Black women within other organizational structures outside of aviation, female pilots had to perform better than their male counterparts and were judged more critically than male pilots. They also felt more pressure to avoid mistakes and generally felt more pressured to perform flawlessly. Moreover, the female pilots in Davey and Davidson’s (2000) study felt it necessary to laugh at and with male pilots who made racist, sexist and homophobic jokes (p.210). Using quick witty behavior as a defense or communication management technique when male pilots made crude or sexual innuendos or engaged in practical jokes resulted in women more often being seen as a part of the team as opposed to women who complained to management, who were often viewed as ‘dishonorable.’ Being labeled “dishonorable” also tended to lead to more adverse affects for female pilots (O’Neill, 2005).

Psychosocial costs are associated with not being able to complain to management without retribution from coworkers. Female pilots aware of such retribution enact behaviors that would not be seen by their male colleagues as “dishonorable.” However, Davey and Davidson (2000) found that, “Being aware of sexism, and other problems, but being unable to comment [to management], caused some anger, resentment and disillusionment among the women. Individuals sometimes reacted by distancing

themselves from the airline and from the flight crew community and by developing outside interests and friends” (p.216).

Overall, research examining the ways non-dominant group members experience their communicative interactions is largely absent in organizational communication scholarship. Organizational scholars struggle to utilize and embrace intercultural and international communication research appropriately (Connaughton & Shuffler, 2007) and therefore, are failing to address relevant workplace issues such as investigating and reporting the ways in which communication is experienced by non-dominant groups working within a dominant co-culture.

Too often, the organizational literature has employed Hofstede’s (1980) cultural dimensions but limited inclusion of other available intercultural literature in their attempt to discuss multinational and multicultural distributed teams (MNNMC). While Hofstede’s (1980, 1989, 2010) work on cultural dimensions was considered groundbreaking at its inception, intercultural scholars continue to uncover nuanced values and behaviors situated within national cultures, sometimes dubbed subcultures or as Orbe (1998) denotes, co-cultures. The concept of *cultures* as fluid structures as opposed to the idea of *cultures* as autonomous, discrete units is current with the research on culture and intercultural communication (Couldry, 2000).

By ignoring the complexity and nuances of cultural values within and among a national culture (which Hofstede reports on), the organizational communication discipline continues to fall short (Connaughton & Shuffler, 2007). Therefore, in this study I’ve remained open to the body of intercultural literature as a frame for examining the data so as to not assume stereotypes that all Black and African American ATPs are

alike with the same background, experiences, beliefs and values. However, as noted previously, co-cultural theory is used to frame the study's structure and analysis, which recognizes difference but not unified sameness.

Research Questions

RQ1: How do Black and African American female pilots manage their communication style and behavior when working with White male pilots in the flight deck?

Question's origin from the literature: The literature suggests that non-dominant co-cultural group members modify their linguistic patterns and vocalizations in order to behave in a manner consistent with the dominant co-cultural group (Harding 1987, 1991; Hartsock, 1983; Hopson & Orbe, 2007; Orbe, 1998; Smith, 1987). This question seeks to investigate if such behavior modification also occurs in the workplace of US commercial aircraft flight decks and is relevant to the co-researchers that are employed in this unique profession. The findings on communication behavior and experiences within the flight deck of US airlines may influence and inform the ways in which the industry teaches crew resource management (CRM) techniques. The potential value exists within CRM training as it was developed and is intended to reduce the instance of aircraft incidents and accidents based upon effective communication among and between pilots (and cabin crew).

RQ2: How do Black and African American female pilots navigate the racial and gender barriers of the airline transport piloting profession?

Question's origin from the literature: Research on hiring practices, specifically the literature addressing discriminatory and segregationist practices of non-inclusive

workplaces, suggests the ability to circumnavigate barriers to employment in said organizations is exceedingly difficult (Key, 1988; Mills & Mills, 2006; Mills, 2005; Mills, 1998; US District Court, Case No. 3:12-cv-02730 MMC, 2014). This is especially true for Blacks and African Americans in the United States. Addressing and documenting the accounts of individuals who possess a duality of minority statuses and who overcame these barriers may offer insight into how others may similarly overcome employment barriers.

CHAPTER 3

METHODS & ANALYSIS

A Phenomenological Approach

A phenomenological approach is appropriate for this study. Phenomenology diverges from traditional scientific approaches by promoting a less formal, more intimate and humanist relationship between the researcher and those s/he studies (McDonald, Orbe & Ford-Ahmed, 2002, p. 77). The approach is recognized for its aptitude for studying marginalized co-cultural groups (Orbe, 1996). Phenomenology's strength in studying marginalized groups exists in its attention to understanding the experiences of an individual from that person's perspective through recording and analyzing the narratives provided by the study's participants (aka: co-researchers). Narrative research and narrative learning has a long and rich history (Goodson & Gill, 2011; Gutkind, 2012; Lauritzen & Jaeger, 1997). Researchers collect narratives about the life stories of their co-researchers in the earnest effort to analyze and share that knowledge with scholarly and non-scholarly communities (Chamberlayne, Bornat, & Wengraf, 2000). Over a century of developing approaches to phenomenological inquiry led by scholars including Husserl, Heidegger and Sartre (Lanigan, 1979; Saldaña, 2009) have added value and rigor to the methodology.

Phenomenology follows several key assumptions that I adhered to in this study:

1. Rejects "objectivity," instead opting for recognition of one's subject-position in situ within the research process, while bracketing and identifying one's place and preconceived notions or biases. [Bracketing or holding one's biases out of the way while analyzing the study's data is a concept of Husserlian phenomenology; I

- have opted to follow the ideas of hermeneutic phenomenology which recognizes and records the researcher's perceived biases but does not believe in the ability to "bracket" or remove one's biases from the scope of analysis (Laverly, 2003)].
2. Seeks to gain a rich, descriptive understanding of the nature and meaning of phenomena. In other words, it offers readers a thick description of what was observed and recoded; it explores the topic being studied through the lens of the study's subject(s) as understood by the researcher. [The search to understand the "nature and meaning of phenomena" refers to reexamining the taken for granted occurrences in the situation in a search for neglected meaning (Laverly, 2003)].
 3. Does not identify or hypothesize what the study hopes to discover or identify.
 4. Remains open and unrestricted (e.g., Using semi-structured and open-ended interview scripts for interviews and open-ended moderator's schedule of questions for focus groups).
 5. Remains focused on studying "persons" not "individuals" where people are considered unique and dynamic whereas individuals may be grouped or categorized as a dataset including people, animals and objects.
 6. Focuses on studying the conscious experience of people (capta) by observing, communicating with, and interacting with co-researchers versus looking at the hypothetical or data per se. (McDonald, Orbe, & Ford-Ahmed, 2002, pp. 77–80)

The methodology's three general steps include: description, reduction and interpretation. The descriptive process requires writing in intimate detail about what is seen, heard and experienced (Gutkind, 2012). Reduction of the capta refers to a methodology for categorizing data thematically while excluding "noise"—dialogue or

observations that are not relevant or associated with the phenomena being studied. This requires the researcher to review transcripts, recordings and field notes repetitiously, in detail, over a varying period of time in an attempt to separate relevant data from the noise. Lastly, the process of interpretation focuses on finding meaning in what was not directly clear (McDonald, Orbe, & Ford-Ahmed, 2002). This is achieved through a rigorous process of data analysis that includes the persistent review of all available data (recordings, field notes, etc.) with continual reduction and focused coding until the researcher can no longer find additional or hidden meaning within the texts.

The methodology requires that the researcher become the human instrument used to analyze the data (Lincoln & Guba, 1985). According to 1937 Nobel Prize winner in Physiology or Medicine, Albert Szent-Gyorgi, “Discovery consists of seeing what everybody has seen, and thinking what nobody has thought” (Good, 1963, p. 15). As it pertains to this study, each of the three steps is detailed below.

Access, Co-Researchers, Capta, and Analysis

Gaining access to the study’s population (Black and African American ATPs) required constructing social networks through friends, colleagues and acquaintances. Partnering with members of the Organization of Black Airline Pilots (OBAP) also proved helpful in establishing my credibility as a researcher and interviewer with potential co-researchers.

Maintaining tenure as a flight attendant for nearly eight years furthered my ability to interact with and relate to co-researchers, in part because we were able to communicate in a shared language—the normative jargon each industry and specialized occupation maintains. This also provided me with the opportunity to experience many of the day-to-

day challenges of a crewmember, such as extensive travel, extended separations from family, friends and home, the long hours spent working onboard an aircraft, constant changes in climate and social environment, short and long-term effects of jetlag, dietary challenges in accessing food “on the go,” and a host of others that accompany an occupation that is, by design, transient. The experiential opportunities fell short of course, for I am not an airline transport pilot, a female, nor a Black or African American person.

The population of co-researchers this study focused on is estimated to number fewer than 90 persons within the United States (Zirulnik, 2013). The project required travel to the co-researcher’s destination (operations domicile/airport of trip origin or home city) to conduct audio-recorded interviews and, to the degree allowed, to socialize and live within the co-researcher’s domain (see Appendix D for the interview guide).

Again, because of the limited population, ensuring confidentiality of the co-researchers posed another challenge. Co-researchers were asked to select a pseudonym if desired to maintain confidentiality. Descriptive characteristics of the co-researchers would then be modified in the text to ensure confidentiality as best as possible. Co-researchers were provided with an opportunity to remain *visible* in the study if they desired to do so. This provided them with the option of agency (Korsgaard, 2009). That is, as members of a historically marginalized group, co-researchers were offered the opportunity to have their voices not only represented but also heard. The co-researchers who elected this option signed a release of confidentiality authorizing the use of their names in this and associated work(s) (see Appendix E).

A key concern was to remain conscious and self-reflexive so as to not generalize and essentialize the experiences of these individual Black and African American women

as synonymous, while also allowing the possibility that some thematic commonalities of perception and experience may exist (Bell, Orbe, Drummond, & Camara, 2000).

Two co-researchers agreed to serve as “informants” (Rubin & Rubin, 1995). The informants were my insiders; one is intimately involved with the work, organization and experiences (Lindlof & Taylor, 2002) of enacting the role of a Black female airline transport pilot, for it is a role she has enacted over the course of nearly two decades. The other is a White male pilot that self-identifies as a gay man. He also worked as a flight attendant, worked in the crew training division of a regional airline and subsequently has been piloting commercial aircraft as a captain for nearly a decade. Checking back with my informants regularly allowed me to gain additional insight, clarify terminology, verify narratives that were unfamiliar to me, and guided my inquiry with co-researchers that I interacted with. Moreover, my informants offered “insider” terminology that made me more knowledgeable and credible when communicating with ATPs.

The narrative profiles (see Chapter 4) were constructed from the interviews with two co-researchers and informed by a three-year immersion in the piloting experience through consistent inquiry and eight consecutive years of employment in the aviation sector at a large international airline based in the US. Audio recordings were transcribed and analyzed using an informal coding schema that looked for thematic similarities between the two pilot’s stories. Care was taken to not generalize the unique experiences of each person. The intent was to remain consistent with co-cultural theory’s premise, which “unites *and* differentiates marginalized group experiences without essentializing them” (Orbe, 1998b, p.12).

One hundred sixty-two double-spaced pages of dialogue were transcribed from the recorded interviews with the two pilots who agreed to be co-researchers for this study. Digitized field notes, including audio/visual files and recordings of interviews, observations and ideas from the more than 100 interactions with pilots and informants during the tenure of my immersion in the industry also make up the corpus of data. This data, if transcribed together would fill the equivalent contents of 10 composition notebooks.

This data includes, in addition to the above-mentioned persons and organizations, time spent in flight decks of commercial airliners; boarding military aircraft; sitting in on pilot briefings and debriefings in the civil air transport sector and the US military; visits to dozens of airports and crew rooms where pilots are based; visits to two military bases and their air operations and training wings (including transport, refueling and fighter jets); conversations with current and former enlisted members of the US military and officers of the US military (including Air Force, Marine, and National Guard unit members); photographic data, (including the images of flight decks, aircraft interiors and exteriors); video recordings of pilots communicating during critical phases of flight (e.g. takeoff and landing operations); archival data; photographic images of the two pilots who are the protagonists in the narrative; informal interviews and conversations with pilots, flight attendants, airport agents, security forces, airport operations employees and passengers with a focus on the inquiry of this study's thesis; thousands of hours and over three million miles traveled in aircraft as a passenger and as working crew of a global airline headquartered in the United States; a review of literature and statistical data totaling more than 100 academic, trade and government articles and data sources; and an

exploratory study (Zirulnik, 2013) to inform the demographic landscape of flight decks in the US.

Narrative Profiles

The phenomenological approach to inquiry in this study allowed me to write graphic, in-depth narrative profiles of the co-researchers that convey a more intimate and detailed account of the lived experiences of Black and African American female ATPs. These profiles, using the methods of narrative writing and creative nonfiction techniques, are designed to highlight key findings in the study (Gutkind, 2012). Each profile offers a depiction of the capta garnered from my time spent interacting with co-researchers and the in-depth interviews that took place over the course of a year of shadowing and follow up conversations with co-researchers.

Concerns and Outcomes of Creative Nonfiction Writing (a brief)

The creative component to writing findings within the genre of creative nonfiction enables a wider swath of readers a level of accessibility to material otherwise not gained in traditional social scientific writing (Bontea, 2012; Gutkind, 2012; Lauritzen & Jaeger, 2007). Polkinghorne (2007) addressed questions surrounding the validity of narrative research, which is central to writing creative nonfiction. The debate has created a split in camps: those focused on traditional scientific research and those who have split from that paradigm and become a part of the reformist community of researchers. Narrative scholarship within organizations continues to increase and offers theoretical, heuristic, and pedagogical contributions that are antithetical to positivistic research. Divergent from the authoritative findings presented in traditional positivistic social science research,

narrative research takes a phenomenological approach to investigation that is in situ with the communicative experiences of those being studied (Rhodes & Brown, 2005).

The fastest growing literary genre (Gutkind, 2012), creative nonfiction, also referred to as narrative nonfiction, is read faster, comprehended better and retained for a period of time far longer than non-narrative writing (Dahlstrom, 2014). The development and inclusion of narrative writing and narrative education within the top law schools and medical schools in the United States and around the world is evidence of narrative's value in our scholarly and professional practices.

While this section does not go into detail on the techniques of how to write creative nonfiction, the basic structure of creative nonfiction writing is to write story/narrative and then include a paragraph of information (educational details). This is followed by more story and so on. The "information" can be imbedded within story or it may exist within its own defined paragraph(s). The goal is to entertain and interest readers while simultaneously educating them (see Gutkind, 2012, for detail on the literary techniques of creative/narrative nonfiction writing). A humanist process of phenomenological orientation becomes a necessary pathway in the writing of creative nonfiction: from the method of inquiry to get the story and the information to the analysis and writing of the research. It is this perspective that allows creative nonfiction to connect with and to educate readers.

While the debate remains as to narrative's intention—whether as an outlet for social justice scholarship or simply as a way to share participant experience—the theoretical, methodological and outcome orientation debates will likely persist. What is evident is that creative/narrative nonfiction and narrative scholarship at some basic level

(and I'd argue at an elevated level within humanities and some social science research)
offers us a bedrock of social, heuristic, methodological and theoretical value.

CHAPTER 4

NARRATIVE

This is a story of quiet, subversive oppression—the kind that is difficult to see from land but is exceptionally powerful. It is also the story of two women triumphing—in their own ways—to do what they love in the face of opposition. It is much like the invisible currents of the wind racing forcefully above the relative calm of our streets. The kind you don't imagine existing but recognize when the mighty winds sweep down from the heavens and lift a house from its foundation or blow down a grand old oak tree with ease. Fortunately for most of us, we don't spend all day looking up at the sky, and when we do take flight, we rely on the expertise of others to offer us advice and guidance about when and where it is safe to fly. Those who don't have this access or information get swept away. These people fight the struggle. Some crash. Others continue to fight tirelessly. Some are subdued and others begin to negotiate the air currents, learning to glide. Once in a while, one or two are rescued but that's atypical. The women in this story have metaphorically leapt up into an open sky of raging currents, were tossed and tumbled and have approached points of crashing, always learning how to glide and create strategies for survival. What you will sense as you make your way through the narrative is a tension that is tireless and relentless. It is a demanding stress to live with day in and day out. It has become these women's normal—so much so that they are often blind to their own struggle.

The Captain took a seat as he looked Erika directly in the eye. “You're doing pretty good considering you got three strikes against you when you walked in the door.”

Erika is Black. She's a woman. And oh yes, there's that too...she's Guard. Not surprisingly for Erika, now 28, this would turn out to be the worst year of her life. "I gotta get out of this place," she told herself.

In her early 20s, Erika was still innocent and blind to the struggles she'd endure in life. The summer after graduating from the University of Arizona, she moved back to Phoenix where she had spent the majority of her childhood after her family escaped the cold blustery winters in Chicago and relocated to the warm arid desert. Erika's childhood was spent in schools and a community that was 98% White. She said she is more comfortable in a room full of White people than Black people. "I'd notice it," she said, "if I were in a room full of Black people." Little did she know that, statistically, not much would change when she left her old neighborhood and followed a passion for flying airplanes.

With a brilliant smile and a winning personality, it's hard to believe that Erika couldn't light up a room, no matter who was in it. Yet, despite her charm and a new degree in psychology, Erika was uncertain of her career path.

"I literally had no idea what I wanted to do," she said. "During spring break of my last semester I interviewed for a flight attendant job at America West."

At this time, America West was the smallest major airline in America and was colloquially dubbed America *Worst* for its no frills flying experience and older model planes. Still, until Erika figured out what she really wanted to do, a flight attendant at America West might be the perfect transitional job. After all, Erika's mom always called her "Miss Social Butterfly." Erika always coordinated get-togethers and parties. Becoming a flight attendant seemed like the perfect fit.

“I figured at least if I have a job lined up right after college, I'm not going to be lazy, sitting around doing nothing, and I can figure out what it is that I want to do while I do this ‘flight attendant thing.’”

A few months after beginning this interim job, Erika had just finished serving drinks to passengers when she popped her head into the flight deck. In the mix of their brief conversation, the First Officer said he owned his own airplane.

“If you want flying lessons, the first one is free,” he told her.

With her usual serendipitous attitude, Erika’s response was, “Okay. Sure! Why not?”

In the moment, Erika didn’t fully realize the opportunity she’d seized. In the United States, minorities and women in general don’t have access or encouragement to pursue flying or other culturally normative careers in science, technology, engineering and mathematics (Babcock & Laschever, 2003; Cvercek, Meltzoff, & Greenwald, 2011; Else-Quest, Hyde, & Linn, 2010; Hyde, Lindberg, Linn, Ellis, & Williams, 2008; IWPR, 2014; Lindberg, Hyde, Petersen, & Linn, 2010; Sandberg & Scovell, 2013; US BLS, 2014).

After her first lesson, Erika was inspired. “When you get bit by the bug you just can't imagine doing anything else.”

By living with her parents, Erika was able to pay for flight lessons. “I saved no money to go move out on my own, and I flew and flew and flew, and then I was like okay, I can't live at my parents house anymore. I gotta get out of here. So I can either fly, or I can move out. I moved out, and I quit flying.”

She continued working as a flight attendant, but it wasn't long before Erika realized this wouldn't be enough. She didn't just want to staff the aircraft. She wanted to fly it.

Flying lessons are expensive. Becoming a commercial pilot, if attending a four-year university, can cost upwards of \$100,000 (ERAU, 2014). There are less expensive options, but even then, students can expect to pay \$60,000 with the prospect of coming out of school with a menial piloting job that starts, in the best cases, at \$15 per hour. Becoming a pilot follows the path of many careers in that it takes time to build the experience and seniority necessary for good compensation.

In aviation in particular, it is often the children of wealthier families who are able to embark on this career, but the military provides another, more affordable option. Because Erika didn't come from a family able to financially support her flight lessons, her father encouraged her to apply for a pilot's position with the Air National Guard. According to Erika, "He bugged me about it for a year." That is, until she finally submitted her application. She didn't think much more about it considering the selective nature of the Guard. Without exemplary military service prior to applying for a piloting position, it is not easy for civilians be hired off of the street. Erika's application, and interviews were so strong that the military saw her fit for pilot training. Ten months after applying, Erika was hired, and soon, she was off to a year of flight school with the United States Air Force.

Just shy of attending pilot training with the Air Force, Erika continued on with her job as a flight attendant. Like so many other days onboard interacting with crewmembers, Erika was in the flight deck chatting with the First Officer. "I'm getting ready to go to

military pilot training, and when I come back, I'm going to fly KC 135s,"—those massive four-engine aircraft that refuel fighter jets in mid-air—she shared excitedly. Captain Moriarty, loosely strapped into his seat on the left side of the flight deck had his head buried in his newspaper. That is until he abruptly turned to the right, as he looked over the center console of the cramped flight deck so he'd have a clear view of Erika who was standing in the small space just behind both pilots. Its low slanting ceiling littered with control switches and knobs forced Erika to have to slouch so that she could remain standing. He looked at her and said with condescension, "You're going to fly KC 135s after a year of training?"

"Yeah," she responded.

Without missing a beat, Captain Moriarty, in a curt and reassured voice exclaimed, "I don't think so!" Moriarty turned back around, making the air whipping sound heard when someone shakes out the pages of a newspaper to eradicate it of its wrinkles while raising the paper back up to his face.

Erika shot back, "I'm pretty sure they're not going to find some other multimillion dollar airplane for me to fly because that's what everybody does!" Because she was a Black woman working as a flight attendant, the Captain was quite clear in his response that for Erika, this just wasn't a possibility. After all, few Black women had done what Erika believed she was about to do (Zirulnik, 2013).

Moriarty didn't comment or acknowledge her statement with even a simple shrug of the shoulders. His head buried deep into his paper, he would not speak to Erika again. All she could think to herself was, "This guy totally thinks that I can't do it." His doubt was a prelude of what was yet to come.

Close to the midpoint of flight training, it was a cool day late in the morning when Recruit Britt—Erika’s maiden name—was called into the sprawling office of her flight commander. Tall and slender with a runner’s build, buzzed Black hair, and a fair complexion, the Captain was in his early 30s. Erika was a few years younger—28.

Roughly half of all Air Force pilots receive their initial pilot training while attending the US Air Force’s Air Education and Training Command at Columbus Air Force Base situated nine miles north of Columbus, Mississippi (AETC, 2015). It was a part of the country where Erika expected she might confront racism whenever she had the chance to go off base. She was aware of the state’s historical segregationist practices that were not all too historic in terms of time gone by.

Erika walked in and took a seat on one of the many brown tufted leather chairs adorning the Captain’s office. There was a large imposing desk that signaled a position of importance. A sofa, chairs and a table filled the rest of the room. One door led out to the hallway and another led directly into the flight room where students would spend the better part of a day in lecture or studying their flight manuals whenever they weren’t flying.

The Captain took a seat as he looked Erika directly in the eye. “You’re doing pretty good considering you got three strikes against you when you walked in the door.”

Erika raised her eyebrows. “What are you talking about?” she asked. She assumed she knew two of the strikes—Black and female. “I didn’t know the third one he was talking about.”

The young Captain said, “Well, you’re female and you’re Black and you’re Guard.” Guard meaning Air National Guard. Insider knowledge confirms that there has

long been an unofficial point of contention between the enlisted Air Force pilots and the Air National Guard pilots who are not required to fly in a full-time capacity since the Air National Guard exists to ensure reserve air power in times of need.

Erika couldn't believe the Captain would count her status as Guard as a strike, but this paled in comparison to the other disadvantage to which he declared—Erika's identity as a Black woman.

"I just could not believe that he said that out loud," Erika exclaimed. Her shock was well-founded, but her response to the Captain's comments also reveals important information about Erika's expectations. She was surprised that the Captain gave voice to his attitude about her gender and race; she seemed less taken aback by the nature of that attitude.

"He was telling me that I was doing pretty good, but he wanted to make sure that I knew that there was a bias when I walked in the door and that I wasn't going to be able to do anything because of the three strikes I already had when I walked in."

Although antidiscrimination policy was enacted long before Erika joined the military, policy does not necessarily change the hearts and the minds of those who comprise the force. Stories like Erika's can be found across the nation from military life to civilian life.

At a mid-sized air cargo transport company, the human resources director shared a similar narrative of manipulative, indiscriminant racism, and sexism. "The Chief Pilot asked me to hire a Black female pilot so we could check off a 'diversity' box on a reporting form" (Anonymous, personal communication, 2013).

Satisfying the “diversity” box was necessary so that the company could keep their US government contracts. "Once I did hire that woman, the Chief Pilot came back to me and said, ‘Never hire another one [Black female pilot] again. Things are gonna stay the way they've always been around here.’”

A captain at a large regional airline said his company probably isn't going to hire Black pilots anymore because "they drop out of training or quit after a year" (Anonymous, personal communication, 2013). It’s an expensive proposition to hire and train a new pilot on your aircraft. For the pilot to make it to that place in the industry is a challenge and an investment of time and money. With the added pressure and contention of racism, sexism, and biased behavior, that airline and so many others fail to ask and address difficult questions of themselves. Questions of how they were treating, responding to, or making those who were not demographically similar to them feel when they joined the company’s piloting ranks.

An analysis of segregation in US industry hiring practices using data from the Equal Employment Opportunity Commission (EEOC) for the years 1966 to 2003 that accounted for race, ethnicity, and sex, shows that workplace desegregation stalled at 1980 levels (Tomaskovic-Devey et al., 2006). The failure has, in part, contributed to the monolithic demography of US airline transport pilots and a culture of Whiteness and masculinity in the flight deck of commercial carriers and the military.

For Erika and all of the recruits, Air Force pilot training consisted of a grueling year of flying, physical endurance, and mental strife. Pilots are expected to learn, memorize, and perform in the 85th percentile of their class. There is a certain phase of training when recruits can only get a predetermined number of questions wrong. The

pressure is so immense and the expectation is so great that the students—mostly referred to, in this case, as guys—often “gouged,” military slang for obtaining insider information. When used in this context, it refers to cheating.

Students, for instance, acquire old tests and study the answers. Since Erika was an outsider in this environment, she didn’t have access to the material, nor was she invited to participate in what made national news headlines in the ’90s and early 2000s. “I’m literally studying for all these tests the hard way by reading all the books...there's a lot of information in a very short period of time. They call it trying to drink from a fire hose.”

Keeping up with her studies was a challenge.

“I was what they call men running the little quizzes,” which means she was passing the quizzes but with the maximum misses allowed. According to Erika, “You can miss three, and I kept missing two or three questions on each of these quizzes. Everybody else was either missing none or one.”

Although gouging (cheating) is certainly morally and ethically wrong and no activity in which anyone should engage, it was a primary activity of the majority and illustrates the kind of alienation Erika experienced. While everyone else was cheating, Erika’s access to information and opportunity to participate in what the dominant group was doing was eliminated because of her race and gender.

“One guy in particular,” Erika recalls, “literally wanted me to fail. I know he wanted me to fail!”

A check ride is the practical test in operating the aircraft that pilots must endure in training and then annually or bi-annually. The check airman is a pilot with years of experience who has additional credentialing. Check airmen monitor and assess the

proficiency of a pilot. They have the authority to deny passage or even revoke a pilot's license to fly.

In spite of some of Erika's classmate's feelings about her presence in the military, she passed the practical test. There had been, without a doubt, many obstacles, but Erika was moving forward. She was ready for the next phase of training.

As time went on, Erika did her best to tune out the scrutiny that, to her way of thinking, was beyond the normal difficulty of Air Force flight school. This was the first time her charm seemed to get her nowhere. She wasn't the life of the party. She was no longer the social butterfly.

Classmates were asking Kevin S.—Erika's flying partner—if she could really fly, as if seven months into flight school, she was being given some sort of “pass” because she was the ‘Black girl.’”

“When we went into the second phase of training,” Erika explained, “we always flew with another student—two students and an instructor.”

Kevin was Erika's partner. The instructor always sat in the right seat and one student sat in the left seat. If you weren't flying, then you sat in the jump seat.

From the jump seat, Kevin could see everything that was going on in the flight deck. He could see the displays of instruments, the radios, and the yokes where Erika would push and pull to gain or decrease altitude. He could see the throttles—two steel bars rising up from the center console with rounded knobs, one for each engine. He could even see Erika's “foot work” as she pushed down on the floor pedals to move the tail rudder, banking the aircraft left or right, and compensating for crosswinds.

Erika was happy to fly with Kevin.

“My partner [Kevin] is a really nice guy, and he was not remotely in the realm of racist.”

When the other guys in Erika’s class asked him, “Can she really fly?” his response surprised, disappointed, and even shocked people.

Knowing that Kevin had this privileged hawk’s eye view of Erika’s every move in the flight deck, his judgment was valid and trustworthy. “Yeah,” Kevin answered. “She can fly.”

“Really?” they’d retort.

“In their heads,” Erika said, “the instructors were giving me a break or something. I remember another guy coming up to me and saying, ‘I heard that you can fly.’ He was actually trying to be nice and didn't realize what he said—how it sounded.”

His comment upset Erika, but she refrained from expressing her frustration.

“I tried not to react too badly because I know he was trying to be nice, and he knew that I hated being there and that everybody was being mean to me, and this was his way of cheering me up by telling me, ‘No, you belong here; you *do* belong here.’”

Erika knew she belonged in flight training, but she wondered when everyone else would realize she was one of them.

Research shows that the public cites quotas as the reason for Erika and other women and minorities being hired into positions of power and responsibility (Fernandez, 1981). Coincidentally, a number of studies show that minority pilots, including female pilots, are as capable, if not more capable and qualified, than their White male counterparts (Davey & Davidson, 2000). A landmark study conducted in South Africa and in Australia concerning perceptions about gender-related pilot behavior offers insight

into the gendered and sexist profession (Vermeulen & Mitchell, 2007; Vermeulen, Schaap, Mitchell, & Kristovics, 2009). The research reported negatively skewed perceptions of women's ability to fly and command an aircraft. Comparative analysis of male and female pilots in the US showed that pilot's level of skill and error was not gender related (Helmreich & Merritt, 1998). For female pilots in the US military, these perceptions likely hold true for them as well.

Back on base, it was a rather uneventful day, but Erika certainly realized the skewed perceptions some of her male counterparts had about her as a pilot. She had just finished a flight-training mission when she decided to walk across base to the store to pick up a few items. On her way back, she realized that her rings were gone. Erika reached down into the zipper pocket of her flight suit where she often secured her jewelry before flight—a requirement before taking to the flight line in the military. Jostling her hand around in the pocket, Erika realized the rings weren't there. One piece of jewelry, the pearl ring Erika always wore on the middle finger of her right hand, had particular significance. Her mom had purchased the ring while abroad in Spain in January of 1972, the same time that she was unknowingly pregnant with Erika. When Erika turned 16, her mother gifted her the simple pearl that sits atop a delicate band of gold. It was a treasure. Erika returned to the store and searched exhaustively but to no avail.

The loss of her cherished pearl ring was the rogue catalyst that set Erika in motion. "That was the last straw," she recalls. "I couldn't take any more." "These guys hate me," she thought. After all, they were always interfering in her business. Erika typically looks at the world in a glaze of possibility and optimism. If somebody is displaying some sort of animosity toward her, she automatically attributes it to a

personality conflict. “That's usually the first place I go,” she said, “not because I'm a girl or because I'm Black. It has to be pretty blatant for me to go, ‘Wow, you're a racist.’” And here in training, she was coming to believe that, in fact, she was facing quite a bit of unfair treatment and discrimination. A number of her classmates were vying for her failure. They refused to study with Erika and never was she welcomed at group social events. For the most part, Erika was alone.

“I gotta get out of this place,” she told herself.

Rather than return back to the flight room where she was expected to go—a room filled with classmates, many of whom despised her—she went back to her bunkroom. Erika sat at the edge of her bed. Holding her cell phone, Erika tried to figure out how to break the news to her mom.

“I quit,” she imagined saying. “I'm done. I quit! It's not that I can't do it; it's just I don't *want* to do this anymore. It's pissing me off!”

This was how she'd start the conversation.

“I thought my mom's going to be disappointed, my dad's going to be disappointed, my brother's are going to be disappointed, but they'll all get over it.”

And then, just before pressing send to call her mom, Erika thought of her not-too-distant encounter with a pilot—Captain Jim Moriarty—at America West just before she left for pilot training. He had been one of the first to tell her in curt condescension that, in essence, she wouldn't make it.

“Jim Moriarty, he's going to think that I flunked out of here,” she recalled saying to herself.

Erika put the phone down and went back into the flight room. When she returned to her bunk later that night, Erika did eventually find that ring. It was buried deep into the corner of another zipper pocket on her flight suit that she rarely used.

Now a graduate of the Air Force's flight training program, newly minted Lieutenant Erika Britt returned home to Phoenix. At the Air National Guard base where her flying career would take hold, Erika was assigned to fly the KC-135 Stratotanker built by the Boeing Corporation and first delivered to the US Air Force in 1957. The youngest of these jets is 58 years old at an average cost of \$39.6 million. The military intends to replace and retire the entire inventory of over 400 tankers by 2040; it is an aging fleet whose youngest member will be 75 and its eldest 83. Painted in a solid grey known to the military as "Dark Ghost Grey" and officially as FS:36320, the color makes it difficult to see the aircraft at cruise altitude when viewed from the ground.

Refueling aircraft in mid-air is the Stratotanker's primary mission—to enable and ensure global reach of the US military's airpower. The Stratotanker also has the capability to transport cargo and passengers. Beyond that, the KC-135 can operate as an aerial command post and even fly reconnaissance missions. Its wide cavernous cargo deck allows it to transform into a flying hospital and operate as an aeromedical evacuation unit staffed with two flight nurses and three medical technicians.

The four-turbofan engines offer pilots 86,536 pounds of thrust compared to the more familiar civilian 737 passenger jet series with max thrust of 27,500 pounds. The KC-135's impressive thrust capacity is what makes it capable of taking flight with a maximum takeoff weight of 322,500 pounds. Its massive wingspan of 130 feet, 10 inches

is 5 feet, 5 inches shy of the aircraft's overall length. It stands on the ground at an intimidating four stories high.

Unlike the easy access jetway many of us have become accustomed to in civilian airports, Erika and her crew popped open a small 2 by 3 foot portal near the bottom of the aircraft situated just behind the flight deck. She pulled down a narrow ladder that slid out and climbed up the vertical ascent. Passing into the hull of the airship, she pushed open a metal grate in the floor that hovered above her head. Climbing into the dark cavernous body of her KC-135, she began to disappear. Just the soles of Erika's military-issue boots and the tip of a navy blue garrison cap poking out of a zipper pocket on the lower right leg of her sage green flight suit were visible.

Onboard, there were no walls separating the cargo area from the flight deck. The only interior walls were those separating a toilet and three lidded pipes (urinals) that comprise the one onboard bathroom. There were two ports of natural light onboard an otherwise windowless aircraft. There was a windshield in the flight deck and one other portal. To find it, you had to walk to the aft section of the ship and climb down into one of two wells on either side of the aircraft set below the floor of the cargo deck, which sat above the fuel tanks. As I dropped down another couple of feet into a bed-like space, I found a joystick, a radio headset, a footrest, and a chinrest like the kind you might see in an optometrist's office. This space was for the boom operator. The operator lays face down, looking out the panoramic windows from nearly 30,000 feet above the earth.

When a military jet needing to refuel pulls up behind and just below the KC-135, the boom operator can lower the boom, connect to the other ship's fuel portal and begin to offload up to 200,000 pounds of gas into their thirsty tanks. It's a harrowing operation

and requires the focus and concentration of the entire crew. If something goes wrong, the boom operator instructs the pilots to “breakaway, breakaway, breakaway” while disconnecting the boom as pilots of both aircraft swiftly pull away. The worst-case scenario is a mid-air crash. Such was the case off the coast of Spain when a KC-135 and a B-52 bomber collided while conducting a refueling operation at 31,000 feet. All but three crewmembers survived the 1966 mid-air accident (Flight Safety Foundation, 2015).

A C-130 approaches with its mass and girth. The four turboprop fans tear at the sky at thousands of revolutions per minute. When connected to the boom, Erika’s aircraft and the C-130 she’s tasked to refuel cruise through the sky as one unit. There are 15 feet of clearance between the tail of Erika’s ship and the striking fan blades of the C-130 Hercules. It’s a perilous mission.

A mass of metal loaded with 200,000 pounds of fuel and 83,000 pounds of cargo, Erika’s jet can sprint through the air at 530 miles per hour. “It’s a lot of airplane,” Erika recounts. To hand-fly this colossal jet requires the pilot to hold onto the yoke. It’s a constant force of pushing and pulling. The equivalent force is that of holding a 2 or 3-year-old child weighing 20 to 30 pounds. Erika was always strong but realized the construction of the flight deck was based on a man’s anthropometry—the objective and measurable physical characteristics of the human body that impact ergonomic industrial design (Donelson & Gordon, 1991; Gordon, et al., 1989; Gordon & Licina, 1999; Kozycki & Gordon, 2002; Zehner, Meindl, & Hudson, 1992). She noticed that to fly this plane required more upper body strength than she had anticipated.

“So I started doing pushups, and then I realized it makes flying a lot easier. It’s not as much work” she said. “But I’m still a girl and the muscle mass is different.”

Her idea paid off. The workouts made her life a lot easier because now she was not fighting against physics.

Contending with physics and industrial design that never accounted for the female body, Erika was also countering doubt and questioning of her ability to fly simply because of her status as a woman—and a Black woman at that.

“I’m like a unicorn,” she would tell her husband. “Black women pilots just don’t exist!”

Until two years ago, she had never seen another Black female pilot. Not surprising since the legacy airlines—United, American, Delta, Alaska and Hawaiian—employ just 20 Black female pilots in total. Eleven of them work for United Airlines (Zirulnik, 2013).

Compounding the existing challenges, Erika was held to a different standard than her male counterparts. “I was expected to know more about the plane than the general population. Maybe it was because I’m a girl. I’m inclined to think it was because I’m a girl. Less about the race thing but more about the girl thing, but I had to learn the hard way.” There are two large manuals that pertain to the KC-135. Each one is over 1,000 pages. A few other books, also thousands of pages and relevant to flying, were specific to military aviation regulations. The men Erika flew with expected her to know every bit of information contained between the covers. A number of interviews and studies with female pilots point to similar demands on knowledge regurgitation and “testing” of these women’s knowledge by their superiors and even their equals (Ashcraft, 2005; Ashcraft & Mumby, 2004; Davey & Davidson, 2000; Mills, 1995; Mills, 1998; Mills, & Mills, 2006; O’Neill, 2005).

“We've got books on the airplane. If something happens, most of the time we're supposed to pull out the manuals and look it up. The stuff that we're all supposed to have memorized, I have memorized,” Erika exalted.

For Erika, though, that doesn't seem to be enough. Many of the other male pilots ask her “test” questions—questions that most pilots wouldn't be able to respond to without consulting the manual.

Many of the male pilots would tell Erika, “You need to get back in the books because this is a multimillion dollar airplane...don't you know flying is very serious and people can die if you don't know what's going on?”

Despite measures to counter gender and racial bias, persisting stereotypes prevail. For women and minorities who want to fly, this means one thing: find a way to deal with it. For Erika it means, “blocking it out.” It also means finding ways of solidifying her credibility.

There's the old KC-135 guys, and then there's the younger KC-135 guys. These are the two groups of flight instructors. The old ones—even though the flight manual may have said one thing—do things a different way—their own way. The new ones follow the manual to the letter. There are areas where the book doesn't give any specific guidance on how to proceed with operating the aircraft. This requires a judgment call on the part of the pilot.

The evaluating instructor may be part of the older or more recent generation, meaning he or she may object to a choice the pilot makes within the gray area of procedural protocol. The military has very specific rules for seemingly everything, making issues within the gray area especially frustrating.

“How is it possible that there's not a specific rule for *this* too?” Erika and so many other pilots ask, “How did this fall through the cracks?”

But it is possible, and in fact, a number of problems do fall through the cracks, and pilots need to make judgment calls when a rule or operating procedure is not delineated.

Erika found herself in just such a situation when she and her co-pilot for the day set off on a routine mission. They'd be flying in formation with one other Stratotanker ahead of them.

“We were taxiing,” Erika said. “I'm number two for takeoff. The other KC-135 is ahead of us. I am in the left seat—I am ‘the aircraft commander.’”

The guy in the right seat is an instructor, but on this day, he and Erika are just two pilots going out to fly. He is considered one of the “new kids,” an instructor who prefers to follow the letter of the law rather than the spirit.

“He and I were both raised under old instructors because we're not that far apart in KC-135 age,” said Erika.

As per normal, Erika taxied out to the runway. Control tower cleared, *Copper Six*—the call sign for both aircraft—to lineup and hold on the runway. The lead tanker got on the runway and sat there. Erika pulled up, breaking the threshold of the runway where the solid line and the dotted are painted.

“I crossed that threshold, and he (Erika's co-pilot) went nuts!” she recounted.

“Oh my God!” Erika remembers him yelling. “What are you doing? What are you doing?”

Erika wasn't going to be right up next to the airplane, but she broke the threshold.

In order to get into formation as quickly as possible, the trailing aircraft has to clock when the leading aircraft releases their brakes. From the time that they release their brakes, the trailing pilots must release their brakes 30 seconds behind them. The idea is to get into formation as quickly as you can. When the leading plane rotates (takes off), ideally, both aircraft are on the runway at the same time. As the leading plane rotated, Erika began to accelerate.

She finally took off and the lead aircraft was climbing, accelerating to 250 knots, while Erika and her co-pilot were doing the same thing just 30 seconds behind them. The aircraft are supposed to be at 1 mile apart and 1,000 feet below on the climb out. This is the formation until both aircraft level off and maintain a mile of separation. “A mile is close for two very large airplanes,” Erika said. “It's not like flying two F-16s where you can wave to the guy and actually see him. Our plane is not quickly maneuverable, and it's large.”

If the trailing aircraft doesn't get lined up on the runway while the lead is rolling, it may take longer than 30 seconds before pilots can release the brakes, and that's more time that it takes to get into formation. Usually everyone is in formation by the time the lead aircraft is at five or six thousand feet above the ground.

“So I break the threshold, and I'm on the brakes. I'm slowing down. All I did was scoot up.”

There is roughly 200 feet of space between the hold-short-line and where the actual runway is.

According to Erika, now her co-pilot is even more frantic.

“What are you doing? What are you doing? What are you doing?” he’s squawking. “You can’t go past the line!” he insists.

In her typically relaxed demeanor, antithetical to the “angry Black woman” stereotype, Erika turned to him and said, “He (control tower) said, ‘Copper 6 line up and wait.’ I’m allowed to cross the line.”

“No, you can’t!” her copilot fires back.

“Okay,” Erika concedes. “We’re going to have to talk about this later because I’m already past the line, and I don’t know what you expect me to do now.”

They take off, climb out, and while Erika is hand-flying the aircraft before turning on autopilot, the team gets into formation. Finally, after climbing out to altitude, the teams level off somewhere above 30,000 feet, but Erika’s co-pilot is clearly still upset.

“What were you thinking?” the co-pilot asks her.

The concern with crossing the threshold line is that you could get so close that either the jets could crash or that the leading airplane’s jet wash could damage the aircraft behind. Jet wash is the intense force of air—the vortices of rotating air being spun off from the jet engines—also known as the power plants.

“There’s a big gap, and I wasn’t going to be anywhere near having any part of the airplane in that zone...All the old guys taught us to get in [across the line]. If you stay behind the line, it’s going to take you longer to get lined up on the runway, and you’re not going to take off fast enough,” she said.

The co-pilot responded with, “Oh no. Who taught you that? You can’t do that.”

The rest of the mission was tense. Erika’s co-pilot had little confidence in her knowledge of the rules, and she was annoyed at his know-it-all attitude and his

willingness to be confrontational, which she perceived as distracting from the focus of flying and the mission itself.

After they landed, the co-pilot continued his argument in what many would consider a less than appropriate fashion.

“You should have seen what Erika did,” he told another new instructor on base. “It was so unsafe!”

“Oh no,” echoed the other instructor. “You can't do that.”

“Hold on,” Erika said. “Let's go talk to somebody who's been around here longer than us.”

Erika called upon a man who had been around far longer than the three of them. He had been a navigator for five years before becoming a pilot, and even still, he was senior to them among the piloting ranks. After Erika told him about the situation, the senior pilot said, “I do that. Everybody does that.”

Back pedaling, Erika's co-pilot said, “I've never seen that before, and I had never heard of that.”

“You've been around the same amount of time. How have you not heard of that before?” Erika asked him.

“I just don't think that that's safe,” he said.

The discussion had turned from a critique of Erika's knowledge of the rules into a discussion about whether it's safe to cross the line or not.

“If I had been anybody else, we wouldn't have even had this conversation, even if he was uncomfortable with what I did. He would have just been like, ‘I'm not comfortable with that. Can you just not break the threshold? I just prefer you not to.’”

Erika's assertion about the turn of conversation is well-informed by her insight into the world of aviation. She worked as a flight attendant for 17 years, she's flown the KC-135 for 14 years, and she also works as a commercial airline transport pilot (ATP) for one of the largest carriers in the world.

Not only does she know the books, but she's also married to a pilot who flies commercial and military aircraft. He's a good friend, and together, they make a team that confides in one another.

Erika was upset about her co-pilot's tone and manner of discussion about breaking the threshold—a gray area in the manuals. On top of it all, her counterparts were questioning her judgment. “There's stuff like that” Erika shared, “that happens quite often.”

While there is currently a stronger female presence of pilots on the military base today, when Erika joined the military 16 years ago, the one female pilot in her base retired a few months after Erika began. She told Erika, “Don't let them push you around. I've had enough. Good luck. I'm out of here.”

It was at this point when Erika—soon to be the sole female and one of two Black pilots on base—realized others would expect more from her.

“I have to maintain knowing it inside and out at all times because somebody's going to call me out for something, and then my judgment is going to come into question.”

Now a retired Stratotanker pilot, Dave Pope was known to many and admirably called “The Big Head,” not only because he quite literally had a big head but also because his knowledge of the aircraft, its systems, and the policies and procedures was

unrivaled. Those who flew with The Big Head would say that he could quote the books verbatim. Some believe that he has a photographic memory. Seemingly, The Big Head can, with ease, remember everything he's ever read.

No matter your relationship to him, The Big Head didn't pull any punches, and he sure didn't play favorites. If you knew your stuff, he would tell you, and if you didn't, he'd tell you that too. A gentle man, he didn't berate anyone, but he might tell you that you needed to read the book some more, or maybe you should practice some more touch-and-go maneuvers because your landing was not great.

During the time that other pilots in the base were strongly questioning Erika's knowledge of the books (the flight manuals), she decided that when the opportunity arose, she'd take the time to explain the electrical system to Dave Pope—The Big Head. Erika thought that perhaps this act would create an advocate respected by all of the pilots on base who would speak well of Erika's book knowledge.

The electrical system of a KC-135 is more complicated than many aircraft including a fly-by-wire, computer-assisted aircraft. With a fly-by-wire system like that of Airbus aircraft, the pilot controls are linked to a computer system that sends electrical signals to aircraft components in order to extend the wing flaps or move the rudder. This is unlike the KC-135's pulley system where cables are attached to the wing flaps and rudder. The controls are physically linked to the aircraft components the pilot is manipulating.

Like so many of Boeing's aircraft, the controls are built on a pulley/cable platform. And while the KC-135 was built on this pulley/cable system in the 1950s and

60s, it still remains more complicated than the more modern fly-by-wire computer-manipulated aircraft.

“There’s a lot of redundancy to it [the electrical system], and that’s a good thing. But some of the stuff, some of the way that they designed it doesn’t make any sense... why they would connect this to this and this not to this,” Erika recounted.

Once she had the chance to explain the electrical system to The Big Head, Erika clearly impressed him. He began praising Erika in conversations with other pilots. “Erika knows the electrical system probably better than most people,” he’d say. Probably because of his consistency, his aircraft knowledge, his trustworthiness, and his credibility, they believed his positive claims about her. And “Oh my God! All of sudden, somehow, all the issues that I was having suddenly went away!” Erika exclaimed. Her fellow comrades no longer questioned her knowledge of the books.

There’s one other pilot—Erika likes to call him The Engineer—who has no business flying an airplane. “No business whatsoever,” according to Erika, since “he’s way too smart to be flying an airplane because he knows the plane so well.” It’s not that The Engineer knows just what the books say but he knows the plane’s systems information—the material not covered in any of the manuals.

Erika was assigned to fly a mission with The Engineer only a few months after she spoke with The Big Head. While she and The Engineer were in flight, something happened to the electrical system.

Erika turned to The Engineer and said, “If we do this and this and this, that should fix the problem. But we should look it up in the book...”

“That’s what the book says,” The Engineer responded with confidence and perhaps surprise at Erika’s assertion.

Her actions, together with The Engineer, remedied the problem with the electrical system.

That incident is likely what solidified the newfound, resounding confidence in Erika’s knowledge among the other pilots on her base.

“Nobody talks about my book knowledge anymore, but that was several years ago. It was painful getting to this place,” Erika shared. “Somebody had told me, ‘you have to be better than them (the men).’”

Erika could fly superbly, she could take control of the massive airship in any crosswinds she encountered, and never did she have any issues with landing or flying the plane. But early on in her flying career, she allowed her book knowledge to fall away like everybody else does.

“It was acceptable for everyone else (the men). Except it’s not acceptable for me,” Erika quickly realized.

This double jeopardy of being a female—a Black female—was responsible for Erika having to be better than her White male counterparts. Early on in her career, Erika was warned about the struggles she might face, but ultimately, she had to experience the situations to understand how best to cope and adapt.

“Now that I know what the *rules* are,” she said, “now I’m good.”

Today the Lieutenant Colonel knows two airplanes inside and out. The KC-135 she’s been flying for years and the Airbus A300 series of aircraft that she pilots for American Airlines (formerly US Airways East Coast operation).

“They hired two of you at the same time?” said the Chief Pilot in American’s Philadelphia base.

The Chief Pilot, a Black male, was shocked to see that the airline had hired two Black female pilots at the same time in the same base—Erika and another woman. The airline industry is not alone in its long history of discriminatory hiring practices. It is however, emblematic of what is taking place across the nation. Hiring and employment regulations are being adhered to on paper and quietly subverted in practice. In part, this is why roughly .0007% of all ATPs are Black women (Zirulnik, 2013). The marginal increase in this number is due in part to the hiring of Erika and her classmate. The two women went to ground school together—the month-long training pilots attend to get type-rated (certified) on an assigned aircraft. In this instance, it was the A300 series of Airbus passenger jets.

The future of flight decks for US airlines is bleak. It remains a predominantly White male landscape. Hired in 1934, Helen Richey was the first female commercial pilot. Richey was forced to quit a year later due to a change in US regulations that forbid women to fly in conditions other than "fair weather" (Mills & Mills, 2006). It wasn't until 1973 that women were hired back into the flight decks of US airlines. Twenty-two years onward, the first Black woman would earn her wings and become captain of a major US airline (UPS) (Smithsonian National Air & Space Museum, 1999). The year was 1995. The event was so novel and memorable that Patrice Clark-Washington's mannequin and uniform remain on permanent display at the Smithsonian's Air and Space Museum in Washington, DC.

Today, 4.1 percent of ATPs are women, 2.7 percent of all pilots (male and female) are Black or African American, 2.5 percent are Asian, and 5 percent are Hispanic or Latino (US Department of Labor, 2012). These statistics are shocking when population figures are taken into account. Over 50 percent of US residents are women and today, women outnumber men by nearly 10 percentage points when it comes to earning degrees in higher education (US Census Bureau, 2010, 2011). Even so, entry, mobility, and opportunity for women in industry, including traditionally male-dominated professions such as aviation, remain a challenge (Sandberg, & Scovell, 2013; Tomaskovic-Devey, et al., 2006).

For Erika, moving into passenger air transport has been a much less viscerally difficult experience than was her time entering into aviation in the military. This wasn't the case for those who came before her in the airline transport business. "They ran her out." This is the narrative surrounding the first Black woman to fly aircraft for US Airways (now, the new American Airlines), and the same theme summarizes the experience of another Black female pilot who worked for Southwest Airlines. In the 1990s, Continental Airlines (now United Airlines) didn't employ a single Black female pilot among its ranks.

Captain Roscoe Edwards, currently the director of flight operations at Texas Southern University, spent the bulk of his career flying jets for Continental Airlines. It was Captain Edwards—a pioneering Black male pilot himself—who, in the mid-1990s, made history by approaching the then Director of Flight Operations at Continental, Fred Abbott. Edwards, for personal reasons, or perhaps as a cause to seek equality in aviation, encouraged Abbott to open up the hiring pool to include Black women who had been

previously excluded by subversion of Equal Employment Opportunity Commission regulations. Although retired from the airline, to this day Edwards will not speak publically about this. It is only through secondhand stories that I able to learn of what transpired between Edwards and Abbott. In the two years following what was likely a tense conversation between the two men, eight Black female pilots were hired by the airline (Atoa, personal communication, August 11, 2015). This is the largest single number of Black female pilots employed by any major passenger airline (Zirulnik, 2013).

Despite a small measure of progress, these numbers and the triumph of diversifying the flight decks of US airlines remain dismal. Delta Air Lines, for instance, reported \$37.7 billion in revenue in 2013 and is the third largest carrier in the United States. Delta employs 12,430 pilots (Delta Airlines, 2015), only three of whom are Black women (Zirulnik, 2013).

While Erika was entering the ranks of the US military, another young pilot was emerging. Dawn Wanzer—her maiden name—was following the civilian route.

Five feet, two inches tall, Dawn is a stick of dynamite. Walking into the chic lobby of a fine downtown hotel in Charlotte, North Carolina, for a lunch date, her presence is captivating. Approaching the hotel's glass doors, the concierge turned to a guest and asked if she was Keri Washington—the famed actress most notable for her leading role in the ABC television series, *Scandal*. Her gait is elegant if not flirtatious. She wears a long red wool coat that compliments her mocha skin, her almond-shaped hazel eyes, and the flowing hair that bounces behind her in the cool winter air. Her smile is Hollywood-brilliant. It's hard to miss someone so beautiful.

“Mechanic?” Dawn exclaimed in jest. “No. Never. My fingernails would get too dirty.” She continued, “No one questioned what I wanted to do with my future because it was the only thing I ever said”—become a pilot.

It wasn't until junior year of high school when Dawn would begin doubting the reality of her childhood dream.

When she was 16, Dawn had her first female flight instructor. Her flight instructor and her mother often reminded her of a lesson Erika also had to learn: she would have to work twice as hard to prove she was half as good.

“That's just something I've kept with me through college, through my first job, my first flight instructing job, and even where I work today.”

Not bad advice considering that studies of gender-related pilot behavior report that male pilots overtly or otherwise project masculine stereotypes on the piloting profession (Ashcraft, 2007; Ashcraft & Mumby, 2004), which becomes problematic, particularly when working with female pilots. Women are viewed as less competent and not as fit for the profession even though piloting almost became a “women's profession” from the 1910s to about 1930 (Adams, 1931; Martyn, 1929; Quimby, 1912). This period was the birth of a burgeoning commercial aviation industry. Yet, even then, piloting was not an occupation available to all women. Aviation, at the time, was open only to wealthy, educated White women.

While intent on becoming a pilot from an early age, Dawn would come up against her first serious obstacle as she began to apply to college in the fall of her junior year. An avid oarswoman on the crew team, she approached her physics teacher, Tom Mullen—also the boy's crew coach—whose authority she respected. She wanted to ask him for a

recommendation letter to Embry-Riddle Aeronautical University, the one school where she knew she could earn a bachelor's degree and become a pilot on a path towards flying big jets for the major airlines.

Tom Mullen's basement classroom was a 1970s relic, unchanged in 20 years. The floor was tacked with worn orange carpet—the mustard yellow walls pasted in physics posters.

Mr. Mullen was an older White gentleman, slightly overweight and balding with a scruffy salt and pepper goatee. He always wore his gray rowing sweatshirt that boasted a big *W* with a giant green Viking.

“Why don't you go to crew practice?” Mr. Mullen asked as he walked toward Dawn.

Dawn began telling Mr. Mullen about Embry-Riddle, eventually asking him to write a letter for her.

Mr. Mullen took a seat atop his desk at the front of the room. He looked at Dawn and said, “I don't think that's a good idea.”

He suggested that Dawn apply to other schools because she “probably wouldn't get in” to Embry-Riddle, and even if she did, she probably shouldn't choose aviation as a career because she wasn't particularly great at physics. She was having, after all, to work hard to earn a B in his class. And if she wasn't good at physics, Mr. Mullen said, “All of the other math will probably be overwhelming.”

Understandably, Dawn wanted to cry. She knew better, however. She thanked Mr. Mullen and made her way to crew practice. Like Erika, Dawn realized that it was a

weakness to let a man see a woman cry in the face of adversity. She only did so in the privacy of her own home after a long crew practice with her teammates.

It was the first time in her life that Dawn realized that having someone tell her “no” fueled her fire to achieve more. Mr. Mullen’s refusal to write her a letter of recommendation to Embry-Riddle “put a little bit of a thorn in my side just to make me work a little harder, think a little more, and bring me outside that bubble that not everybody is going to be a part of my fan club. Not everybody is going to support me.”

Another teacher, Andrea Sparks—Dawn’s biology teacher—was a young Black woman in her late 20s or early 30s, and this was her first teaching job. She was educated at Howard University—a historically Black college. After her encounter with Mr. Mullen, Dawn made excuses for why she shouldn’t apply to flight school.

“I may have to get my private [pilot’s license] before [I go]” she said. “Then do it” Ms. Sparks asserted. “I will write you 500 letters...if you don’t apply I’ll be disappointed.”

With that, Dawn addressed her application package to Embry-Riddle and sent it off.

As she made her way from Embry-Riddle as a graduate four years later, she flight instructed, she waited tables to earn extra income, and she moved from state to state for opportunity and advancement in the piloting world. She moved from Florida to Virginia, to Arizona, and back to Virginia, and then to Georgia. Years later, she’d find herself living in North Carolina but working and flying out of New York City where she is currently based. Getting to this point was neither simple nor straightforward.

Dawn eventually became a flight instructor herself, and she said that some of her male students would ask if they really need to know the material. They'd ask for a male instructor because they were not "comfortable." If they had passed out, they said, and were slumped over the controls, Dawn wouldn't be able to pull up on the yoke and maintain control of the aircraft. Dawn believes their claims were really pithy and cowardly ways of otherwise saying, "I don't want you to teach me how to fly because I don't think a Black woman is qualified to teach me and I don't feel confident in her abilities—this is a man's job—a White man's job."

When Dawn began flying cargo planes, the bucket seat in the single-pilot Baron aircraft dropped her down so low that she could not see out over the dash, let alone above her wings. Such a construction is not atypical of US civilian and military flight-deck design. Until recently, with some exception, flight decks, including the seats and reach and positioning of the controls, were constructed exclusively to account for the anthropometry of an average sized White male in America (Donelson & Gordon, 1991; Gordon, et al., 1989; Gordon & Licina, 1999; Kozycki & Gordon, 2002; Zehner, Meindl, & Hudson, 1992). The design of flight decks and equipment excludes a host of otherwise capable and qualified persons, including the smaller body frames of women and even many Central American and Southeast Asian men whose average anthropometry falls outside of US flight deck design measurements.

Not wanting to be differentiated from her male counterparts, Dawn carried a backpack to work every day. "What's in there?" her colleagues would ask.

"Just my lunch and some reading material," Dawn would respond.

The others would comment on the amount of food she must have been carrying. “And when,” they wondered, “do you have time to read?”

In reality, Dawn packed her bag full of flight manuals and old textbooks from her days at Embry-Riddle Aeronautical University. She’d drop the bag into her bucket seat to boost her up so that she could strap in and take off to the skies.

After her time flying cargo, Dawn worked for a regional and major airline until she arrived at one of the world’s largest airlines. Along the way and even now, some of the men with whom Dawn flies ask her racially charged, inappropriate questions that play into stereotypes of “Black America.” They ask Dawn if she has a father and a mother. They want to know what her mother does for a living. “Did you go to college?” they ask. “How’d YOU get here?” Some White male pilots express disdain for Black female pilots and imply that the company had to fulfill some sort of a minority-hiring quota that resulted in their own lack of employment (Anonymous, personal communications, 2012–2015). This colloquial myth, however, is renounced by the fact that less than seven ten-thousandths of one percent of all actively employed airline transport pilots are Black or African American women. If airlines were attempting to fulfill a minority-hiring quota, some would say they aren’t doing a very good job.

There are “the check-ride guys,” as Dawn jokingly but not endearingly calls them. The “check ride guys” will constantly ask questions to test your knowledge of basic and seemingly mundane information. While she admits there are so many male pilots who are, in her words, “absolutely wonderful,” it is the check-ride guys who can and do disrupt crew communication, alter the power dynamics in the flight deck, and corrupt the communication apparatus known as CRM or crew resource management. CRM is a set of

protocols meant to create a more inclusive, egalitarian working environment that takes into account the input from all crewmembers (Civil Aviation Authority, 2006; Kanki, Helmreich, & Anca, 2010; LeSage, Dyar, & Evans, 2011). CRM should eliminate an otherwise unsafe authoritative autocracy run by the captain, but when compromised by the check-ride-guys, CRM lacks efficacy and jeopardizes everyone on board.

In imitations of their hassling, Dawn's voice assumes an air of exhaustion. "What's the tire pressure? What is our landing distance? How much does this weigh or what does this button do?"

After four days of such harassment from one captain in particular, Dawn was exasperated. Dawn routinely wonders why she has to answer their questions. "But I will," she said, "because, one, I want them to know that I know it; two, I want them to know that they're not going to get to me; and three, (stated with sarcasm) I want them to know that if they *do* need a check ride, I'm happy to help them so they can stop questioning me now."

But after four full days with this captain, Dawn finally lost her patience. "I just gave him random answers... Just stop asking me these crazy questions because I'm done giving you the answers that I'm supposed to give. I'm just going to give you random ones."

The Captain, though, persisted. "What's our tire pressure?"

"Two," Dawn responded.

"Two?" he exclaimed.

"Two sounds really good!" she said, looking across the controls that separate them.

The Captain gave her a perplexed and angry look.

“I’m tired of this,” Dawn told him. “I’ve had about enough.”

The remainder of that trip was rather quiet and awkward, Dawn said. This became a dangerous breakdown in CRM initiated by the Captain at the outset of the trip. For personal or egotistical reasons, he breached his position and authority of maintaining open, frank but civil dialogue. Problematic is that the protocol and curriculum was written in the late 1970s and early 1980s when the demographic landscape of the flight deck in the US was over 98 percent male and predominantly White.

The intent of CRM is to assist with situational awareness and allow crewmembers to voice concerns to the Captain without the fear of reprisal. It is generally considered the one protocol in communication and human interaction responsible for the increased safety record of US based airlines. However, the curriculum did not and does not take into account gendered, racial, or ethnic differences in communication styles and patterns.

On December 28, 1978, United Airlines, Flight 173 crashed in Portland, Oregon roughly six miles from the airfield. The crash killed two crewmembers, and eight passengers and seriously injured 21 of the 189 people aboard the McDonnell-Douglas DC-8. Captain McBroom had become preoccupied with a landing gear malfunction and dismissed concerns of the First Officer and the Flight Engineer who were trying to warn him of the ensuing fuel shortage. Ultimately, the cause of the crash was fuel starvation to all engines (National Transportation Safety Board, 1979).

In response to the Flight 173 crash as well as other previous tragic aviation events, the National Aeronautics and Space Administration (NASA), supported by the National Transportation Safety Board (NTSB), developed cockpit resource management,

now dubbed crew resource management (CRM). They shared their research plan with the Federal Aviation Administration (FAA) and recommended that airlines adopt methods of utilizing crew input and leadership styles that were more engaging, as opposed to authoritative, in decision-making. Today, most major airlines in the US incorporate CRM training into their pilot training programs. However, important components of conflict management and relational and interpersonal management skills training in routine operations are often cursorily addressed or seemingly missing all together.

Since 1973, when women were permitted to fly commercial aircraft, data from the FAA shows a continuation in the slowly changing demographic among pilots in the US. Change is slow, but more and more traditionally underrepresented groups are flying commercial aircraft today. This includes women, openly gay men and women, and racial minorities that include Asians, Latinos, and African Americans like Erika and Dawn in a profession that is today 96% male and nearly 90% Caucasian (Federal Aviation Administration, 2015).

Political difference, gender, sexual orientation, generational divides, age and historical reference are all points of potential conflict between individuals who work long hours in close proximity. For pilots, “close proximity” can often mean spaces smaller than a walk-in closet. A resolute policy and training option is to investigate this new landscape of a more diverse flight deck and to teach empirically tested techniques and skill sets that aid in mitigating conflict and restore order in the critical operation of aircraft.

Trained flight crews, including those in the cabin and on the flight deck, are expected to revert back to their professional standards and training in the event of an

emergency. But often, conflict among crewmembers causes distractions. Losing focus on the operation may lead to missing indicators of aircraft trouble. Many aircraft accidents are the result of cumulative events that continue to build and complicate the situation until it is no longer reversible.

The FAA, NTSB, and NASA all collect voluntarily and involuntarily reported data from flight crew concerning procedural outliers, breakdowns in the chain of command, mechanical failures, and equipment design flaws in an effort to continually improve the safety of civil aviation. Not surprisingly, you'd be hard pressed to find a pilot's report that states, "I missed a vector because I was busy arguing with my co-pilot about the presidential election" or a captain's report that reads, "I thought she got the job just because she was a woman, so I didn't let her fly the plane..."

Albeit more an exception than the rule, insiders know these are the realities that exist in aviation. Industry pressures of maintaining an image of stern professionalism and mechanized reliability preclude divulgence of this information. In so doing, the absence of analysis, training, and skills acquisition in conflict management finds a void in the elaborate syllabus of CRM training—a void that comes at the expense of the flying public.

Remaining silent about these issues at a public and national level will add to the existing tensions in the flight deck and aid and abet current subversion of the laws implemented by Congress to create equity and equality in the workforce. In the critical phases of flight operation, continuing to ignore the discriminatory, inhibiting and degrading experiences suffered by many pilots that come from a non-dominant group such as African American females, will continue to erode pilot communication protocols

that were put into place to create a safe air transport system that would otherwise have been a perilous mode of transportation.

But for now, Dawn said, “assumptions [about me] always come first whether I’m in uniform or not.”

“In New York, nothing matters. Other places, especially in the south—Atlanta, not so much Florida, but Alabama, Mississippi, even out west sometimes,” Dawn is a “double take.” Passengers in the terminal will turn and point and say, “She has on stripes, oh...”

Sometimes Dawn will be preflighting the aircraft in the cockpit, and maintenance will come up and say, “I need a pilot to sign” whatever form.

“I’ll sign it,” Dawn will tell the mechanic.

The mechanic inevitably continues to argue until Dawn provides assurance with wide eyes and a glance indicating a need to reassess her uniform.

A stuttering apology is the typical response after recognizing the bias and label just placed on this woman who, after all, is in a pilot uniform and sitting in the flight deck behind the controls. She is clearly a pilot but assumed otherwise. Assumptions, it seems, always come first.

It was a cool day in Somewhere, Middle America, when—in between flights—Dawn left her aircraft to get a cup of coffee in the terminal. She was wearing her uniform-issued sweater, which obstructed the view of her crew badge and her neatly pressed button-down shirt and tie. Happily, Dawn returned to the gate with her coffee in hand. “Can I grab the paperwork?” she asked the gate agent.

“I can’t give it to the flight attendants,” the agent said.

“I’m sorry,” Dawn said, checking her sweater. “My stripes are covered.”

The agent, much like the mechanics Dawn frequently encounters, began uttering her apologies. “I’m so sorry,” she said and handed Dawn the paperwork.

All Dawn could think was, “The flight attendants are wearing bright-colored dresses! Our uniforms don’t even look the same. They’re not even the same color. They have bright-colored dresses with matching hats.” While problematic, the assumptions are a manifestation of stereotypes based on the statistics of who and what a pilot looks like in the United States.

“It’s always the assumption that you’re not a pilot,” Dawn attests. She works really hard to make sure she looks feminine in her uniform. She always wears heels. For Dawn, it is important to maintain a feminine appearance. With reminders from her mother and her first female flight instructor, Dawn maintains a keen awareness that she will never be “one of the guys.” So looking like one of them to assimilate into this male-dominated profession is something she never sought out. Dawn embraces her femininity even if some of her uniform pieces are designed exclusively for men, which she has tailored to fit her female figure.

She admits, “I need as much stuff saying that I am a pilot as possible...that’s why I love the hats.” Even still, “It bothers me that it’s 2015...other people can fly besides guys,” Dawn exclaimed. “Why is that so difficult for people to see?”

People often ask if they may take a picture with Dawn. At first, she said, she didn’t understand the request. “I’m sorry?” she’d say in response to their inquiries.

Then they’d explain that they’d never seen a Black female pilot. Of course, now Dawn always graciously agrees to their request.

“I see females all the time with my job, and I understand being the Black female pilot is a little bit different, but it's just my job, and I love my job. I'm very proud of my job.”

Even though Dawn is often thrown into the role of “poster child,” she doesn't walk down the terminal looking to stand out.

“I'm just going to work, and mostly, I'm looking to get to Seattle because they have the best sushi there!” she said in a jovial voice.

“Getting on and off the plane, older people will stop...I had one older woman, an older Black woman getting off [the plane] in Atlanta, and she just held my hand and said, ‘thank you.’”

For Dawn, it was a thank you that needn't further explanation. It was a heartfelt thanks for continuing the fight for equality. It was a thank you for continuing to break down barriers. It was a thank you for being strong. Thank you—two powerful words when spoken with sincerity, particularly if one considers the probabilities of this older woman's history.

Such moments bring it all back home for Dawn. Sometimes she forgets, albeit momentarily, that she truly is special. In Dawn's family, her husband is a pilot, her mom was a flight attendant, her stepdad is a Black pilot, and she is a pilot. Aviation is her life.

A woman expressing gratitude serves as a reminder for Dawn that there are very few African American female pilots, and she must not forget to hold her head up with pride. She tows the line of role model and representative, right or wrong, for the perception of all other current and future Black female pilots. Dawn recognizes this inevitable social responsibility, as does Erika who always flies or commutes in full

uniform. Erika's clothes are always pressed and neat so that whoever sees her onboard the aircraft or rolling her flight bags through the terminal will be left with an impression of professionalism rather than the stereotype of "angry Black woman" that unfortunately represents so many independent, successful Black women in America. As Erika shared, when she steps out of her car to head into work, "It's game on."

Dawn has to remember and remind others from time to time that people died for her to have these privileges and these rights and this freedom—to be free, to vote, and now, to be in the cockpit of a commercial airliner.

Her stepdad, who is only 30 years her senior, was one of the first Black male pilots in the United States. He tells stories of the times that he would fly, and the captain would put a noose on the center console and ask, "Does that bother you, boy?"

In a cool, confident voice, Dawn's stepdad would respond with a simple, "No."

This was just one of many horrific experiences he and his colleagues endured. Today, women and other non-dominant group members who work so hard to become pilots continue to endure exclusion, oppression, or discrimination, and though the tactics may be more subversive than what Dawn's stepfather experienced, the results are no less damaging.

In 1988, the Equal Employment Opportunity Commission (EEOC) found United Airlines in violation of a 1976 court decree that ordered the carrier to stop discriminating against minority and women pilot applicants (Key, 1988). More recently, in 2014, 22 African American captains and African American operations supervisors (all men) filed suit against United Airlines (presently United Continental Holdings, Inc.; United Airlines, Inc.; Continental Airlines, Inc.) for its continued discriminatory hiring and

promotion practices. The case will stand before the United States District Court; Northern District of California (US District Court, Northern District of California, 2014).

Dawn only has to look so far as her stepfather to realize the opportunities that have been made available to her, and in turn, she works with future generations in mind.

“I take pride in wearing that uniform and—being a Black female—this is who I am,” she said. “I worked hard to get here and I wear that uniform with pride because people worked really hard especially in the aviation community to open this door for me. I’m going to be a damn good pilot so that the next woman that comes up whether she’s Black, Indian, whatever, will be good. I’m going to work hard so that the men will judge them less.”

Both she and Erika carry a sense of responsibility to blaze a path for the women who come behind them in their beloved profession. They uphold a self-imposed edict to enable a lesser path of resistance than they endured and that those women who came before them in 1973 had to endure.

With just 4 out of every 100 air transport pilots being women, the novelty remains a reality, and for women who are other than White women, that novelty is exponentially greater (Federal Aviation Administration, 2015).

Accordingly, although not rightfully, many male pilots, Dawn said, “will always tell you, ‘I flew with this girl. She was terrible.’”

But Dawn sometimes asks, “Who was the last bad guy you flew with?”

To this inquiry, male pilots rarely have an answer.

Too, male pilots seem surprised if they fly with a skilled female pilot.

Dawn recounts familiar comments: ““Oh, the last girl I flew with, she did this or this if she was good or bad. She was really sharp, she was on it, she just knew her numbers, she knew what she was supposed to do.””

“Well sure,” Dawn thinks as these men carry on. “That's our job.”

Getting on or off the airplane, Dawn has had more pictures taken of her in Atlanta than anywhere else. On another coffee run, a 20 or 30-something Black man asked with excitement and awe, “Can I just take a picture of you? My daughter is not going to believe that I saw a Black female pilot!”

For both Dawn and Erika, it is always Black people who ask to take a picture. It is always Black people who ask the questions of whether or not they are scared or what it's like or how it is to work in this profession or comment that they didn't know Black women could be pilots. White passengers, if they say something, it's more of a joke—a bad joke—sexist, in fact. “Oh, they let a woman fly?” or “I hope we don't get lost” or “Good thing there's a man up there with you.” Still, Erika and Dawn persist and work hard to be the best pilots by out-performing their male counterparts and challenging themselves to do better.

To achieve their goals and manage often difficult or tenuous circumstances in the flight deck of their aircraft, Dawn and Erika display a host of communication patterns explained by a robust theoretical construct known as co-cultural communication theory (Orbe, 1996, 1998a, 2005). The strategies both women employ include orientations and practices using liaisons—“identifying specific dominant group members who can be trusted for support, guidance, and assistance” according to the theory's creator, Mark Orbe (1998b).

It seems, however, that Erika's experiences add another layer of insight to the practice of using a liaison. She has moved beyond the role of a liaison to create alliances. Erika, in a strategically managed practice, utilized the voice of respected dominant group members—The Big Head and The Engineer—to create a communicative landscape that enabled other dominant group members, other White male pilots to accept her skill and proficiency as a competent pilot.

These women employ a host of communication practices and strategies including overcompensating by showing others that they are the best pilot on the line. They speak out, attempting to dispel stereotypes. Sometimes they use and develop positive face to counter insults and bigotry. Building strategic alliances may be as powerful and in some cases, more powerful than many of the self-oriented strategies that can be employed. Similar patterns have been observed in the civil rights movement as well as the gay rights movement. Without the support of dominant group members advocating on the behalf of non-dominant group members, many constituencies may never have moved the legislative and social needle as far as it was moved. The door opening on these issues means an entry for discussion, criticism, and dissent.

Today, civil society stands without the methods, the skills, and the mechanisms of how best to communicate these social concerns that have deep-rooted histories and religious contexts. We must address gender and racial discrimination in a pragmatic and holistic fashion in the course of crew resource management to ensure efficient and safe flight deck operations as well as effective communication between pilots. Ensuring safe, reliable, incident-free flights is important on the level of social progress. It is relevant to issues of equity and justice. More so, it is relevant to all who fly or live below the flight

paths of aircraft—wherever and whatever their stance on debated issues of civil rights or liberties and ideas of equality or justice.

“I couldn’t imagine doing anything else,” Dawn and Erika often say. With all of the strife, the challenges, and roadblocks that have been put in their way on a path towards flying the large transport jets they love, the drive and the passion to command an aircraft, fly it higher than any bird can soar, seemingly to reach the bounds of the earth, both pilots continue to excel past the efforts of their naysayers and upward and onward with their allies.

CHAPTER 5

ANALYSIS, REFLECTIONS AND CONCLUDING REMARKS

This study was guided by two initial research questions framed around co-cultural theory, which I will briefly review in the next section. The first question explains the interpersonal dynamics in the flight deck and the other addresses oppressive structural issues within the aviation sector and piloting profession. Specifically, question one, “How do Black and African American female pilots manage their communication style and behavior when working with White male pilots in the flight deck?” focuses on the interpersonal processes of co-cultural communication (Orbe, 1996, 1998a, 1998b; Orbe & Roberts, 2012). Question two, “How do Black and African American female pilots navigate the racial and gender barriers of the airline transport piloting profession?” addresses how participant-researchers negotiate systematic oppression within the aviation community.

Investigation of these two guiding questions informs co-cultural theory in two primary ways. First, it offers support for the inclusion of “rationalization” as the newest extension of co-cultural communication strategy as proposed by Castle Bell, Hopson, Weathers, and Ross (2015). Secondly, findings suggest the possibility of a new co-cultural communication strategy that could further extend co-cultural theory.

In this chapter, I discuss the theoretical and practical applications of co-cultural theory on the flight deck as it relates to the continued improvement and analysis of crew resource management (CRM) curriculum. I then discuss the goals of authoring my findings as a creative/narrative nonfiction piece. Next, I reflect on the value of creative/narrative nonfiction writing. This section addresses the importance of creative

nonfiction writing in its ability to share complex information with audiences outside of the Academy and highlights the use of narrative as an ethnographic method. Finally, I conclude the chapter by addressing limitations of this study followed by suggestions for future research.

Co-Cultural Theory—Analysis of Findings

Co-cultural theory (1996) has played an important role in this dissertation project in a number of ways. It initially served as an inspiration for pursuing this topic from the perspective of the lived experiences of the persons whose communicative experiences I sought to investigate. Second, it served as a guide for me as I crafted the questions I asked my co-researchers, how I approached them, and the care with which I treated their responses. Third, it served as a lens through which I analyzed the results of my interviews. After a brief review of co-cultural theory, this section summarizes the key co-cultural communication strategies observed during the analysis of the interview transcripts.

Co-cultural theory, initially conceptualized by Orbe (1996, 1998a, 1998b), seeks to recognize difference and sameness among and within co-cultural groups. However, it does not give precedence nor prioritize or generalize the communication patterns and values enacted by a dominant co-cultural group over the patterns and values of a non-dominant group. Another way of explaining this difference is that co-cultural theory approaches research from the perspective of those who traditionally have been marginalized and is simultaneously grounded in the lived experiences of those individuals it seeks to study. While the original conceptualization of co-cultural theory (Orbe, 1998b) sought to give voice to traditionally marginalized people, more recent

iterations of the theory also seek to understand the communication strategies persons of a non-dominant co-culture use to interact with individuals of dominant co-cultures to achieve desired communicative outcomes (Orbe & Roberts, 2012).

As explained in chapter two of this dissertation, co-cultural theory (Orbe, 1996) explicates “six interrelated factors that influence the process by which underrepresented group members communicate within dominant societal structures” (Orbe & Roberts, 2012, p. 296). These include: (1) preferred outcomes, (2) field of experience, (3) abilities, (4) situational context, (5) perceived costs and rewards, and (6) communication approach (see Chapter 2 for more detail about each factor).

Understanding the ways in which marginalized co-cultural group members communicate within organizations is a foundational model of nine communication orientations generated from an outsider-within perspective (Orbe, 1998a) (see Appendix B for the *Outsider within Communication Orientations* Model). The outsider within perspective refers to a non-dominant co-cultural group member (the outsider) who exists, interacts, or works with or within the environment of a dominant co-cultural group. Orbe’s (1998a, 1998b) model is set upon two distinct axes. One axis is titled “preferred outcomes” and the other refers to “communication approach.” Each axis is factored further into three categories from which nine communication orientations are formulated. Preferred outcomes include, (1) separation, (2) accommodation and (3) assimilation, and the communication approaches include, (1) aggressive, (2) assertive and (3) nonassertive. The intersection of each preferred outcome with each of the communication approaches results in nine communication orientations: nonassertive separation orientation; nonassertive accommodation orientation; nonassertive assimilation orientation; assertive

separation orientation; assertive accommodation orientation; assertive assimilation orientation; aggressive separation orientation; aggressive accommodation orientation; aggressive assimilation orientation (Orbe, 1998a) (see Appendix C for a list of co-cultural practices and orientations summary).

The present study determined that six of the nine co-cultural communication orientations were used by the co-researchers (pilots) to negotiate their lived communicative experiences on the flight deck and in the aviation industry. This eclectic set of co-cultural communication orientations includes nonassertive assimilation, assertive assimilation, aggressive assimilation, nonassertive accommodation, assertive accommodation, and nonassertive separation.

Censoring self, defined as “remaining silent when comments from dominant group members are inappropriate, indirectly insulting, or highly offensive” (Orbe, 1998a, p. 249), was a primary nonassertive assimilation strategy observed in this study. The instances of Dawn not reacting to passenger comments that include, “good thing there’s a guy up there” while she is preparing the aircraft for flight are key exemplars of this strategy.

The primary assertive assimilation strategy includes extensive preparation. Orbe (1998a) defines extensive preparation as “engaging in an extensive amount of detailed (mental/concrete) groundwork prior to interactions with dominant group members” (p. 249). First Officer Dawn Cook’s comment, “I have to work twice as hard to prove I’m half as good” illustrates her awareness of extensive preparation as a strategy. Cook acts on this awareness when she arrives to her assigned aircraft well before she is required. This way she can preflight the aircraft prior to arrival of the captain and the rest of the

crew. The preflight includes review of the flight plan, manual data input of routing information into the aircraft's flight information management system, system checks of the avionics and a walk around visual inspection of the exterior of the aircraft and its landing gear to ensure it is airworthy (safe for flight). Cook believes this initial action shows her colleagues that she is competent and prepared, setting the stage for a respectful communicative interaction in the flight deck for the duration of the trip.

Mirroring, "adopting dominant group codes in attempt to make one's co-cultural identity more (or totally) invisible" (Orbe, 1998a, p. 249), was an aggressive assimilation strategy recognized in experiences shared by both pilots. Erika and Dawn's focused attention on their professional look in their pilot uniforms highlighted mirroring as a strategy. Erika, for example, always commutes by air to and from her home to her pilot base cross-country in full uniform as opposed to not wearing the uniform at all or not wearing the uniform in its entirety (e.g. without the tie or the blazer on). Both pilots are conscious of their professional appearance while on the aircraft and particularly in public view while walking through the airport terminal.

The participant's efforts serve both as an attempt to blend in as a pilot and simultaneously as a form of nonassertive accommodation. The nonassertive accommodation strategy of dispelling stereotypes is defined as occurring when "myths of generalized group characteristics and behaviors are countered through the process of just being one's self" (Orbe, 1998a, p. 249). Erika and Dawn are cognizant of and work hard to dispel the "angry Black woman" stereotype by maintaining the appearance of professionalism and assuring that they always appear friendly and approachable and, in fact, are friendly and approachable.

Both pilots in this study stated that they sought out “specific dominant group members who can be trusted for support, guidance, and assistance” (Orbe, 1998a, p. 250). This assertive accommodation approach of using liaisons as a co-cultural communication strategy can be seen throughout the narrative (see Chapter 4). Erika’s partner when she was in training with the US Air Force and her pilot husband can be considered liaisons, offering support and, in the case of her husband, guidance as well. This dynamic however, did not appear unidirectional and deserves further research and attention. Dawn continues to practice and implement the lessons her first female flight instructor taught her. Early on, she offered Dawn guidance on how to navigate this White male dominated profession as a woman.

Lieutenant Colonel Erika LeBlanc also exhibited a nonassertive separation approach by enacting the strategy Orbe (1998a) classifies as avoiding, which involves “maintaining a distance from [*sic*] dominant group members; refraining from activities and/or locations where interaction is likely” (p. 250). For example, Erika, deployed on a mission with her crew, all of whom were men, had just landed in Iceland. When they arrived after more than ten hours of flying together, her male colleagues decided they wanted to go downtown to the bars that evening. Erika, while invited to join, decided not to. She often decides not to join in the activities of the men in their time away from flying. Erika said,

They [the men] spend every waking moment together but I don’t think that’s a racist thing because the Black guys hang out with them too. It’s definitely a good ol’ boys club and I decided that I wasn’t going to try to fit in. I...just do my thing.

Erika and Dawn both highlight moments of “avoiding”—sharing stories about their active recognition and understanding that they are not “one of the guys” and “will never be one of the guys.” Both pilots appear to embrace their femininity and unique position as women in aviation.

In addition to these strategies, co-researchers were identified as having utilized rationalization as a strategy. Castle Bell, et al. (2015) define rationalization “as instances where individuals provide alternative explanations for communication rather than labeling them as forms of injustice (e.g., racial insensitivity, prejudice, or discrimination)” (p. 1). Co-cultural communication theory was recently extended to include this additional communication strategy, “rationalization,” as part of the assertive assimilation orientation (Castle Bell, et al., 2015).

Findings from this research study on the lived communicative experiences of Black and African American female pilots in the US support the theoretical extension of Castle Bell, et al. (2015). Several instances in the narrative of this dissertation illustrate the use of rationalization as a co-cultural communication strategy. I will highlight three of the strongest examples here.

In one instance, First Officer Dawn Cook seems to struggle with the tension of recognizing the likelihood of racial and gender bias while simultaneously rationalizing the actions of students she was flight instructing.

Nothing in my life except for maybe a few things has anyone ever said she’s a girl, I’d rather go with that guy over there. I was questioned when I’m teaching... So there’s been both sides but I’m well aware when someone does not want to work with me or questioned what I was doing. I seriously doubt [students]

questioned Chris [the White male instructor] about the FAR [Federal Aviation Regulations] and it could just be a chip on my shoulder. That's never my intention but I just have a hard time thinking that they [students] would question a chief pilot or they would question somebody else versus what I'm trying to teach you just for your benefit. I don't have to teach for the FAR, you can read them, learn them, figure them out on your own but I'm trying to help... [Some students will say] I want a different instructor [not] because of you being a female or you being African American, [Dawn surmises]. A lot of students have been questioned in other ways... [If it] is because of who I am...that's fine. It just makes me have to work harder...Just little things like that but it's okay.

The tension of race and gender biases is evident in this interview excerpt, but never is it pronounced or vocalized. For example, Dawn rationalizes others' actions by saying, "it could just be a chip on my shoulder." Here, Dawn places the blame for her thoughts of enacted racist and sexist behavior on her projections of what might be an internal issue and not the actions of the actor. Dawn also rationalizes the tensions by saying, "It just makes me have to work harder" and "it's okay." As I will discuss in a later section, these rationalizations may have negative consequences.

Lieutenant Colonel Erika LeBlanc navigated a similar tension while in flight school with the US Air Force.

I remember another guy coming up to me and saying, 'I heard that you *can* fly.' He was actually trying to be nice and didn't realize what he said—how it sounded...I tried not to react too badly because I know he was trying to be nice,

and he knew that I hated being there...and this was his way of cheering me up by telling me, 'No, you belong here; you *do* belong here.'"

Erika knew she belonged in flight training, but wondered when others would realize this. The comment from Erika's White male classmate, "I heard that you *can* fly," was charged with connotations of racial and gender stereotypes about the abilities of women of color and their ability to achieve the same status as men—particularly White men. Erika, while acknowledging the injustice of such a statement, simultaneously rationalized it with justification, "I tried not to react too badly because I know he was trying to be nice, and he knew that I hated being there...and this was his way of cheering me up..."

On a macro-level, Erika's communicative worldview is seemingly steeped in rationalizations that separate her interpersonal experiences in aviation from racial or gender discrimination. Erika typically looks at the world with a gaze of possibility and optimism. If somebody is displaying some sort of animosity toward her, Erika automatically attributes it to a personality conflict.

That's usually the first place I go...not because I'm a girl or because I'm Black. It has to be pretty blatant for me to go, 'Wow, you're a racist.'

These examples of rationalization fit most closely within the thematic trend of "The comments were offensive, not racist...necessarily" (Castle Bell, et al., 2015), adding support and providing evidence to the extension of rationalization as a co-cultural communication strategy.

In addition to supporting rationalization as a strategy, the narrative suggests another extension of Orbe's (1998a, 1998b; Orbe & Roberts, 2012) co-cultural theory.

Below, I briefly explicate the communicative actions that led me to suggest a new area of investigation where the theory may be extended. This is followed by preliminary proposal of the taxonomy and definition for such an extension.

Early on in Lieutenant Colonel LeBlanc's flying career she was stationed on a base where her colleagues strongly questioned her knowledge of the books (the flight manuals). Erika was the sole female pilot and one of few African American pilots on her military base. She decided that when the opportunity arose, she would take the time to explain the electrical system to Dave Pope. Pope, admirably known as The Big Head for his competence in flight and his knowledge of the books, held a position of rank and seniority on the base. He was well liked and highly regarded by his peers. By seeking out the opportunity to explain the KC 135's complex electrical system to The Big Head, Erika thought that perhaps this act would create an ally who would speak well of her book knowledge and ameliorate the trepidation of her comrades' level of confidence in her skills and abilities as a pilot.

Erika's communicative actions served the purpose of managing conflict/the questioning of her abilities in flight and operated as a communication management strategy that strategically employed the power of a dominant co-cultural group member to ameliorate a biased environment. In other words, Erika, in a strategically managed practice, utilized the voice of respected dominant group member—The Big Head—to create a communicative landscape that enabled other dominant group members, other White male pilots, to accept her skill and proficiency as a competent pilot. Soon after this strategic action, her colleagues no longer questioned Erika's knowledge of the books.

Although both pilots in this study enacted a host of co-cultural practices (highlighted in Chapter 4) including developing positive face, censoring self, overcompensating, and dispelling stereotypes, Erika's awareness and adaptability in the unique contextual climate of her situation may have exhibited a new communication strategy not yet identified in co-cultural theory. I have tentatively titled this strategy, "strategic alliance building." The strategy or practice, as Orbe and Roberts (2012) might refer to it, can be considered an assertive approach by which the co-cultural group member is seeking the outcome of assimilation into the dominant group. Until further research can be done, strategic alliance building is provisionally defined as instances when co-cultural group members make the conscious decision to gain esoteric social alliances from dominant co-cultural group members within the organization through strategized interaction(s) that have a predetermined intent and goal.

The example provided above offers insight into this proposed strategy where social alliance was gained through demonstrable actions of competence and strategic action. This one example does not substantiate the inclusion of strategic alliance building as a co-cultural communication strategy. It does warrant further investigation and research.

Hidden Communication Structures Between Co-Cultural Groups

Non-dominant group members use co-cultural communication strategies to navigate the dominant co-cultural norms of their work environment. The outcome of these negotiated interactions often depends on a host of variables that include structural frameworks that are historically and politically positioned. Pertaining to employment equality and opportunity specifically, the Equal Employment Opportunity Commission

(EEOC) processed nearly 100,000 claims of discrimination and claimed \$365 million for victims of workplace discrimination in 2012. This is an indicator that discriminatory action in the US workplace is pervasive. There is a possibility that much of it has gone undetected.

Airlines are not exempt from such discriminatory behavior (Key, 1988; Mills & Mills, 2006; Mills, 2005; Mills, 1998; US District Court, Case No. 3:12-cv-02730 MMC, 2012). They appear uncomfortable disclosing information that statistically identifies the racial makeup of non-dominant gender groups. This is emblematic, perhaps, of the socially tolerated public practice of articulating biases around gender but not race. For instance, “women can’t drive” or “good thing there’s a guy up there” as a number of passengers have commented to Dawn when they saw her in the flight deck. These comments are manifestations of our biases or a specific prejudice. Similar public comment pertaining to racial prejudice would likely have remained inaudible but present in thought or action—operating on a clandestine yet powerful level. A noticeable level of discomfort about discussion related to race was noticeable at the outset of this project.

In the course of three months preceding this dissertation, an exploratory study (Zirulnik, 2013) was conducted to account for the number of Black and African American female pilots employed by US air carriers. Quickly, it became evident that the information sought was considered “taboo.” Most airlines were reticent or unwilling to disclose the information. Many refused to return calls or respond to email messages. The sole inquiry was, “How many Black and African American female pilots are employed at your airline?” This inquiry was sent via email, left as messages with the assistants of

airline executives, and through direct contact with the directors and vice presidents of each airline's human resources (HR) department.

In person, visits with HR executives at recruiting events often resulted in a refusal to disclose this information. Of the sixteen visits with airline executives, disclosure of this information from five HR executives and their representatives came with qualification, such as "I never gave you this information."

Although the US government requires most air carriers to disclose a host of employment data which is made available to the public (including race and gender variables), specific breakdowns such as the combined statistic accounting for race *and* gender is not a requisite data point for reporting. Hawaiian Airlines was the only legacy carrier willing to share this data without concern or suspicion. Having missed a return call to the inquiry, the answer was left in a voicemail message. The executive who returned the call offered to share other variable data points should they be useful to inform the study.

On a number of occasions, conversations with air carrier HR executives over the telephone devolved into circular questioning about exactly who I was and why I wanted this information. They wanted to know how I would use the data and what I would say about them or their company. Although this information was provided at the outset of all inquiries, it was asked about repeatedly. This "too scared to share" approach may say far more about the landscape of race and gender relations in US corporate culture—specifically air carriers—than did the eventual discovery of the statistical data sought (later obtained through professional and social networks that have connections within each of the airlines).

The difficulty in obtaining what was initially perceived as benign information resulted in a question for future inquiry, “Why are US corporations seemingly afraid to disclose employment figures that account for the combined statistic of race and gender for non-dominant group members?” A possible reason may be that explicit sexist ideologies in aviation are more acceptable (Ashcraft, 2005; Ashcraft & Allen, 2003; Ashcraft, & Mumby, 2004; O’Neill, 2005) than overt racism—a social taboo (Allen, 1995). This study’s findings, consistent with the literature, suggest racist behavior and ideologies within the piloting profession are more implicit in their manifestation and expression.

Applying the Research to Inform CRM Curriculum

Today, civil society stands without the methods, the skills, and the mechanisms of how best to communicate about social concerns that have deep-rooted histories and contexts. Therefore, we must address gender and racial discrimination in a pragmatic and holistic fashion in the course of revisions to curriculum of crew resource management (CRM) to ensure efficient and safe flight deck operations as well as effective communication between pilots. Ensuring safe, reliable, incident-free flights is important on two levels. It is relevant to issues of equity and justice. More so, it is relevant to all who fly or live below the flight paths of aircraft, whatever one’s stance on issues of civil rights or liberties and ideas of equality or justice. Effective aircrew management—pilots who fly and communicate effectively to ensure the real investment of CRM, safe flight—is not possible without addressing demographic changes within the industry.

By examining the lived, communicative experiences of non-dominant group members with the same elite status (or class) of the dominant class, this study attempted

to record and offer insight into the communication management strategies co-cultural group members with dual non-dominant characteristics (gender and race) use in their daily interactions with dominant group members in the workplace—specifically, the flight decks of the US military and commercial airliners. Many of these findings were addressed in the preceding sections of this chapter.

Covered in more detail in Chapter 1 of this dissertation, as changes in pilot demography slowly make their way from the margins to the mainstream, it has become necessary to investigate the communication norms and practices of underrepresented populations so that pilots may continue to operate in and enact an inclusive culture of CRM.

Taking a closer look at the racialized and gendered landscape of communication practices within the flight decks of military and commercial airliners not only can contribute to better communication on the flight deck, but it can also contribute to understanding how employees in a variety of workplaces can communicate more effectively across race and gender lines. Co-cultural theory was a useful tool in approaching and deciphering that landscape within specific contexts of aviation that this study focused on.

Addressing and identifying the use of microaggressions (Sue, Capodilupo, & Holder, 2008; Sue, et al, 2007; Torres-Harding, Andrade, & Romero Diaz, 2012) towards non-dominant group members on the flight deck may prove useful to the continued redevelopment of CRM curriculum. So too can acknowledgement of the oppressive and structural inequities that frame the piloting profession. “Racial microaggressions are brief and commonplace daily verbal, behavioral, and environmental indignities, whether

intentional or unintentional, that communicate hostile, derogatory, or negative racial slights and insults to the target person or group” (p. Sue, et al., 2007, p. 273). These racial microaggressions can cause considerable psychological distress (Sue, Capodilupo, & Holder, 2008) to its targets and may disrupt effective communication patterns between pilots, which are necessary for safe flight operations.

Some White male pilots have asked one of the study’s participants, “Did you go to college?” and “How’d YOU get here?” These questions—simultaneously microaggressions—originate from the systematic oppressions endemic to the aviation industry (See Mills & Mills, 2006; Mills, 2005; Mills 1998 for more detailed historical accounts focused on the sexist and racist histories of US, British, and Canadian airlines).

The lack of acknowledgement, analysis, training, and skills acquisition in conflict management and intercultural communication training with regard to systematic oppression and how microaggressions can disrupt effective CRM requires further attention. Lieutenant Colonel LeBlanc and First Officer Cook likely are not outliers; many non-dominant group members have experienced microaggressions in their workplaces (Evans, 2013; O’Neill, 2005; Orbe, 2003). Therefore, it is recommended that a number of steps be taken to address this problem. These include: (1) Inclusion of units in the CRM curriculum that specifically address concepts of culture, prejudice and bias while introducing the idea of microaggressions in communication. The ethnocentric CRM training curriculum created in the early 1980s for US pilot groups in large part failed when implemented in pilot training courses around the world (Helmreich, Merritt, & Wilhelm, 1999). Lack of attention to cultural considerations in the training diluted or disrupted the intent of CRM training. The disruptions seen in this global context are now

being seen in today's CRM training curriculum, which does not account for a diversified pilot group—one that was over 99% male and approximately 98% White when CRM training was first introduced to aviators in the early 1980s. (2) Implement exercises and activities in the curriculum that provide simulated situations where pilots may practice ameliorating instances of microaggressions and biased behavior. Here the training would offer pilots methods to recognize biases, prejudices, and microaggressions as well as skills for communicating effectively to avoid detrimental communication practices. These skills would also allow pilots to work through contentious communicative events when they occur on the flight deck. The goal of this training and intervention is to create a communicative environment that maintains effective CRM on the flight deck. (3) Extract CRM from its imbedded nature. The fourth generation of CRM worked to integrate CRM into the training curriculum. This procedural, integrated approach, referred to as the Advanced Qualification Program (AQP), includes Line Orientation Flight Training (LOFT) that does ask pilots to simulate operations in high-risk conditions (Helmreich, Merritt, & Wilhelm, 1999). However, the imbedded nature of the training may have muted the importance of CRM's interpersonal communication components. Moreover, the training has yet to account for a continually diversifying workforce. One way to account for and begin to address these oversights is through the use of an ancient tradition—storytelling.

Sharing Stories—The Power of Narrative

A central goal of reporting on the findings of this project in the form of creative nonfiction is to share the experiences of the co-researchers (the pilots and contributors to the collection of ideas and experiences shared in this dissertation) with a wider audience

by publishing the narrative in a popular press forum. Sharing the narrative in this format offers potentially high exposure to readers and accomplishes two distinct goals.

First, it makes what may otherwise be subversive or invisible (e.g. oppressive structures), visible to a larger public beyond the confines of the lived experiences of the pilots who participated in this research. Secondly, the narrative highlights challenges and illuminates the ways in which these pilots negotiated structural inequalities, overt sexism and explicit racism to achieve a desired goal. These women's dual non-dominant status as African American women within a dominant co-cultural group that is overwhelmingly male and secondarily, overwhelmingly White, may provide insight and strategic guidance to other persons and groups who find themselves working in professions with similar demographic conditions.

Creative nonfiction, also referred to as narrative nonfiction, is capable of conveying such messages in this intended manner. It is read faster, comprehended better, and retained for a period of time far longer than non-narrative writing (Dahlstrom, 2014).

Creative nonfiction writing, also referred to as new journalism in decades past, was popularized by writers such as Gay Telese and Tom Wolfe, whose work was embraced by readers and publishers but not without controversy. In large part, Lee Gutkind, a pioneering figure in pushing the boundaries of "acceptable" forms of writing in academia, is responsible for the ability to write a portion of this dissertation in such a format. He has spent decades advancing the genre within the Academy as a valuable technique and tool (Gutkind, 2012).

Princeton professor, former *Times* writer and longtime contributor to *The New Yorker*, John McPhee refined the craft of creative nonfiction writing. His accessible

writing style has brought otherwise obscure and specialized information into the purview of a larger public. McPhee is widely viewed as a pioneering figure in the genre. Because of McPhee's landmark single-subject book, *Oranges* in 1967 and dozens of other books and articles on specialized topics such as long-haul trucking (2003), the reading public has had the chance to become more informed in a non-threatening, compelling and entertaining format—creative nonfiction.

H. L. (Bud) Goodall Jr.'s (2000) important and widely respected work on narrative writing and reporting ethnographic work in narrative form also addresses the importance of narrative nonfiction writing as a valuable method and style within the broad spectrum of the sciences and humanities.

Professional programs that prepare physicians and lawyers for notable, productive careers for a lifetime of achievement post-graduate school embrace narrative methods—methods that include approaches to listening; inquiry; writing, and conveying complex information to non-expert audiences; in other words, effective communication.

The need to communicate complex information to a general audience has created a space for creative nonfiction that deviates from traditional academic writing, which is value rich but maintains the opportunity to receive value added. Creative/narrative nonfiction writing is an important outlet and contribution that adds value and visibility to otherwise generally unseen, specialized information typically published in the annals of academic journals.

I embraced the opportunity to write my dissertation findings in a format that contributes to the practice of adding value to the traditional standards of academic writing

and reporting. The spoken words of famed author and public intellectual Doris Lessing are fitting here. Lessing recounted in a 1985 CBC broadcast lecture,

I think when people look back at this time—the one we’re living through—they will be amazed at one thing more than any other. It is this—that we *do* know more about ourselves now than people did in the past, but that very little of it has been put into effect.

Narrative nonfiction’s approach to reporting and sharing information in academic scholarship and with general audiences may play a role in putting this knowledge into effect—mobilizing, using and activating the narrative lessons collected here. Narrative nonfiction has the capability and capacity—from a consumer standpoint—to place the findings of academic scholarship into the hands of a wider public. The compelling, accessible, informative and entertaining focus of the genre makes creative nonfiction a useful vehicle for challenging ideas, proposing action and informing an interested public through readily available, consumer friendly outlets such as magazines, books and electronic publications.

The complexity and rigor required to imbed traditional components of academic reporting culled from a traditional literature review and to reconstruct the traditional findings and conclusion chapters into a narrative takes a unique and perhaps personal approach to craft.

For those trained in traditional academic writing, migrating to the narrative craft can be difficult, challenging and frustrating (see Zirulnik, Gutkind, & Guston, 2015). My experiences “playing,” or trying out the craft of writing creative nonfiction in short-story form was a useful training ground for this project. Gaining feedback from an

experienced, expert writer in the genre was also helpful. Reading the *how to* books on creative nonfiction (Goodall, 2000; Gutkind, 2012) along with reading creative nonfiction works of important authors who are celebrated as exceptional writers in the genre were powerful guides in shaping the construction of this project's narrative. Lacking in some sense are the *how to* guides on how to turn transcripts into narrative story and entertaining dialogue.

Reflections on Creative Nonfiction Writing

From a point of personal reflection, it was over the course of many months of thinking, testing, and revising narrative story components before I felt comfortable with writing creative nonfiction. I wrote sections at a time, not in any logical progression or order or outline. The narrative developed organically. Much like the patchwork of a quilt, this narrative slowly cohered and expanded. Although cliché, as when I create other artistic forms such as sculptures, I came to a point one day when I felt at peace with the narrative. It was a place where I felt, viscerally, that I had done justice to the stories the co-researchers (pilots) had entrusted me with. Only at that point did I begin to refine and revise the narrative (see the methods chapter for more information).

Accessibility, practical application, thought provocation, promotion of active engagements with the material in non-academic environs were key to the reportage of this project's findings. In this regard, the inclusion of a creative/narrative nonfiction chapter was an integral component to the project. Creative nonfiction writing is useful if it fits the goals and intentions of the author(s). It can be a challenging genre if it is to be held up to standards set forth by its famed predecessors such as Princeton professor, former *Times* writer and longtime contributor to *The New Yorker*, John McPhee and

newest elites, such as Rebecca Skloot, author of *The Immortal Life of Henrietta Lacks*. Noteworthy, in consideration of using creative nonfiction in the reportage of academic research, is the rich history of narrative research and writing (Goodson & Gill, 2011; Gutkind, 2012; Lauritzen, & Jaeger, 1997) along with the resonant power of creative/narrative nonfiction (Dahlstrom, 2014).

Limitations

Although 10% of all Black and African American female ATPs who work for legacy carriers in the US were interviewed for this study, this percentage accounts for just two participants. Given the low numbers of group members available, this research sacrificed breadth for depth. The two pilots' experiences may not be representative of the entire population of 20 Black and African American female ATPs working for legacy carriers or the estimated 90 pilots that meet these demographic characteristics industry-wide (Zirulnik, 2013). However, their experiences are real, and they inform the way in which non-dominant co-cultural group members use co-cultural strategies to navigate and negotiate communicative interactions in their professional lives.

While co-cultural theory serves as one lens from which to approach a research question, its limitation exists in this fact—it is one of many frames from which questions can be investigated. Co-cultural theory offers researchers an important perspective—focusing attention on the lived experiences of the persons involved in the study. In part, what is missing in this study, as with the use of any specific framework, are the perspectives, voices, and views from the other sides of the communicative interactions under investigation. Although external actors inform this study, it primarily reports the experiences of the co-researchers (pilots). The use of other paradigmatic structures and

methodological approaches to investigate these same research questions can be used to further inform the questions raised by this study.

A third limitation of my research is the use of recalled data—the memories and stories shared by co-researchers. It is commonly recognized that memory may be fallible and there is some natural bias in recalling one’s own and other’s behavior in memories. However, the memories and experiences shared by co-researchers collected in this study represent critical events and important parts of their lives. These memories had salience for these co-researches in how they made sense of their lives. Important to the study, these memories reflect their sense making of the events. Another limitation is that participants were aware that they were being recorded which may have caused them to be hesitant in some cases about specific details they wished to share in the interviews.

Future Research

Creative/narrative nonfiction writing and co-cultural theory are similar in that both can be used methodologically to conduct research. Their unique approaches to understanding the world from a lived experience are complementary. Together, the creative nonfiction genre and co-cultural theory offer the chance to develop robust methodological principles that address a host of research surrounding qualitative inquiry. Together, they offer the ability to share both qualitative and quantitative data in an easily consumable format. Exciting areas of intersection exist for creative nonfiction writing and co-cultural theory. They include formulating research questions, relationship building with co-researchers/study participants, interviewing techniques, data analysis, and sharing results/writing narratives. The use of a method of inquiry heavily informed by nonfiction and co-cultural theory offers an opportunity to create a methodological

approach that bolsters the standalone strength of each, co-cultural theory and creative nonfiction writing.

While development of a new method of inquiry is a lofty research program in itself, this dissertation led to other applied and theoretical components. Here, I will briefly address those items, some of which are reiterated from preceding sections in this chapter.

From an application based standpoint, as stated previously in this chapter, the lack of acknowledgement, analysis, training, and skills acquisition in conflict management and intercultural communication training with regard to systematic oppression and how microaggressions may disrupt effective CRM requires further attention. The experiences of this study's co-researchers are not markedly different from the experiences of other non-dominant group members. Therefore, I have recommended a number of steps that can be taken to address this shortfall in the elaborate syllabus of CRM training (see the section titled, "Applying the Research to Inform CRM Curriculum"). Formal attention ought to be given to each component of these recommendations. Preliminary testing of new curriculum and simulations is a prudent next step for successful implementation and scalability. Further research on the processes in which pilots communicate in the flight deck is an area that requires further attention as the demography of the piloting group continues to evolve. This research can be accomplished in a variety of ways including the analysis of flight deck recordings harvested from aircraft voice/data recorders.

Outside of the aviation sector, CRM and its related components, such as the use of checklists, inform and shape the actions and procedures of a host of other industries. This includes the practice of medicine (Gawande, 2010) and other team-oriented operations

that account for work in the police and fire services (Helmreich & Merritt, 1998; LeSage, Dyar, & Evans, 2011).

From a theoretical lens, what this study's data suggests, is that "strategic alliance building" (provisionally defined as, instances when co-cultural group members make the conscious decision to gain social alliances from dominant co-cultural group members within the organization through strategized interaction(s) that have a predetermined intent and goal) may be a new co-cultural communication strategy not previously identified in earlier theorizing. Beyond the focused, ethnographic approaches of this study, survey design and data collection on a broader scale may provide data to support or refute the inclusion of this proposed strategy. Additional interviews of co-researchers who operate as professionals under similar circumstances as the pilots in this study may also inform the inclusion or exclusion of strategic alliance building as a co-cultural communication strategy.

Additionally, meta-analyses of previous research that have used co-cultural theory in their research over the nearly 20 years since it was proposed by Orbe in 1996 offers an opportunity to seek thematic trends and may inform further developments in co-cultural theorizing.

A Final Note

The stories in this dissertation, shared with me by the stories' protagonists—the pilots—and other characters and informants, are stories and ideas that I collected with care, listened to closely and analyzed with painstaking detail. The writing was checked and fact-checked. It was proofed and then read back to both pilots to ensure accuracy in detail. I took and take this role of collecting information and stories and crafting it into

consumable narratives with a posture of seriousness and responsibility. The trust instilled in me by so many—those who wished to be identified and many others who wished to remain anonymous—is humbling.

The years spent working on this project were important for a number of reasons outlined above. The goal is for this work to have a broad reach—to inform future scholarship, to improve pilot communication in a manner that addresses structural inequities, and to entertain while simultaneously inform an interested public with the narrative stories of First Officer Cook and Lieutenant Colonel LeBlanc.

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APPENDIX A
DATABASE OF BLACK & AFRICAN AMERICAN FEMALE PILOTS IN THE US
AVIATION SECTOR

**Database of Black & African American Female
Pilots in the US Aviation Sector
(2013/2014)**

LEGACY	CA	FO	TOTAL
Alaska Airlines			1
American Airlines			3
Delta Air Lines			3
Hawaiian Airlines			0
United Airlines			11
US Airways (now American Airlines)			2
TOTALS			20
MAJOR-NATIONAL LLC	CA	FO	TOTAL
AirTran Airways (AT)			DND*
Allegiant Air			DND
American Eagle Airlines			DND
ExpressJet	0	9	9
Frontier Airlines			DND
JetBlue Airways			1
Republic Airlines			0
SkyWest			DND
Southwest Airlines (Subsumed AT)			2?
Spirit Airlines			DND
Sun Country Airlines			DND
Virgin America			0
TOTALS			
REGIONAL	CA	FO	TOTAL
Air Wisconsin			DND
Cape Air			0
CommutAir	1	1	2
Compass Airlines			DND
Era Alaska			DND
GoJet Airlines		1	1
Great Lakes Airlines			DND
Horizon Airlines			0
Island Air			DND
Mesa Airlines			1
Mesaba Airlines			DND
Peninsula Airways			DND
Piedmont Airlines			DND
Pinnacle Airlines			DND
PSA Airlines			DND
Seaborne Airlines			DND
Silver Airways	1	0	1
Trans State Airlines			DND

TOTALS			
CHARTER	CA	FO	TOTAL
Atlas Air			
Falcon Air Express			
Key Lime Air			
Miami Air International			
North American Airlines			
Omni Air International			
Sky King			
World Airways			
Xtra Airways			
TOTALS			
FRACTIONAL	CA	FO	TOTAL
Avantair			
CitationAir			
FlexJet			
Flight Options			
NetJets			
PlaneSense			
XOJET			
TOTALS			
CARGO	CA	FO	TOTAL
ABX Air			
Air Net private Charter			
AirNow			
Air Transport International			
Alaska Central Express			
AmeriFlight			
Amerijet International			
Centurion Air Cargo			
Chery Air			
Empire Airlines			
Evergreen International Airlines			
Federal Express			
Flight Express			
Kalitta Air			
Kalitta Charters			
Lynden Air Cargo			
Mountain Air Cargo			
National Airlines			
Northern Air Cargo			
SkyLease Cargo			
Southern Air			
United Parcel Service			
USA Jet Airlines			
TOTALS			
		134	
PART 135	CA	FO	TOTAL
Air Cargo Carriers			

Kenmore Air			
Ram Air Freight			
TOTALS			
	CA	FO	TOTAL
*DND—Data Not Discoverable			

APPENDIX B
COMMUNICATION ORIENTATIONS

COMMUNICATION ORIENTATIONS

		Preferred Outcome		
		Separation	Accommodation	Assimilation
Communication Approach	Nonassertive	Nonassertive Separation Orientation	Nonassertive Accommodation Orientation	Nonassertive Assimilation Orientation
	Assertive	Assertive Separation Orientation	Assertive Accommodation Orientation	Assertive Assimilation Orientation
	Aggressive	Aggressive Separation Orientation	Aggressive Accommodation Orientation	Aggressive Assimilation Orientation

Figure 1: Formulation of Outsider Within Communication Orientations (Orbe, 1998, p. 242)

APPENDIX C

CO-CULTURAL PRACTICES AND ORIENTATIONS SUMMARY

Co-Cultural Practices and Orientations Summary

Practices and Orientations Summary	
<i>Examples of Practices</i>	<i>Brief Description</i>
Nonassertive assimilation Emphasizing commonalities	Focusing on human similarities while downplaying or ignoring co-cultural differences
Developing positive face	Assuming a gracious communicator stance in which one is more considerate, polite, and attentive to dominant group members
Censoring self	Remaining silent when comments from dominant group members are inappropriate, indirectly insulting, or highly offensive
Averting controversy	Averting communication away from controversial or potentially dangerous subject areas
Assertive assimilation Extensive preparation	Engaging in an extensive amount of detailed (mental/concrete) groundwork prior to interactions with dominant group members
Overcompensating	Conscious attempts—consistently enacted in response to a pervasive fear of discrimination—to become a superstar
Manipulating stereotypes	Conforming to commonly accepted beliefs about group members as a strategic means to exploit them for personal gain
Bargaining	Striking a covert or overt arrangement with dominant group members in which both parties agree to ignore co-cultural differences
Aggressive assimilation Dissociating	Making a concerted effort to elude any connection with behaviors typically associated with one's co-cultural group
Mirroring	Adopting dominant group codes in attempt to make one's co-cultural identity more (or totally) invisible
Strategic distancing	Avoiding any association with other co-cultural group members in attempts to be perceived as a distinct individual
Ridiculing self	Invoking or participating in discourse, either passively or actively, which is demeaning to co-cultural group members
Nonassertive accommodation Increasing visibility	Covertly yet strategically maintaining a co-cultural presence within dominant structures
Dispelling stereotypes	Myths of generalized group characteristics and behaviors are countered through the process of just being one's self
Assertive accommodation Communicating self	Interacting with dominant group members in an authentic, open, and genuine manner; used by those with strong self-concepts
Intergroup networking	Identifying and working with other co-cultural group members who share common philosophies, convictions, and goals
Using liaisons	Identifying specific dominant group members who can be trusted for support, guidance, and assistance
Educating others	Taking the role of teacher in co-cultural interactions; enlightening dominant group members of co-cultural norms, values, and so forth
Aggressive accommodation Confronting	Using the necessary aggressive methods, including ones that seemingly violate the rights of others, to assert one's voice
Gaining advantage	Inserting references to co-cultural oppression as a means to provoke dominant group reactions and gain advantage
Nonassertive separation Avoiding	Maintaining a distance from [sic] dominant group members; refraining from activities and/or locations where interaction is likely
Maintaining barriers	Imposing, through the use of verbal and nonverbal cues, a psychological distance from dominant group members
Assertive separation Exemplifying strength	Promoting the recognition of co-cultural group strengths, past accomplishments, and contributions to society
Embracing stereotypes	Applying a negotiated reading to dominant group perceptions and merging them into a positive co-cultural self-concepts
Aggressive separation Attacking	Inflicting psychological pain through personal attacks on dominant group member's self-concepts
Sabotaging others	Undermining the ability of dominant group members to take full advantage of their privilege inherent in dominant structures
NOTE: These Communicative practices are example of tactics enacted to promote each orientation. It is important to recognize that depending on the other personal, interpersonal, or organizational factors, one tactic (i.e., communicating self) can be used innovatively to promote more than one communication orientation.	
Figure 2: Formulation of Outsider Within Co-Cultural Practices & Orientation Summary (Orbe, 1998, pp. 249-250)	

APPENDIX D
INTERVIEW GUIDE

Interview Guide

This interview guide is simply that—a guide. At any time, should you recall a memory or experience even after we’ve moved past a question, please feel free to share that information. Moreover, you are welcome to help guide our conversation and share information that is particularly important or you think relevant to the focus of this project. [Note: These questions are written as semi-structured interview questions solely for guidance in this immersive study that allows for emergent data collection.]

Pathway to becoming an ATP

- Tell me about growing up as a child. What was your day-to-day family like?
- When did you become interested in aviation?
 - What got you interested?
- When did you decide that you’d become a commercial ATP?
 - How did you go about doing this?
- When you told family and friends about your plans, what were their reactions?
 - Can you provide me with specific examples?

Education/Expense/Getting Hired

- How did the journey to where you are today professionally begin?
 - What were the first steps?
- What was the path you took to earning your ATP?
- What was your experience like getting your first commercial piloting job?
 - Can you recall any instances that are memorable about your interactions with chief pilots, HR representatives or recruiters given your dual minority status?

- How did you respond/present yourself to him/her? Is there anything important or memorable you think I should know about your journey to this point?

INTERACTING WITH COWORKERS—IN THE FLIGHT DECK

Given your minority status in a profession that is predominantly comprised of White, hetero-normative males, I'm interested in learning about what the communication dynamic is like for you in the flight deck.

- Do you notice a difference in the “feel” of the FD when flying with women versus men?
 - What is different about the interaction?
- Have you flown with another Black or African American male or female pilot?
 - What was or were those experiences like?
 - How were they different when flying with a White male pilot?
- There is a perception that piloting is a “good old boys club.” Please respond to this claim in whatever way you'd like.
 - How has this impacted your work-life?
 - Harassment?
 - Challenges?
- Do you think you are held to a different standard than your White male counterparts? (Ask co-researcher to elaborate if applicable).
- Other than the obvious (topic), when you come to work, what's different about your communication with family and friends versus your communication with co-pilots?

- What does this look like or sound like?
- Tell me more about your life in the flight deck.
 - What are some memorable moments?
 - Communicating with ATC, ground ctrl., other AC, etc.
- Can you recall any instances of blatant or subversive discrimination you experienced or imposed?
 - Please tell me about those experiences.
 - What happened?
- What does your career trajectory look like from here?
 - Will race and gender help or hurt your career moving forward?
 - Please explain.

ADDRESSING MY OWN PRIVILEGE

- Is there anything you didn't share with me because I am a White male?
 - Will you tell me what those things are now?

CABIN INTERACTIONS (w/FAs)

- What is your experience like in communicating with flight attendants?

Wrap-up

We've covered quite a bit of space in your life as a person and specifically as an ATP. Before we conclude with the "formal" interview process, I want you to know that you are welcome to call me anytime to share any additional information with me that comes up that you think I should know.

- That said, of the questions I didn't ask, what is or are the most important issues to you as a Black female pilot in the US?
 - Tell me more...
- Is there anything else you'd like to share with me?
- Thank you...

APPENDIX E

INSTITUTIONAL REVIEW BOARD APPROVAL DOCUMENTS



EXEMPTION GRANTED

Janet Alberts
Human Communication, Hugh Downs School of

Dear Janet Alberts:

On 8/14/2014 the ASU IRB reviewed the following protocol:

Type of Review:	Initial Study
Title:	The Elite Status of a Non-Dominant Class: Black And African-American Female Airline Transport Pilot's Lived Communicative Experiences in the Flight Deck
Investigator:	Janet Alberts
IRB ID:	STUDY00001275
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	<ul style="list-style-type: none">• BFP COVER LETTER.pdf, Category: Consent Form;• Michael.docx, Category: IRB Protocol;• Semi-Structured Interview Guide.docx, Category: IRB Protocol;• CITI Training Report MZ 2013.pdf, Category: IRB Protocol;

The IRB determined that the protocol is considered exempt pursuant to Federal Regulations 45CFR46 (2) Tests, surveys, interviews, or observation on 8/14/2014.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Sincerely,

Communication in the Flight Deck—Black Female Pilot’s Lived Communicative Experiences

12 August 2014

Dear Participant:

I am a graduate student under the direction of Professor Jess Alberts in the Department of Human Communication at Arizona State University.

I am conducting a research study to investigate the elite status of a non-dominant class: Black and African American female airline transport pilot’s lived communicative experiences in the flight deck. I am inviting your participation, which will involve your voluntary participation in an interview and professional relationship whereby I (*the researcher*) will interact with or “shadow” you in your day-to-day life and/or work environment. With your consent, I would like to audio record the interview. Please let me know if you do not want to be recorded. You can change your mind after we start just let me know.

Your participation in this study is expected to take one to five days of your time (ranging from approximately 2 to 20 hours). The interview portion of the study is expected to take approximately 2 to 5 hours. The shadowing portion of the study is expected to take up to 15 hours.

By “shadowing” you, I intend to spend time interacting with you as we move about the day(s) together. This may include observing your interactions with others as I stand back silently and watch you participate in your day-to-day functions in your home environment or out in public spaces. This may also include observing you in your uniform as you walk through the public spaces of airports where I will make observations and notations about how I see the public responding to your presence and how you may communicate with others (including the general public and colleagues that you may encounter).

Your participation in this study is voluntary. You can skip questions if you wish and you may elect to participate in both the interview portion and “shadowing” portion of the study or one or the other. If you choose not to participate or to withdraw from the study or any portion of the study at any time, there will be no penalty. You must be 18 or older to participate in the study.

Although there is no immediate benefit to you, possible benefits of your participation include: 1. adding validity to developing a larger study that 2. may inform revision of procedures related to aircraft operations and 3. revision of curriculum design and development of crew resource management training. There are no foreseeable risks or discomforts to your participation.

Your responses will remain confidential unless you decide to sign a *release of confidentiality* by signing the release of confidentiality below.

With your consent digital audio recordings will be made of some or all interviews. The recordings will be stored on an encrypted computer hard drive accessible to the research team on a doubly password protected system for the duration of two years at which time the recordings will be destroyed through deletion of the files.

The researcher will use the recordings to analyze differences and similarities in responses from all study participants. The recordings will also help in allowing the researcher write narrative stories about each participant in an effort to communicate participant's experiences to a wide audience of interested readers.

If you have any questions concerning the research study, please contact the research team at [REDACTED]. If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at [REDACTED].

Participation in the interview process will be considered your consent to participate.

By signing below you agree to be identified in publications (this *release of confidentiality* is optional):

Participant's Full Name (PRINTED)

Date

Participant's Signature

Sincerely,

Michael L. Zirulnik,
BSc., MCIS, PhD. Candidate

Disclosure Form/Release of Confidentiality

I _____ hereby decline to have my name remain confidential and insist on the use of my full identity (including my name and descriptive characteristics and traits) in the dissertation study titled, “The Elite Status of a Non-Dominant Class: Black And African American Female Airline Transport Pilot’s Lived Communicative Experiences in the Flight Deck” and in any and all publications associated with this study.

I recognize the study is a dissertation project being conducted by Michael L. Zirulnik at Arizona State University under the direction of Dr. J. Alberts and Dr. B. Broome in The Hugh Downs School of Human Communication and I am aware that the study and its publications will be made publically available.

Although given the option to have my information remain confidential, I am fully aware of the potential risks and ramifications of refusing confidentiality in this study, which may include termination, harassment or sanctions from my employer, the public and/or family and friends.

Given the above risks and potentially others not foreseen withstanding, I affirm my desire to NOT have my name remain confidential and to have my voice heard and associated with my full name in this study and associated publications.

Participant’s Full Name (PRINTED)

Date

Participant’s Signature

Witnesses’ Name (PRINTED)

Date

Witnesses’ Signature

Researcher’s Name (PRINTED)

Date

Researcher’s Signature

BIOGRAPHICAL SKETCH

Michael L. Zirulnik entered the doctoral program at Arizona State University's Hugh Downs School of Human Communication in 2010. His research focuses on organizational effectiveness, negotiation and intercultural conflict. He has remained a steadfast proponent of education and maintains tenure as an adjunct professor within higher education. He is Chair of the Peace and Conflict Communication Division of the National Communication Association based in Washington, DC. Michael earned a Bachelor of Science (2003) with a double major in communication and applied physics from Rutgers University. In 2005 Michael was awarded the degree, Master of Communication and Information Studies from Rutgers University with a focus in organizational communication and information systems. Within the time span of his career in academia, Michael held full-time positions in the emergency medical service; enjoyed a career as an internationally based flight attendant; founded and directed a design firm with operations in New York City and New Jersey; and founded a communication consulting firm in Phoenix, Arizona.