Double Consciousness: Managing Multiple Identities at School

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Abstract

Identity management is used in order to manage the salience of a minority identity. The field of Science, Technology, Engineering, and Mathematics (STEM), it is dominated by men. The number of women in the field has been slowly increasing. However, the larger increase has been in women seeking and getting STEM degrees, but not in those becoming and staying employed in STEM. Thus, I examined how women in STEM use multiple identity management tactics. I wanted to know if college women in STEM were using identity management tactics, and if so, if they were favoring social recategorization or positive distinctiveness tactics. The findings show that the identity management tactics that are most used (i.e., social recategorization) might be linked to a short-lived career or psychological exhaustion experienced by the person managing multiple identities.

Double Consciousness: Managing Multiple Identities at School

Introduction

As we look at the advancement of women in Science, Technology, Engineering, and Mathematics (STEM) careers, the numbers and statistics can be misleading. For every victory of another woman studying or graduating with a STEM degree, there is a woman leaving the STEM career industry for one of many reasons. Today, women are 57% of the college graduates ("The State of Girls and Women in STEM", 2016). However, once in college women are pursuing degrees in STEM in smaller numbers. Only 18.2% of women are taking home degrees in computer sciences, 19.2% in engineering, and 43.1% in mathematics and statistics (National Science Foundation, 2014). This breakdown is interesting because while more and more women are getting educated at a higher degree, they still are not penetrating the male-dominated STEM fields for employment. Even though there are less men overall getting a college education, there are consistently more men taking home STEM degrees: 45% in computer science, and 36.86% in engineering ("Women in STEM: A Gender Gap to Innovation", 2011). For example, in engineering, women are 20% of the graduating students, but they only make up 11% of the actual workforce. In fact, "among women who earned engineering degrees, over a third (38%) quit engineering or never even entered the profession ("Women in Science, Technology, Engineering and Mathematics", 2016). Because the women in the STEM workforce does not represent the amount of women graduating with STEM degrees, there seems to be a disparity for women. Not only are they having to face the obstacle of being a minority in their college courses, but they are faced with a similar problem once out in the workforce.

Women hold less than 25% of STEM jobs and there is a correlation between their work experience and their decision to leave science, engineering, and technology ("Women In Science, Technology, Engineering and Mathematics", 2016). In fact, according to catalyst.com, the peak of woman's career in these industries max out at only 10 years. With women who are already in the field either feeling forced out or self-selecting out, this greatly decreases the availability of mentors for graduating women wanting to enter the workplace. According to the Department of Commerce, there are multiple factors that affect women in STEM, including a lack of female role models, gender stereotyping, and less family-friendly flexibility in STEM fields ("Women in STEM: A Gender Gap to Innovation", 2011).

Gendered fields like STEM make a person's token identity become salient. A token identity, as described by Rosabeth Moss Kanter in *A Tale of 'O': On being different* is simply "being the only one of your kind in a group of another kind" (1987, p. 14).This becomes problematic when a person is the only one of their identity in a group and feels pressure to represent their group in a positive way at all times. In this case, a woman in a company where she is either the only female or one of a few females might feel she must be the best employee in order to represent all other women positively or dispel negative stereotypes about her group (Steele, 1997). "As women reach positions of higher power and authority, they increasingly find themselves in gender-imbalanced groups…and find themselves seriously marginalized" (Eagly & Carli, 2007). This marginalization creates much more stress for the token minority and is a stress that the people who make up the majority do not have to deal with. When a token person – such as women, people of color, or LGBTQ people – are in the workforce, they often feel stuck. They are reported responding to this feeling with lower performance, low aspirations, and a low

level of commitment to the organization (Hewlett & Luce, 2005). When the token person does not see another person like them succeeding, it discourages them and adds more stress.

Because women in STEM do have a token identity, they may feel as though they must manage it. In some instances, they might even try to create a double identity in order to present a certain way in their work or school groups. In Ella Louise Bell's study of career-oriented black women, she found that the women in her study" perceived themselves as living in two distinct cultural contexts, one black and the other one white. The women compartmentalize the various components of their lives in order to manage the bicultural dimensions" (1990, p. 459). There are several ways to manage an identity, which I will discuss at more length later on in this paper. This study was implemented to see how college women in a Midwestern State University are managing their identities. Focusing on those pursuing STEM degrees, I wanted to see what beliefs and practices these college students are taking into the workforce.

Theory Development

Most people want to present the best version of themselves in social situations. There are not many people that want to be considered unintelligent or part of the "outgroup". In places like a college classroom or in the workplace, this idea is the same. People generally want to do their best, be recognized for it, and fit in. "Through self-categorization in multiple groups people identify similarities between themselves and other" (Roberts & Creary, 1998, p. 74). The theory behind this need to fit in is called the "strategic management of social identity" and is specific for people that would be considered in the "outgroup" (Roberts, Settles & Jellison, 2008). Individuals who are members of devalued, socially marginalized groups are more likely to take part in deliberately suppressing or displaying themselves in a different way where they do not share the characteristics normally associated with their social group. "Members of the

subordinate group must abandon their own group in order to seek out the rewards and psychological well-being of the dominant group" (Bell, 1990, p. 464). This strategic way of presenting oneself helps to negate and cope with negative stereotypes or group stigmatization by trying to alter other's, i.e., the ingroup's, perception of their social group. Many times, the research for diversity or for congruity is focused on "how others perceive and evaluate those who fit prototypes for gender and leadership, but doesn't examine how people navigate the self" (Roberts & Creary, 1998, p. 78). It is important to understand how individuals "proactively engage in identity construction and how they respond to or avert these perceptions" (Roberts & Creary, 1998, p. 78).

Intersectionality is important in this study and other studies about social identity management (SIM) because a person's identity stems from multiple sources. For example: a white woman and a black woman both have the same identity as woman, but the added identity of race contributes to how the person will respond and participate in social identity management. The same goes for any other social identity group. Race, class, language, ethnicity, sexuality, gender, education, and ability are all examples of how a person's identity is composed of multiple distinct memberships that intersect in unique ways. In 2009, Bell's study of black professional women showed how the women created two separate and fluid identities that they stepped into and out of depending on their environment (Roberts & Creary, 1998, p. 78). The women in this study were managing their identity differently than white women might be managing their identity, even if they had similar careers. Because of this, we cannot assume one woman is going to have the exact same SIM tactic as another woman. Highlighting intersectionality or the cross cutting of identities "can help to reduce the salience of the demographic categories within the group that might mirror those that are socio-historically

associated with status differences, since those are the ones that can drive negative intragroup dynamics unless actively counteracted" (Ridgeway, 1991; Ridgeway and Correll, 2006, p. 322). However, with this study we want to see what was the most common. We can also see how a person's SIM response can make a difference in their willingness in being a mentor for other women or participate in programs aimed at increasing the advancement of other women in STEM fields.

When discussing Social Identity Management, there are different tactics that can be taken to manage identity. Normally, these tactics are used by individuals that are considered part of an outgroup. There are two types categories for social identity management tactics: positive distinctiveness tactics and recategorization tactics (Roberts, 2005, p. 695). Positive distinctiveness tactics are less likely to cause mental distress to the individual. Recategorization tactics are considered more harmful to a person's psyche. If a person takes part in recategorization tactics, they either take part in decategorization or assimilation.

Decategorization is "emphasizing the traits that are viewed favorably but are not associated with the devalued group" (Roberts, 2005, p. 695). With decategorization, the person using it is focused on removing themselves from the out group they are associated with and manage their identity by distancing themselves from any unfavorable traits associated with their undesirable category. "People make favorable, self-enhancing comparisons between in-groups and out-groups to increase the positivity of their self-regard" (Roberts & Creary, 1998, p. 76). The other recategorization tactic is assimilation. Assimilation takes the disassociating process a step further and the person immerses themselves in the identity that is considered positive for the group they are involved in. According to Roberts et al., assimilation is a process that "encompasses attempts to reduce the salience of one's own social identity by emphasizing

distinctiveness from one's own social identity group and similarities with members of more positively regarded social identity groups" (as cited in Dovidio et al., 2000; Ellemers et al., 2002; LaFramboise, Coleman, & Gerton, 1995: Thomas, 1993). In the case of STEM fields, these positive identities include being straight, male, or white. "It is important for individuals to align their actions and sense of self with the expectations of a given role" (Roberts & Creary, 1998, p. 78). Assimilation is a way for members of an outgroup to align themselves with members in a group that is considered positive in an organization. If a woman was going to assimilate in a male dominated environment, she might do so by becoming more masculine or assertive and adopting other traits that are considered masculine in order to tone down her femininity. An example of this is in Roberts' study of image construction where female attorneys would adopt masculine characteristics in order to meet their firm's requirements for success (as cited in Ely, 1995).

Positive distinctiveness tactics may be a healthier way for underrepresented minorities to handle social identity management rather than recategorization tactics (Scott, Smith & Wang, 2017). Positive distinctiveness tactics include integration and confirmation (Roberts, 2005, p.696). Integration "refers to attempts to incorporate a given social identity into one's professional image by communicating the favorable attributes of the identity group and challenging others' simplistic or negative stereotypes of that group" (Roberts, 2005, p.696). In this case, integration would be an employing playing up characterizations that they have and mixing them into the organization's ideas of positive traits. This would be a woman in a male dominated environment acknowledging that she is a woman but setting out to show her peers and her company that her traits are invaluable. In a study with CEOs about leaders of diversity, Groysberg and Connolly stated that many CEOs "said that women were less political, less likely

to define themselves by their careers, more collaborative, better listeners, more relationship oriented, and more empathetic and reasonable" (Groysberg & Connolly, 2013, p. 72). Confirmation identity strategies "involve capitalizing on social identity stereotypes in order to gain desired rewards and outcomes" (Roberts, 2005, p.697). In this case, a woman in a male dominated environment might say "yes I am a woman, and I am going to use the stereotypes used against me to move up in the organization".

Given this background, my research attempts to understand the tactics used by minorities (namely, women), in STEM educational fields to manage the pressures of maintaining a valued image in a potentially devaluing field. Specifically, my research question is: what SIM tactics do female STEM students use to manage their identities in and around their class activities, and does their choice of SIM tactic depend on their field of choice.

Current Study

In this study, I drew from the framework of social identity management. My question was how college women studying science, technology, engineering, and mathematics were managing their identity. Knowing that so many women either drop out of the workplace or do not even enter the workplace, I wanted to see what kind of SIM tactics college women were participating in.

Hypothesis 1

For my first hypothesis, I expect to see a direct correlation between women and the use of social identity management tactics. Given that women in STEM are either self-selecting out quickly or ending their career after 10 years, I believe that there must something happening to women that are involved in this field. From Bell's study of black professional women, she

claimed “their stories reveled that they were constantly proving their worth, in order to compensate for their race and gender; the women got trapped in the never-ending struggle of having to be ‘super-women’” (Bell, 1990, p. 473). I believe that there is a similar feeling among women in STEM, because it is a male dominated field there might be a widespread belief that women must be proving their worth at all times. In addition to Bell’s study, I am also drawing from Roberts’ study of social identity management in organizational settings. Roberts stated that “Individuals with concealable stigmas who attempt to pass as ‘normal’ must deal with the constant preoccupation of hiding their stigmatizing condition. Thus, employees who can enact their authentic selves at work spend less time and cognitive energy guarding against stigmatization and may contribute more fully to the workplace” (as cited in Creed & Scully, 2000). Because of this psychological toll of suppressing their authentic selves, women in STEM are dropping out or having short lived careers. This literature makes me believe that if female students in STEM are in a male dominated field, they are trying to assimilate and fit in by hiding their stigma of femininity. I hypothesize that women will take part in assimilation tactics more than men and regardless of their discipline.

Hypothesis 2

My second hypothesis is that the combination of gender and discipline will result in whether or not the individual takes part in SIM tactics. In my study, I expect that women in STEM disciplines will use assimilation tactics more than women in other disciplines. I believe this because of Kanter’s theory of O in a group of X’s (Kanter, 1987, p. 14). I believe that in STEM, women are very much the O’s and they are trying to fit in with the men who are the X’s. In order to fit in as the only one of their kind, I believe they will put more effort into being like the group of the majority. I believe that assimilation will be used to achieve this because it can

"decrease the likelihood that one is categorized as an outgroup member, with can lead to increased liking and benefits from desirable targets" (Roberts, 2005, p. 696). In the case of STEM, women might take part in assimilation in order to succeed and be taken seriously in the field. I believe the combination of gender and discipline of study will result in an increased use of assimilation tactics for women in STEM than for women in other fields.

Methods

Participants & Procedure.

Data for this study come from students from a Midwestern college. They took part in an anonymous online study where they were offered extra credit in their classes, or took the study voluntarily. Students studying STEM disciplines were sent out a link to take the study as well as business students. Students to take the survey were found via snowball and convenience sample recruitment. In the business college only MSIS students as well as Management students took part in the survey. In total 383 completed the survey, however 109 of the students were eliminated because they failed the attention check (N=274).

Measures.

All survey items were measured on Likert type scales. We measured the gender of those taking the survey (0=male; 1=female) as well as the breakdown of the major discipline classification of those in STEM. In this study, the social identity management scale used was used to measure social recategorization and positive distinctiveness tactics (Roberts et al., 2008). An example of one of the questions to determine social decategorization was, "I emphasize my unique traits over any group identity". For social integration an example question from the survey was, "I present the best qualities associated with this concealable identity". To determine

identity confirming, a sample questions was, “I capitalize on my similarities with this concealable identity”. A sample question from social recategorization was, “Try to conduct yourself in a manner inconsistent with stereotypes of your gender”. A sample item from the positive distinctiveness scale was “try to educate your colleagues about the accomplishments of other women” (Roberts et al., 2008). The scales and their corresponding reliability coefficients are listing in the appendix of this paper.

Analysis and Results

Hypothesis 1 was supported with correlation analysis: gender is related to assimilation tactics, such that women are more likely to use assimilation tactics significantly more so than men (r = .136; $p<.05$). College women were more likely to emphasize their identification with their field of study rather than their gender. In fact, one of the women from the university that took part in the study was quoted saying, “I don’t want to be congratulated for being a woman in engineering. I want to be congratulated on being a good engineer”.

Hypothesis 2 was also supported, showing a general trend in support of our predictions. Specifically, women were less likely to confirm their gender role while in STEM disciplines. Compared to their non-STEM counterparts, the college women studying science, technology, engineering, and mathematics were more likely to downplay their femininity ($r=3.87$, p=.05).

Discussion

The fact that college women in STEM are relying on assimilation as their social identity management tactic might be part of the reason for low turnout of women in the workplace. If a woman interested in pursuing a degree and ultimately a career in STEM and realizes that she has to assimilate to the culture during her college years, she might self-select out. If a woman refuses

or cannot assimilate, she might be forced out. Even if she does assimilate, she might become psychologically exhausted by putting so much effort in identity management. Those that take part in social identity management might experience identity conflict. "Identity conflict occurs when one has a strong personal and emotional commitment to two distinct components of life that are incompatible; in this circumstance, one may think it is necessary to betray one's social identity for the sake of one's professional identity, which can be a source of psychological stress" (Roberts, 2005, p. 700). If a person is constantly dealing with these dual identities, it takes away focus from their work and also adds a unique kind of stress. If women are dealing with the added stress from assimilation in college, it makes sense that their careers last on average 10 years because of the psychological exhaustion they experience while being in the field.

Furthermore, while men have an abundance of mentors to choose from, women that would benefit from having a female mentor have much more limited options. The likelihood of getting a female mentor goes down even more assuming that not all women in the workplace would want to be a mentor. Part of the reason that mentorship is so important, especially in situations where the mentee would be a minority, is that it helps make the person feel like they are a token. Future research should examine the impact of dwindling numbers of STEM professionals and mentors for attracting and encouraging new female STEM career entrants.

Conclusion and Future Steps

The next step to this study would be to implement this study with people in the workplace. Knowing that college women from this studying are presumably going into the workplace with the tendency to assimilate into their environment, this study can be used to determine if this idea carries on in the workplace and if so, can be used to help companies create a culture in which their employees feel as though they are accepted and valued no matter what

identity they have. With women feeling as though the need to assimilate, they might not want to take part in programs that are aimed at women. For instance, a female engineer might not want to be a mentor to a new female employee because that would make her feminine identity more salient. Or, a female programmer might not want to attend a workshop about being a woman in the tech industry for fear of how her male colleagues might perceive her. Social identity management might hinder career planning for women in STEM. If a woman is unable to have a mentor when she first starts out, she is missing out not only on the chance to network, but the opportunity to know someone that has gone through similar experiences and gain insight from that relationship.

The findings of this study show that women pursuing a STEM degree are actively trying to assimilate among their male peers. With their energy focused on creating a dual identity, they may be exhausting themselves. Assuming the students take this with them into the workplace, they will get burned out faster than their male counterparts and will not benefit from or be able to provide programs dedicated to female mentorship.

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Appendix A

Social Identity Management Measures	Reliability Coefficient
Recategorization (Lynch, 2015) 1. I emphasize my similarities with our major over my gender identity. 2. I highlight my characteristics associated with my major rather than my gender identity. 3. I play up things I have in common with people in my major rather than my gender identity. 4. I display strengths consistent with people in my major over my gender identity.	alpha = .896
Decategorization (Lynch, 2015) 1. I emphasize my unique traits over any group identity. 2. I play up my individual attributes rather than any group identity. 3. I highlight my distinctive strengths instead of any group identity. 4. I display my own qualities over any group identity.	alpha = .902
Integration (Lynch, 2015) 1. I portray the favorable attributes of my gender identity. 2. I present the best qualities associated with my gender identity. 3. I express the positive aspects of my gender identity. 4. I embody the good characteristics of my gender identity.	alpha = .906
Confirmation (Lynch, 2015) 1. I capitalize on my similarities with my gender identity. 2. I try to gain from the characteristics associated with my gender identity. 3. I take advantage of attributes affiliated with my gender identity. 4. I try to profit from the qualities related to my gender identity.	alpha = .864
Recategorization (Morgan, 2002) 1. Try to be seen as an individual rather than as a member of a gender group. 2. Try to avoid discussing gender or gender issues. 3. Try to emphasize the beliefs/experiences I have in common with my male colleagues. 4. Try to communicate my knowledge of "guy" culture. 5. Try to conduct yourself in a manner inconsistent with stereotypes of m gender.	alpha = .611
Positive Distinctiveness (Morgan, 2002) 1. Try to represent my gender in a positive manner. 2. Try to communicate the inaccuracy of stereotypes about my gender. 3. Try to educate my colleagues about the accomplishments of other women. 4. Try to share aspects of women's culture with my colleagues. 5. Try to be seen as an advocate for women.	alpha = .836

Appendix B

Oklahoma State University Institutional Review Board

Date:	Wednesday, March 30, 2016
IRB Application No	BU1618
Proposal Title:	Female identity in STEM careers
Reviewed and Processed as:	Exempt

Status Recommended by Reviewer(s): Approved **Protocol Expires: 3/29/2019**

Principal Investigator(s):

Courtney Fryar
Stillwater, OK 74078

Alexis Smith
322 BUS
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The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

☑ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

☑ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1.Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval. Protocol modifications requiring approval may include changes to the title, PI advisor, funding status or sponsor, subject population composition or size, recruitment, inclusion/exclusion criteria, research site, research procedures and consent/assent process or forms
2.Submit a request for continuation if the study extends beyond the approval period. This continuation must receive IRB review and approval before the research can continue.
3.Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of the research; and
4.Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Dawnett Watkins 219 Scott Hall (phone: 405-744-5700, dawnett.watkins@okstate.edu).

Sincerely,

Hugh Crethar, Chair
Institutional Review Board