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Women's Work? The Relationship between Farmwork and Gender Self-Perception

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Abstract

Women have long been involved in agricultural production, yet farming and ranching have been associated with masculinity and men. In recent years women have become more involved and more likely to take active and equal roles on farms and ranches and thus increasingly are doing tasks that have been associated with masculinity. Prior work indicates that women are perceived by *others* as more masculine when they do these tasks, but less work has focused on the association between women's involvement in farming and women's *own* perceptions of their gender (i.e., how masculine or feminine they feel). Using 2006 survey data from a random sample of women in livestock and grain operations in Washington State, we find that women's involvement in farm and ranch tasks is associated with their gender self-perception, with more involvement being associated with a more masculine self-perception. Women who view their primary role as independent agricultural producers or full partners also perceive themselves as more masculine than women who view their primary role as homemaker. We discuss the implications of these findings for women's experiences in agriculture.

Introduction

A rich body of literature has focused on women's roles and involvement in agriculture (Jones and Rosenfeld 1981; Rosenfeld 1986; Sachs 1996). Research has revealed women's extensive involvement on farms and ranches and highlighted the contributions that women make, which include involvement in both agricultural and familial tasks (Beach 2013; Brandth 2002; Brasier et al. 2014; Rosenfeld 1986; Sachs 1983). Scholars have addressed how agricultural activities are gendered insofar as the bulk of farming and ranching labor is associated with rural masculinity, in contrast to domesticity, which is associated with rural femininity (Campbell and Bell 2000; Little 2002; Little and Austin 1996). When women do farm or ranch labor, they can be met with hostility and suspicion from men, underscoring how masculinity and agriculture are linked (Brandth 2006; Haugen 1998; Trauger et al. 2008). Although previous work has illustrated the contributions women make to farming and the gendered assumptions surrounding agriculture, less work has focused on the association between women's involvement in farming and women's *own* perceptions of their gender (i.e., how masculine or feminine they feel). Knowing whether there is an association between rural women's involvement in farming and ranching and their gender self-perception provides a more complete picture of the gendered nature of rural life.

Moreover, given the increase in the past decades in the number of women who farm (Hoppe and Korb 2013; USDA NASS 2007),¹ questions of how women perceive farm work and whether there is an association between their involvement and their gender self-perception are important. Since farming and ranching have been so tightly linked to masculinity, it could be that women's involvement in these activities is associated with them perceiving themselves to be more masculine. Yet given the increase in women's involvement in agriculture, it also could be that the link between farming and masculinity is disrupted. As farming diversifies and understandings of femininity and masculinity are based on less rigid roles (Bock 2006), it could

1. Analyses of census data reveal that the number of women farm operators has increased, particularly between 2002 and 2007 (the period when these data were collected), with the number of women farm operators increasing by 19 percent. Between 2007 and 2012, there was a slight decrease in the number of women farm operators (1.6 percent), though this decrease is not statistically significant.

be that women's involvement in agriculture is not associated with a more masculine self-perception. For example, some work illustrates how women enact strategies to maintain femininity while doing masculine tasks in farm contexts (Pini 2005; Schmalzbauer 2011; Shortall 2006). Additionally, research underscores the multiple tasks in which women are involved in agriculture, raising questions about whether and how specific tasks or roles are associated with gender self-perception (Brandth 2002; Brasier et al. 2014).

In this article, we examine the association between women's involvement in farms and ranches and their gender self-perception. We use 2006 survey data from a random sample of women in livestock and grain operations in Washington State, which has one of the highest number of farmers who are women (USDA NASS 2014), to address this question. Specifically, we ask: How is women's level of overall involvement, as well as involvement in specific types of farm and ranch tasks, associated with their gender self-perception? How is women's primary role on the family farm or ranch associated with their gender self-perception? Before turning to our findings, we outline the bodies of literature that inform the current analyses.

Background

Doing Gender

Our work draws on sociological theories of gender that conceptualize gender as both a system of social inequality and as an identity (Connell 1987; Ridgeway 1997; Ridgeway and Smith-Lovin 1999). Specifically, we utilize the theoretical framework of "doing gender," which underscores that it is through our interactions with one another that individuals develop a sense of their own gender identity (West and Zimmerman 1987). Thus, rather than reflect an inner essence or biological differences, sociologists argue that gender itself and as a result gendered identities are produced through social interactions in a given context. In particular, Butler (1990) argues that the repetitive engagement in normatively gendered behaviors in interactions creates the impression that gender and gendered behaviors are natural. Moreover, scholars assert that the "doing" of gender in interactions not only constitutes individual identity but is also predicated upon and

reproduces men's dominance over women and heterosexuality (Butler 1990; Schippers 2007).

Scholars have addressed how gender is produced through our bodily displays and clothing (Herbert 1998; Hutson 2013; Little 2003) and through our interactions at home and work (Ferree 1990, 2010; Martin 2003; Reskin and Padavic 2002). The degree to which there is a separation between the contexts of work and home (i.e., between paid labor and household labor), with men being associated with the former and women being associated with the latter, can sustain gender inequality within heterosexuality (Berk 1985; Ferree 1990, 2010; Reskin and Padavic 2002). Moreover, research indicates that even within the workplace, certain occupations are associated with masculinity while others are associated with femininity and devalued (England 1992, 2010; Williams 2000). Likewise, within the home, activities such as cooking, cleaning, and child care are seen as tasks that women do while mowing the lawn and vehicle maintenance are seen as tasks that men do (Berk 1985; Bianchi and Milkie 2010; Coltrane 2000; Hays 1996; McMahon 1995). In sum, this work shows that social context, particularly interactions and activities in the home and workplace, is intimately tied to gendered norms and expectations and thus shapes people's perception of their gender identity. This work also highlights how gender differences are undergirded by heterosexuality.

Gender in Rural, Farm, and Ranch Contexts

Similarly to other contexts, farms and ranches and tasks in these settings are also gendered, suggesting that the doing of these tasks may influence one's own gender identity. Rural scholars in fact argue that gender and heterosexuality are embedded in many aspects of farm life, from land acquisition to day-to-day labor (Carter 2017; Leslie 2017; Whatmore 1991). In general, farming and ranching, and indeed rural spaces, are seen as masculine (Kazyak 2012; Naples 1994; Sachs 1983, 1996, 2006). Elements of agrarian ideology, such as hard work, overseeing and heading a business (the farm), independence, ruggedness, and working outdoors are associated with masculinity, as is the mechanization of agriculture and focus on commodity production (Brandth 2002; Campbell and Bell 2000; Little 2002; Pini 2004; Rosenfeld 1986). The images of both an independent, rugged farmer (Liepins 2000) and a businessman-like farmer are associated

with rural masculinity (Bell, Hullinger, and Brislen 2015; Brandth 1995). Some farm roles and labor are associated with the enactment of traditional femininity, such as activities associated with the “farmer’s wife” role (Brandth and Haugen 2010; Pini 2004). Scholars argue that the gendered division of farm labor reflects how heteronormativity is embedded in rural life (Little 2003). The “farmer’s wife” role involves a distinct gendered and heterosexualized division of labor, where women’s primary role encompasses traditional femininity within wife, mother, and homemaker roles and men’s primary role is as the head of the farm, with farm-related tasks associated with traditional masculinity (Brandth 2002; Whatmore 1991). Additionally, tasks within farm and ranch contexts are gendered insofar as operations that are livestock intensive have tasks more associated with the care work involved in raising animals while those that are machinery intensive (i.e., field work) have tasks more associated with men and masculinity (Adams 1993).

Despite the traditional gendering of certain tasks, research shows that women are involved in all types of farm and ranch work. Researchers have identified different types of roles that women do on farms and ranches that contribute to the success of the operations, including being agricultural producers, farm managers, agricultural partners (i.e., equals), agricultural helpers (i.e., not equals), homemakers, and financial supporters (Adams 1991; Bokemeier and Garkovich 1987; Brasier et al. 2014; Garkovich, Bokemeier, and Foote 1995; Haugen 1998; Jones and Rosenfeld 1981; Kim and Zepeda 2004; Pearson 1979; Rosenfeld 1986; Sachs 1983, 1988; Scott 1996; Simpson, Wilson, and Young 1988). These roles comprise a variety of specific work tasks, including field work with machinery and caring for livestock.

Farm women do appear to be taking a more direct and equal role within the farming enterprise. More women are entering farms and acting as principal farm operators (Hoppe and Korb 2013). They are sharing in decision making and farm management tasks; women’s work on- and off-farm is recognized by some farm men (Beach 2013; Galiè, Jiggins, and Struik 2013; Pilgeram and Amos 2015), and there has been an increase in women identifying as the primary operator (Brasier et al. 2014). Women can and often do fulfill multiple types of roles on the family farm (Beach 2013; Brandth 2002; Brasier et al. 2014) and, importantly to our study, these roles are across different domains and differently associated with the performance of femininity and masculinity.

When women perform tasks outside of “the farmer’s wife” role, there is some evidence to suggest that they are perceived as more masculine and can also face barriers. For example, Brandth (2006) reported that many of the women in her study were made uncomfortable by the projection of presumably male qualities of the machinery they operated onto themselves (e.g., the expectation that driving a big, heavy, hard machine means you are big, heavy, and hard in social relations as well and the expectation that you have emotional toughness). Similarly, Haugen (1998) found that women who operated machinery were met with skepticism, both about the quality of their work and about the appropriateness of their participation in it. Other work illustrates that women who farm can face barriers such as men withholding information and resisting recognizing women whom they view as deviating from traditional femininity (Keller 2014; Pilgeram 2007; Trauger et al. 2008).

Prior work has shown that women utilize a number of strategies to address potential challenges to enacting traditional femininity while doing masculine tasks (Pini 2005; Schmalzbauer 2011; Shortall 2006). These strategies include downplaying the importance of their labor, conceptualizing their role as being a “helper,” or rationalizing their tasks as being “support” (Garkovich et al. 1995; Herron and Skinner 2012; Naples 1994; Sachs 1996). Farm women who take on roles associated with finances or farm management often deemphasize the status and importance of the role, and recast it within farming couples as housework or office work (Brandth and Haugen 2010). Additionally, earlier work showed that even women who independently run their own farm operations can be hesitant to apply the term “farmer” to themselves because this term is associated with men and masculinity (Bokemeier and Garkovich 1987; Haugen 1998; Sachs 1983). Yet questions remain as to whether this association still holds given the increasing number of women involved in farming. More recent research indicates that some women are successfully reimagining the relationship between masculinity and farming (Carter 2017; Keller 2014; Trauger 2004; Trauger et al. 2008) or may do so in certain contexts (Pilgeram 2007).

In sum, given recent changes in women’s involvement in farm and ranch tasks and the historic connection of farming with masculinity, there is a need to better understand how women’s farm involvement impacts their gender identity. In this article, we analyze survey data to

examine the association between women's involvement in their farms and ranches and their sense of femininity and masculinity.

Hypotheses

We start by examining the association between women's overall involvement level in their operations and their gender identity. We predict that:

H1: Farm women's greater involvement in overall farm or ranch tasks will be associated with more masculine gender self-perceptions.

Next, we sort the farm and ranch tasks into manual and nonmanual categories and examine the association of these with gender self-perception. Here we hypothesize that:

H2: Farm women's greater involvement in manual labor will be associated with more masculine gender self-perceptions while nonmanual labor could be associated with either masculine or feminine self-perceptions.

We also group types of women's involvement into the categories of cattle, horses, field work, and financial tasks² and examine the association of involvement in each of these types of work with gender self-perception. Based on prior research, we predict that:

H3: Women's greater involvement in livestock and horse-type tasks will be associated with rating themselves as more feminine (Adams 1993) and

H4: Women's greater involvement in field work tasks will be associated with reporting a more masculine self-perception (Adams 1993; Brandth 2006).

For involvement in financial tasks we have the following competing hypotheses:

2. Operationalization of these types of work is explained in the "Data and Methods" section and Table 1.

H5a: Women's greater involvement in financial tasks will be associated with reporting a more masculine self-perception, as managing finances is typically seen as a masculine task, or

H5b: Greater involvement in financial tasks will be associated with a more feminine self-perception in this farming social context as bookkeeping is often characterized as a "helping" role done by women in assistance of the family farming enterprise, outside of daily farm labor.

Finally we examine the association between women's self-identified primary role on the farm or ranch and their gender self-perception. We predict that:

H6: Those who identify their main role as being involved with managing or being heavily involved in running the daily operation (e.g., agricultural producer, equal agricultural partner) will rate themselves as more masculine than their counterparts who do not identify their role as primarily involved in daily operations (e.g., homemakers, helpers, off-farm employed).

Data and Methods

Data

This study utilizes cross-sectional data collected from a mail survey sent to women on wheat and cattle operations across the state of Washington in 2006, a project titled "Family Farming and Ranching in Washington: A Woman's Perspective." The 12-page booklet survey contained 52 questions based on early interviews and adaptation of the instruments of others who have surveyed women in agriculture. Topics included how long one has been on the farm or ranch, description of the operation, work roles, off-farm employment, gender identity, satisfaction with farming or ranching, physical and mental health, and demographics.

The statewide sample was obtained using systematic random sampling (sorted by county) from the Washington State field office of the USDA National Agricultural Statistics Service list of farms and ranches in Washington State. Since the goal was to sample wheat and cattle

family operations where the farm or ranch was central to the family's life, several stipulations were placed on the sampling frame and sample. To be included in the sampling frame, operations had to have at least \$1,000 of farm sales and be coded as primarily either a grain farm with land devoted to wheat production or a cattle and calves operation with cattle but less than five head of milk cows. Washington State University educational farms, Indian reservations, Washington Department of Fish and Wildlife operations, and cooperative agreements were excluded from the sampling frame.³ Incorporated operations with 10 or more stockholders and those in which the principal occupation was coded as other than farming or ranching were also eliminated from the sample frame in an additional effort to focus on primarily family farming operations.

The survey was mailed to 1,475 total (743 cattle and 732 wheat) operations in Washington State. In implementing the survey, researchers applied a number of principles from the tailored design method (Dillman 2000) including using blue ball-point-pen hand signatures on all letters, a two dollar token incentive in the first mailing, the provision of self-addressed postage-paid return envelopes, and three mailings specifically timed for effectiveness. The data collection period ran from October 3, 2006, to December 31, 2006. A total of 491 women returned the survey for a response rate of 33 percent. Twenty-one completed surveys were deemed ineligible (e.g., the women had recently sold the farm, but completed the survey anyway as if they were still farming), reducing the eligible completed surveys to 470.

Measures

Dependent variable. Our dependent variable is a measure of self-perceived masculinity and femininity. Respondents were provided with a visual analog scale (Cella and Perry 1986) made up of a horizontal

3. Indian reservations were excluded from the sample due to (1) concerns about the sensitivity of Native Americans to research participation stemming from a history of researcher exploitation of this population (see Whitbeck 2006) and (2) resource limits that did not allow for necessary relationship building required to conduct high-quality and ethical research among Native American populations or for large enough sample sizes to account for cultural differences in the way gender operates among this varied population (see Cameron 2005). While our research could not examine gender in farming among Native Americans, future research should.

line with the left end labeled “Completely Feminine” and the right end labeled “Completely Masculine” and asked to mark on the line where they thought they landed between these two end-points. Although gender scholars note that it is problematic to conceptualize masculinity and femininity in opposition to one another (Schippers 2007), this scale is a first step in answering researchers’ calls to incorporate a quantitative measurement of gender into survey instruments (Westbrook and Saperstein 2015). A woman’s gender self-perception is measured as the number of millimeters from the completely feminine end-point of the scale to where she placed her mark.⁴ This variable can range from 0 to 152 millimeters with higher values representing women feeling more masculine and lower values representing women feeling more feminine. The gender self-perception scale allows us to determine how farm and ranch roles and involvement are related to women’s overall assessment of their gender. On average, women placed themselves 44.85 millimeters or about 30 percent of the way from the completely feminine end-point of the gender self-perception scale.

Independent variables. Our first independent variable is a measure of women’s overall involvement on the farm or ranch. This measure is generated from a question asking if the women regularly, occasionally, or never do tasks related to types of farm or ranch work (18 items) and other family business or care work (2 items) (see **Table 1**). A “does not apply” option was also provided for those from operations where a specific type of work was not done by anyone. We calculated the overall farm and ranch involvement measure by assigning a value of 0 to “does not apply,” 1 to “never,” 2 to “occasionally,” and 3 to “regularly” to the 18 farm and ranch items and then averaging the women’s scores across these items (Cronbach’s $\alpha = 0.88$). Including the “does not apply option” in this way avoided the situation where a woman who is regularly involved in only one or two tasks would be scored similarly to a woman regularly involved in all the tasks. Calculating the index without the “does not apply” option does not significantly alter the results. Women average 1.56 out of 3 on the overall involvement scale.

4. Respondents were not told that their gender identity would be measured as millimeters from the end-point, but qualitative interviews indicated they understood distance between scale points to reflect differences in gender identity.

Table 1. Women's Work

<i>Task items</i>	<i>Overall Involvement Index Items</i>	<i>Manual or Nonmanual Index Items</i>	<i>Specific Tasks Index Items</i>
Plowing, disking, planting, or harvesting	x	Manual	Field work
Applying fertilizers, herbicides, or insecticides	x	Manual	Field work
Driving large trucks	x	Manual	Field work
Doing field work without machinery	x	Manual	Field work
Caring for horses	x	Manual	Horses
Doing farm/ranch work with horses	x	Manual	Horses
Checking cattle	x	Manual	Livestock
Calving/pulling calves	x	Manual	Livestock
Feeding cattle	x	Manual	Livestock
Vaccinating cattle	x	Manual	Livestock
Branding, dehorning, or castrating cattle	x	Manual	Livestock
Running farm/ranch errands		Nonmanual	
Fixing or maintaining equipment	x	Manual	
Making major equipment purchases	x	Nonmanual	Financial
Marketing products	x	Nonmanual	Financial
Bookkeeping, records, finances, or taxes	x	Nonmanual	Financial
Supervising the farm/ranch work of others	x	Nonmanual	
Caring for garden or animals for family use	x	Manual	
Caring for children or elderly family members		Nonmanual	
Working on another family in home business		Nonmanual	

Our second independent variable captures the distinction between manual, physical labor and other types of nonmanual labor using all 20 of the items shown in **Table 1**. Manual labor tasks include the tasks related to field work, livestock, and horse tasks in addition to fixing equipment and caring for a garden or animals for family use. Nonmanual labor tasks include financial tasks as well as running errands, supervising the farmwork of others, caring for other family members, and working on another family or in-home business. The average for the nonmanual labor index is 1.79 out of 3 (Cronbach's $\alpha = 0.68$) while the average for the manual labor scale is 1.43 out of 3 (Cronbach's $\alpha = 0.87$).

For our third set of independent variables we categorize some of the tasks into four more specific indexes. A factor analysis indicated that 14 of the 20 tasks load heavily on four underlying factors. Based on these results, we formed four indexes ranging from 0 to 3 by averaging women's involvement level across index items. The first of these

is a cattle index made up of the following tasks: checking cattle; calving and pulling calves; feeding cattle; vaccinating cattle; branding, dehorning, or castrating cattle ($\alpha = 0.96$). The second index reflects involvement with horses and contains two items, caring for horses and doing farm or ranch work with horses ($\alpha = 0.82$). The third, a field work index, contains the following four items: plowing, disking, planting, or harvesting; applying fertilizers, herbicides, or insecticides; driving large trucks; and doing field work without machinery ($\alpha = 0.70$). The final index reflects involvement in financial matters and contains three items: making major equipment purchases; marketing products; and bookkeeping or handling records, finances, or taxes ($\alpha = 0.69$). Women average 1.41 out of 3 in both the field work and livestock scales, 1.06 in the horses scale, and 1.86 in the financial tasks involvement scale.

Finally, survey respondents were asked to report their primary role on the farm or ranch from a list of six possible roles. These included:

- Independent agricultural producer—I manage the farm or ranch pretty much single-handedly.
- Full agricultural partner—I share equally in all aspects of work and decision making.
- Business manager—I do bookkeeping, information gathering, and financial records.
- Agricultural helper—I participate in agricultural production mainly during busy times.
- Farm or ranch homemaker—I run errands and do traditional homemaking chores.
- Farm or ranch financial supporter—I provide support through off-farm employment.

Based on their answers, we created a set of six dichotomous variables, one for each role. The variable was coded 1 if the woman listed the role as her primary role and 0 otherwise. Six percent of women consider their primary role in the operation to be an independent agricultural producer, while 16 percent report full agricultural partner and 20 percent report business manager as their primary role. Seven percent are agricultural helpers, while 27 percent and 18 percent report their main role as homemaker and financial supporter respectively.

Control variables. We control for additional variables in order to focus on our hypotheses concerning on-farm tasks and gender

self-perception. Control variables are age, education, income, presence of children, and employment status. Age is measured by subtracting the respondent's birth year from the interview year. We constructed the education variable from a question with eight categories: eighth grade or less, ninth through eleventh grades, high school or equivalent, some college (no degree), vocational or technical school graduate, associates degree, college graduate, and postgraduate training. We recoded responses into three dichotomous variables: high school or less, some college or two-year degree, and four-year degree or more. Twenty-two percent of women hold a high school diploma or less, 46 percent have some college experience or a two-year degree, and 32 percent have a four-year degree or more. Income represents total net family income from all sources before taxes and was measured using six categories that increased in increments of \$20,000 each (less than \$19,999, \$20,000 to \$39,999, \$40,000 to \$59,999, \$60,000 to \$79,999, \$80,000 to \$99,999, and \$100,000 or more). We recoded responses to the income question into three dichotomous variables: \$39,999 and below, \$40,000 to \$79,999, and \$80,000 or more. Forty-five percent report the lowest income category, while 35 percent and 20 percent report the middle and highest income categories respectively. "Has children" is a dummy variable indicating whether the respondent had any children, and 89 percent reported having children. Finally, employment status is measured by four dichotomous variables marking those who are currently employed in an occupation made up predominantly of women (>50 percent female), those employed in an occupation that is predominantly male in makeup (>50 percent male), those for whom the sex composition of the job could not be ascertained, and those who are not currently employed off-farm, resulting in the creation of "majority female job" (comprising 35 percent of women in this sample), "majority male job" (9 percent), "unknown sex ratio" (5 percent), and "not employed off-farm" (51 percent) respectively. To create these employment variables, we first coded the jobs that respondents reported in an open-ended question using the standard occupational classification system (USBLS 2000). We then used these codes to determine the sex composition of the job across the United States.

Analysis

We ran a series of ordinary least squares (OLS) regressions to assess the association between women's farm or ranch involvement and

their gender self-perceptions. Through four sets of analyses we regressed women's gender self-perceptions on their overall involvement level; involvement level with manual and nonmanual tasks; involvement level with cattle, horses, field work, and finances; and involvement level with their primary role identification. For all of these analyses we accounted for missing data on the analytic variables using the multiple imputation by chained equations procedure via the "ice" command in Stata (Royston and White 2011). This resulted in 20 imputed data sets, following White, Royston, and Wood's recommendation (2011) that M (the number of imputed data sets) should at least be equal to the percentage of incomplete cases in the data set. We then pooled the results for interpretation (Allison 2001).

Results

Overall Involvement

Model 1 of **Table 2** shows the association between women's gender self-perception and their overall involvement in their farm or ranch. The results indicate that as women become increasingly involved in their operations, they perceive themselves as less feminine and more masculine. For each additional unit of overall involvement from 0 (does not apply, task not done on farm or ranch) to 3 (task done regularly by respondent), women moved themselves over nine millimeters closer to the "completely masculine" end of the gender self-perception scale.

Manual and Nonmanual Labor

Models 2–4 in Table 2 examine the association between manual and nonmanual labor and gender self-perception. Models 2 and 3 indicate that the more involved a woman is in either manual or nonmanual type tasks, the more masculine she perceives herself. However, when both manual and nonmanual tasks are included in the model together, only the association between manual tasks and gender self-perception remains significant. For each unit increase in involvement in manual tasks, women moved themselves just over eight millimeters closer to the masculine end of the scale.

Table 2. OLS Regression Models Predicting Gender Self-Perception by Farm Task Involvement.

	<i>Model 1 b (SE)</i>	<i>Model 2 b (SE)</i>	<i>Model 3 b (SE)</i>	<i>Model 4 b (SE)</i>	<i>Model 5 b (SE)</i>	<i>Model 6 b (SE)</i>	<i>Model 7 b (SE)</i>	<i>Model 8 b (SE)</i>	<i>Model 9 b (SE)</i>
Overall involvement	9.73*** (2.38)								
Manual labor		8.63*** (2.02)		8.36*** (2.45)					
Nonmanual labor			6.04* (2.46)	0.54 (2.94)					
Livestock tasks					3.62** (1.22)				0.52 (1.42)
Horse tasks						5.36*** (1.23)			4.02** (1.41)
Field work tasks							6.16** (2.23)		1.97 (2.43)
Financial tasks								6.78*** (2.04)	4.15 (2.28)
Age	-0.39** (0.12)	-0.40*** (0.12)	-0.38*** (0.12)	-.40*** (0.12)	-.44*** (0.12)	-.39*** (0.12)	-0.39*** (0.12)	-0.41*** (0.12)	-.38*** (0.12)
Education									
High school or less (ref.)									
Some college	0.69 (3.48)	0.94 (3.48)	0.82 (3.51)	0.88 (3.47)	1.30 (3.51)	1.31 (3.48)	1.16 (3.51)	0.54 (3.50)	0.46 (3.47)
BA+	-2.33 (3.92)	-1.82 (3.92)	-.70 (3.94)	-.90 (3.91)	-1.15 (3.96)	-.95 (3.93)	-.26 (3.95)	-2.20 (3.92)	-3.04 (3.92)
Income									
≤ \$39,999 (ref.)									
\$40,000 to \$79,999	-6.32* (3.08)	-6.52* (3.07)	-6.55* (3.12)	-6.48* (3.09)	-7.32* (3.10)	-6.80* (3.09)	-5.75 (3.16)	-5.93 (3.11)	-5.78 (3.15)
≥ \$80,000	-1.79 (3.85)	-1.84 (3.86)	-1.83 (3.86)	-1.83 (3.86)	-2.76 (3.89)	-2.68 (3.86)	-1.56 (3.95)	-2.38 (3.82)	-2.03 (3.87)
Off-farm employment									
Not employed (ref.)									
Majority female	-5.27 (2.90)	-5.38* (2.90)	-6.16* (2.92)	-5.34 (2.90)	-6.11* (2.93)	-5.89* (2.89)	-6.40* (2.91)	-6.12* (2.90)	-5.19 (2.88)
Majority male	3.40 (4.54)	3.18 (4.54)	2.70 (4.61)	3.24 (4.55)	2.22 (4.59)	2.21 (4.54)	2.97 (4.58)	2.74 (4.56)	3.34 (4.50)
Unknown sex ratio	-0.30 (8.71)	-0.63 (8.73)	-1.22 (8.70)	-0.56 (8.68)	-1.86 (8.79)	-2.50 (8.72)	-0.34 (8.79)	-1.28 (8.69)	-0.81 (8.70)
Has children	-8.07 (5.36)	-7.08 (5.39)	-9.81 (5.36)	-7.23 (5.43)	-7.54 (5.40)	-7.14 (5.35)	-8.59 (5.38)	-9.20 (5.35)	-7.53 (5.36)
Constant	62.99*** (10.41)	65.79*** (10.02)	69.23*** (10.72)	65.15*** (10.73)	75.74*** (9.41)	72.43*** (9.35)	70.29*** (10.32)	68.50*** (10.09)	62.08*** (10.51)
R ²	0.12	0.12	0.10	0.12	0.10	0.10	0.10	0.11	0.13

N = 470

* p < .05 ; ** p < .01 ; *** p < .001 (two-tailed tests)

Specific Tasks: Cattle, Horses, Field Work, and Financial

Models 5 through 9 in Table 2 examine involvement with more nuance by examining the association between four separate task types (cattle, horse, field work, and financial) and gender self-perception. When the association of each task type with gender self-perception is modeled independently, each is associated with women reporting a more masculine self-perception. In models 5 and 6, increased involvement in both cattle and horse tasks is associated with rating oneself 3.6 and 5.4 millimeters closer to the masculine end of the gender self-perception scale respectively. In models 7 and 8 each point increase in the field work task index and financial task index results in marking oneself 6 and almost 7 millimeters closer to the masculine end-point of the scale. However, in model 9, when all the tasks are included together, only involvement with horse tasks remains significant, resulting in respondents shifting their gender self-perceptions about four millimeters closer to the masculine end of the scale for each unit increase in involvement in horse tasks. Both involvement with livestock and field work were associated with significant shifts toward the masculine end of the scale when the other involvement variables were not included in the models; however, including involvement with horses and financial aspects of the operation mediates these effects. For involvement with livestock this mediating effect is likely due to the fact that most, but not all, farm or ranch work done with horses also involves moving or sorting cattle.

The variables contained in models 1 through 9 explained between 10 and 13 percent of the total variance in reported gender self-perceptions. Across these models, about half of the explained variance can be contributed to the key independent variables with the other half due to the control variables (analyses not shown).

Primary Farm or Ranch Role

Table 3 presents OLS regression models that assess the relationship between primary farm or ranch role and gender self-perception, controlling for age, education, income, off-farm employment, and having children. Overall, compared to women who identify homemaker as their primary role in the operation, both those identifying as independent agricultural producers and full agricultural partners rate

Table 3. OLS Regression Models Predicting Gender Self-Perception by Primary Farm Role.

	<i>b</i>	<i>SE</i>
Independent agricultural producer ^a	12.80*	6.34
Full agricultural partner ^a	10.92**	4.07
Business manager ^a	6.98	3.68
Agricultural helper ^a	5.48	5.32
Farm or ranch financial supporter ^a	4.96	4.29
Age	-0.42***	0.12
Education		
High school or less (ref.)		
Some college	1.04	3.55
BA+	-1.96	4.02
Income		
≤ \$39,999 (ref.)		
\$40,000 to \$79,999	-6.39*	3.12
≥ \$80,000	-3.12	3.91
Off-farm employment		
Not employed (ref.)		
Majority female	-6.30	3.13
Majority male	2.19	4.66
Unknown sex ratio	-3.23	8.78
Has children	-8.65	5.33
Constant	76.05***	9.37
<i>R</i> ²	0.10	

N = 470

* *p* < .05 ; ** *p* < .01 ; *** *p* < .001 (two-tailed tests)

a. Comparison group is homemaker.

themselves as significantly more masculine, marking themselves almost 13 and 11 millimeters closer to the masculine end of the scale respectively. Those who identified as business managers, agricultural helpers, and farm or ranch financial supporters did not differ in their gender self-perceptions from those who identified as homemakers. In additional analyses (not shown, available upon request), the reference group was changed to each possible role. These analyses did not reveal any additional significant differences in gender self-perceptions between any of the other roles. About one-third of the explained variance in gender self-perceptions in this model is attributable to the indicators for primary farm role with the remaining attributable to control variables (analyses not shown).

Discussion and Conclusion

In this article, we posed the question of whether women's involvement in different types of farm or ranch tasks is associated with their own perceptions of their gender. To answer our research question, we utilize a unique data set that includes a gender measurement that asks participants to rate themselves on a masculinity or femininity scale. The scale allows for the examination of the relationship between farm and ranch women's agricultural involvement and their perceptions of their own gender in a way that has not been possible with any other data of which we are aware. We find that women's involvement in farms and ranches is related to their gender self-perception, with more involvement being associated with a more masculine self-perception, especially for involvement in manual labor jobs and jobs that involve horses. Women who view their primary role as independent agricultural producers or full partners also perceive themselves as more masculine than women who view their primary role as homemaker.

Our results have several potential implications. First, our findings that women's involvement in farming and ranching tasks is associated with feeling more masculine suggest that this kind of farming and ranching remained a largely masculine domain through 2006 when our data were collected and that increases in women's involvement levels may be linked to women's increasing willingness to engage in masculine tasks and have a more masculine gender self-perception. This conclusion is consistent with ethnographic work conducted around the same time and since showing the continued connection between farm or ranch work and masculinity (Carter 2017; Keller 2014; Pilgeram 2007; Pilgeram and Amos 2015). Taken together, the current study and related literature suggest that women seem to be adapting and changing; the institution of farming and ranching does not.

A second implication is that women working on family farms and ranches may face extra or different strains than women in more feminine occupations. For example, farm women likely have to perform a feminine apologetic (i.e., take explicit, deliberate, and obvious actions to emphasize their femininity—Felshin 1974) just as women in athletics often do to reinforce that they are adequately feminine and by extension heterosexual (Ezzell 2009; Halbert 1997; Hardy 2015; Wughalter 1978). However many of the ways that women can perform femininity (i.e., do gender—West and Zimmerman 1987) are not

practical or even safe in a farm or ranch context. Long hair is dangerous around mechanical equipment (e.g., power take off or PTO shafts and augers) and high heels are not practical on uneven terrain. Additionally, feminine clothing is generally not made to withstand the wear and tear of farm or ranch work. Thus, even performing a feminine apologetic carries extra challenges in farm or ranch contexts.

A third implication of our findings is that to the extent that farming and ranching and especially the manual labor involved in it remains seen as masculine, the occupation may be off limits or off-putting to women (and men) who do not see themselves as masculine or who are heavily invested in a feminine gender self-perception. A possible outcome of being involved with farming and ranching for these people will be distress as the behaviors required in farming and ranching conflict with their gender identity (Stets and Burke 1996). In addition, the mismatch between those with feminine self-perceptions and the masculinity of farming and ranching may negatively impact partnerships and relationships in farming and ranching families. It is common on farms and ranches to need “all hands on deck” during certain peak labor times (e.g., getting the grain harvested before it rains or assisting a cow that is having difficulty birthing a calf) and there is almost always more work to be done (i.e., the work is never done), yet the demands for additional labor might be met with hesitation, pushback, or distress among those heavily invested in feminine self-perceptions. Persistent tension between the survival and livelihood of the farm or ranch and one’s own sense of self is likely to cause personal and interpersonal distress. Importantly, men may also actively resist women engaging in work they perceive to be more masculine (Pilgeram 2007).

Our findings raise a number of additional questions for future research. First, research should examine the implications of increased perceptions of masculinity for farm women, looking at whether they perceive gender policing from others, experience a conflict between society’s dictates about gender and the farm or ranch work they do, feel the need to perform a gender apologetic, use specific strategies to do so, or experience a double bind, and also whether women’s experiences with gender and farmwork and how they respond differ by sexual orientation (Kazyak 2012). Research should also examine the impact of these factors on women’s physical and mental health as well as their relationships with others, especially their spouses and partners.

Second, while the association between women's involvement and gender self-perception is significant, the *R*-square values in our models were quite low, ranging from 0.10 to 0.13 with about half attributable to the key independent variables and half to control variables. This indicates, as one would expect, that in addition to farm or ranch involvement and our control variables, other unmeasured factors also impact women's gender self-perception, and that farm or ranch involvement only accounts for a small portion of the variation in gender self-perception. Future research should develop theoretical frameworks to identify additional factors associated with gender self-perception and examine whether the association between involvement and gender self-perception found here is mediated or moderated by these additional factors. Qualitative research might also yield richer insights into additional factors that might explain the unexplained variance in women's gender self-perception and how farm and ranch women formulate gender identities vis-à-vis the farm or ranch. For example, with our cross-sectional data we cannot ascertain (1) whether those who perceive themselves as more masculine select into certain farm or ranch tasks, (2) whether having to do the tasks changes self-perception, or (3) whether both of these forces are at work.

Third, we examined women's involvement with specific tasks somewhat in isolation. Future research should examine how women's simultaneous involvement in multiple types of work impacts their gender self-perception. Scholars might develop typologies of involvement in both on- and off-farm work that account for the multiple roles that women fulfill and examine how those are related to gender self-perception. Research should also examine whether involvement in sustainable agriculture, where the meanings of gender may differ (Leslie 2017; Sachs et al. 2016; Trauger 2004), yields similar results.

Fourth, our measure of gender self-perception presented masculinity and femininity on a single continuum. Future research should examine how involvement in farm or ranch work impacts perceptions of femininity and masculinity independently of each other as suggested by the work of Magliozzi, Saperstein, and Westbrook (2016). Such work should also examine how farm women interpret the gender scale used, particularly how women make decisions about where to place themselves in terms of to whom they are comparing their own gender. Do they see themselves as more masculine compared to societal

ideals of femininity (i.e., compared to some abstract ideal of “woman”) or do they see themselves as more masculine compared to other farm or ranch women (i.e., their peers)? In a related vein, researchers can address the meanings of femininity and masculinity and whether alternative types of femininity exist in rural contexts.

Agriculture has long been associated with masculinity, despite women’s involvement. This is the first study to illustrate the association between that involvement and women’s own gender self-perceptions, and it raises a host of new questions about how and why women get into and stay in (or leave) agriculture and how their involvement impacts themselves and their families.

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