Kinship Structure & Women: Evidence from Economics

Sara Lowes

Economists are increasingly interested in understanding how culture shapes outcomes for women and the origins of these cultural practices. I review recent work in economics on how culture affects the well-being of women in developing countries, much of which is motivated by work in anthropology. I present evidence on the role of kinship structure, particularly matrilineal relative to patrilineal systems, for shaping women's preferences, exposure to domestic violence, and the health and education of children. Additionally, I discuss research on the effects of cultural practices, such as bride-price, and how the organization of production affects gender norms. Economists, with a careful focus on causal identification, contribute to the evidence that culture is an important determinant of outcomes for women.

There has been growing interest in economics in how variation in cultural practices may explain variation in outcomes for women. Economists have often focused on more standard economic variables, such as policies that target women's labor force participation and educational attainment, access to technologies such as birth control, or divorce laws to explain gender disparities. Yet even in similar institutional contexts or at similar levels of development, women experience remarkable variation in their well-being.[1] Culture may be an important factor to explain this variation.[2]

Defining culture and institutions and delineating the distinction between them can be fraught. Institutions are frequently defined as external "rules" that shape individuals' expected payoffs for different actions. Culture is often defined as the collection of beliefs and internal views for individuals. These beliefs may be transmitted across generations or through peer socialization.[3] While I focus on various cultural practices and refer to this as the effect of culture, these practices may also fall under the realm of institutions in the sense that the practices themselves shape the payoffs associated with different behavior.

This essay reviews the recent work in economics on culture and the well-being of women in the context of developing countries, focusing on the role of kinship systems. In particular, I review work on how the structure of kinship systems, cul-

https://doi.org/10.1162/DAED_a_01777

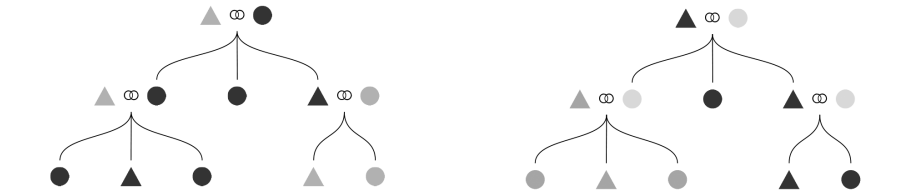
tural practices such as the payment of bride-price and dowry, and the organization of production may affect outcomes for women and children.

Kinship systems are an important social structure in many societies. They determine who is considered a group member and what obligations an individual has to other group members.[4] There are various ways of organizing kinship groups. One key distinction is between matrilineal and patrilineal kinship systems, both of which are examples of *unilineal* descent systems. In a unilineal descent system, lineage and inheritance are traced through one of the two parents. Many Western societies practice *cognatic* descent, in which kinship ties are traced through both parents so that an individual considers people related through their mother and through their father to be kin. In *matrilineal* descent systems, lineage and inheritance are traced through female group members, while in *patrilineal* descent systems, lineage and inheritance are traced through male group members.[5]

Figure 1 illustrates the two different kinship structures. Men are represented as triangles and women as circles. Figure 1a presents a matrilineal kinship system, in which individuals related through a common female relative are denoted in black. Note that husbands and wives have different kinship affiliations and that children are in the same kin group as their mother. In matrilineal systems, uncles play an important role, since a child often inherits from his mother's brother. Figure 1b presents a patrilineal kinship system, with members of the same patrilineal kin group denoted in black. When a woman marries, she is effectively subsumed into the kin group of her husband; this is denoted by the daughter who is married and is now a light rather than black circle.

A key hypothesis in the work on kinship systems is that the structure of matrilineal kinship systems relative to patrilineal kinship systems has implications for the well-being of women. Kinship structure may affect outcomes for women for a variety of reasons. First, the practice of matrilineal kinship often corresponds with other cultural practices that may benefit women. Thus, the effects of matrilineal kinship may be more accurately interpreted as the effects of the broader set of cultural practices that tend to be bundled together. For example, of the eighty matrilineal societies in Africa in George Peter Murdock's *Ethnographic Atlas*,[6] 65 percent practice matrilocal residence, in which a married couple resides with the family of the wife, while less than 1 percent of patrilineal societies practice matrilocal residence. Similarly, matrilineal societies traditionally are less likely to have the custom of bride-price payments: a transfer from the groom's family to the bride's family upon marriage. Second, in some matrilineal societies, women directly inherit land, rather than just pass land down to men who share a common female relative. Proximity to family members through matrilocal residence and increased asset ownership through land inheritance may enable women to bet-

Figure 1
Diagram of Kinship Systems



Legend: ▲ = Males, ● = Females, ●/▲ = Same Matriliny

(a) Matrilineal Kinship

Legend: ▲ = Males, ● = Females, ●/▲ = Same Patriliny

(b) Patrilineal Kinship

ter implement their preferences. In the language of household bargaining models, land ownership and living close to relatives may increase women's bargaining power by improving their outside options.

The matrilineal bundle is not homogenous and varies greatly even within Sub-Saharan Africa. In his 1934 book *Kinship and Marriage*, anthropologist Robin Fox outlines three types of matrilineal kinship systems with different implications for women's empowerment.[7] The first type of matrilineal society emphasizes the mother-daughter-sister roles and has matrilocal residence. Women control the continuity of the matrilineage and resources, and therefore they tend to have relatively higher status. In the second type of matrilineal society, the emphasis is on the brother-sister-nephew roles. These societies often practice *avunculocal* residence, which is residence with the bride's uncle after marriage. In this case, political power is generally retained by men. This results in the relatively lower status of women. In the final type, all of these relationships are important. Thus, while men remain in control, the status of women is not as low as in the second type.

One approach to studying the effects of matrilineal kinship has been to document how preferences vary across matrilineal and patrilineal groups. Researchers have examined the effects of matrilineal kinship systems for women's preferences, including preference for competition, altruism, risk, and political participation.

It has been widely documented, particularly in Western cultural settings, that women prefer to compete less than men. If women prefer to compete less than men, this may have important implications for job market outcomes, promotions, and performance in school.[8] Given that willingness to compete affects key economic outcomes, it is necessary to explore how these differences in willingness to compete arise.

To highlight how preference for competition varies across cultural settings, recent scholarship has examined how kinship structure affects women's preference for competition. Much of this work was motivated by a paper by Uri Gneezy, Kenneth L. Leonard, and John A. List examining preference for competition in the patrilineal Masai society of Tanzania and the matrilineal and matriarchal Khasi society of India.[9] The authors evaluated preference for competition using a lab experiment in which individuals chose whether to compete. Broadly, the benefit of lab experiments is that one holds the payoffs associated with various actions – in other words, the rules of the game – constant. In the patrilineal society in Tanzania, the authors found the standard gender gap in preference for competition, in which women are significantly less likely to compete.[10] This is consistent with work from the United States and Europe.[11] However, in the matrilineal society in India, they found that the gap in preference for competition is closed: women were just as likely to compete as men. The authors demonstrate that women do not always prefer to compete less than men and provide evidence that culture may shape women's preference for competition. Their paper also focuses on a sample of non-Western individuals, which is important given that so-called WEIRD societies (Western, educated, industrialized, rich, and democratic), on which most research is based, may not be reflective of broader human psychology and behavior.[12]

Subsequent work has focused on the Khasi in India and a neighboring patrilineal group in India. Steffen Andersen and colleagues found that the gender gap in willingness to compete emerges after puberty.[13] The benefit of this research design is that both societies under study are located in India, thus limiting the extent to which other factors – such as institutional quality, geography, or history – vary. Related work by Jeffrey Flory and colleagues compares preference for competition among individuals from matrilocal villages and patrilocal villages in Malawi.[14] The results are consistent with the Gneezy paper, in which there is no gender gap in preference for competition among the matrilocal women.[15] Additionally, Flory and coauthors found that patrilocal women's preference for competition is sensitive to having children: that is, only post-adolescent women without children are less competitive than their male counterparts. Finally, Jane Zhang has examined how kinship structure interacts with institutional changes in China.[16] She found that institutions that encourage women's participation in the labor force reduce the gender gap in preference for competition for the patrilineal Han, while the gender gap in competition persists among a patrilineal ethnic minority group that was not subjected to these institutions. Her study suggests that institutions can shape culture.

In my paper "Kinship Structure, Stress, and the Gender Gap in Competition," I build on past work by examining preference for competition among individuals from the matrilineal belt in the Democratic Republic of Congo (DRC).[17] The

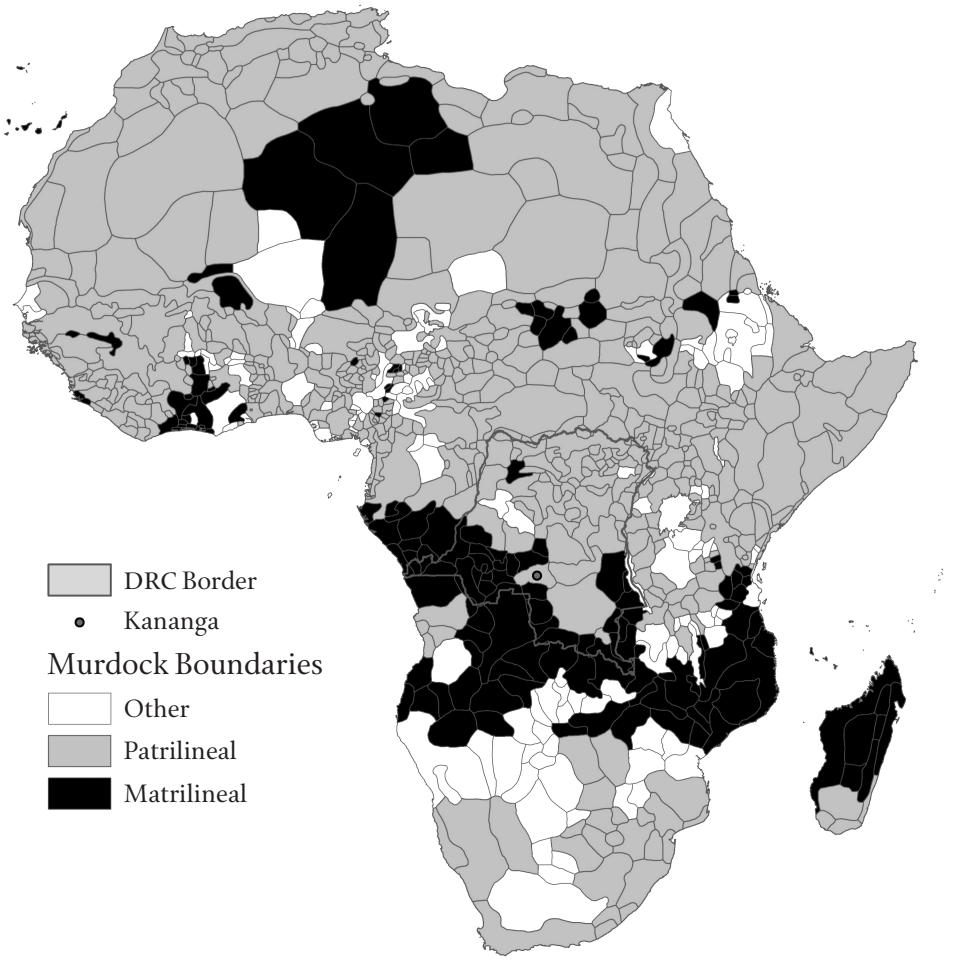
matrilineal belt describes the distribution of matrilineal ethnic groups in Central Africa. This is an ideal setting to study the effects of matrilineal kinship because there are many matrilineal and patrilineal ethnic groups located in a common setting. Additionally, Central Africa has the highest density of matrilineal kinship systems in the world.[18] Figure 2 shows a map of the matrilineal belt in Sub-Saharan Africa. The matrilineal groups in the study region primarily fall into the second group described by Fox, the type of matrilineal kinship in which women are less empowered relative to the two other types.[19]

I collected data from 614 individuals in Kananga, Democratic Republic of Congo, a major urban area along the matrilineal belt (see Figure 2 for the field site location, which is denoted with a shaded circle). To measure preference for competition, individuals completed a version of the standard competition lab experiment developed by Muriel Niederle and Lise Vesterlund.[20] Participants complete three rounds of a matching game on a touch screen tablet.[21] In the first round, they are paid under a piece-rate payment scheme, in which they receive 200 Congolese Francs (CDF) (approximately 20 cents USD) for every time they complete the matching game. In the second round, they are paid using a tournament scheme, in which they are randomly matched with another player and whoever has the highest performance (the most completed matching games) is paid 500 CDF for each time the task is completed, while the other player receives 0 CDF. Finally, in the third round, players are given a choice of compensation scheme, in which the choice of tournament compensation is interpreted as a preference for competition. For a subset of participants, I also collected physiological data during game play. Specifically, I measured electrodermal activity (EDA), the skin's ability to conduct electricity. Higher skin conductance levels (SCLs) are generally associated with higher levels of stress. Physiological data provide additional insight into how players experience competition.

I find several key results. First, in the setting of the DRC with multiple ethnic groups in a common geographic and institutional setting, I find no evidence that matrilineal kinship closes the gender gap in competition. Eighty percent of men and 60 percent of women choose to compete, with no differences across kinship systems. However, I do find that matrilineal kinship completely closes the gap in preference for risky gambles, as measured by a series of incentivized gambles in which one option is riskier than the other.[22] This is related to work by Binglin Gong and Chun-Lei Yang, who found a smaller gender gap in risk preference for the matrilineal Mosuo relative to the patriarchal Yi in China.[23]

Finally, I find that while matrilineal kinship does not explain preference for competition, changes in stress between the piece-rate round and the tournament round predict willingness to compete in the third round. Women who experienced more stress in the tournament round relative to the piece-rate round were less likely to choose to compete. Controlling for changes in SCL reduces the gender

Figure 2
Ethnic Group Boundaries and Matrilineal Belt



Source : Map created by author using GIS software and matching across the data sources. The underlying ethnic group boundary data come from George Peter Murdock, *Africa : Its Peoples and Their Culture History* (New York : McGraw-Hill, 1959). The information on kinship practice (coding of matrilineal or patrilineal) comes from George Peter Murdock, *Ethnographic Atlas* (Pittsburgh : University of Pittsburgh Press, 1967).

gap in preference competition by 25 percent. These results suggest that the physiological experience of competing affects women's willingness to compete, and that in this setting with many matrilineal and patrilineal groups, there is no evidence that matrilineal kinship affects preference for competition.

Subsequent work has examined how differences in kinship structure affect a variety of other preferences and outcomes. For example, in a 2011 paper, Mosche Hoffman, Uri Gneezy, and John A. List find no differences in spatial ability between men and women among the matrilineal Khasi in India, whereas they find that men performed better at a spatial task among the neighboring patrilineal Karbi.[24] In China, Gong, Yang, and Huibin Yan found that women in the Mosuo ethnic group are less generous relative to men, while there is no difference for the patriarchal Yi.[25]

Together, these papers suggest that kinship structure has implications for women's preferences, but that it may be important to have many ethnic groups represented in a sample and to hold constant the institutional and geographic setting.

In another paper set in the matrilineal belt, I examine how matrilineal kinship affects spousal cooperation and outcomes for women and children.[26] Mid-twentieth-century anthropologists focused on the "matrilineal puzzle": if matrilineal kinship systems undermine spousal cooperation, then, from an evolutionary perspective, why would they persevere? In other words, why would a system that jeopardized an integral unit of cooperation prevail over alternative kinship structures that produced more cooperation, such as patrilineal kinship?[27]

Anthropologists pointed to two structural features of matrilineal kinship systems that may affect spousal cooperation.[28] First, matrilineal kinship systems lead to split allegiances between spouses. Within a couple, each spouse maintains strong allegiances to their own kinship group, while in patrilineal systems, a wife is effectively incorporated into the broader kin group of her husband. Second, in matrilineal systems, men have less authority over their wives. Children are considered to belong to the kin group of the wife. Thus, if a husband mistreats his wife, it is relatively easier for her to return to her kin group. In particular, she may receive support from her brothers, whose inheritance passes to her children rather than to the brothers' own children. The structure of matrilineal kinship systems may have important implications for women and children if it affects the distribution of resources within the household and the support women receive from their broader kinship network. Note that the way anthropologists conceptualize spousal "cooperation" is not consistent with an understanding of cooperation free from coercion. In particular, the idea that men having less authority over their wife in matrilineal systems leads to less cooperation suggests that cooperation is better understood as coercion.

In "Matrilineal Kinship and Spousal Cooperation : Evidence from the Matrilineal Belt," I test whether matrilineal kinship systems undermine spousal cooperation using lab-in-the-field experiments and survey data.[29] I collected data from 320 couples from the matrilineal belt. Thus, all couples are from a geographically similar area, but some are from matrilineal ethnic groups and others from patrilineal ethnic groups. More than twenty-eight ethnic groups are represented in the sample.

To measure cooperation, individuals in the sample completed a public goods game with their spouse. The public goods game is meant to capture the daily coordination problem couples often face : for instance, there is a benefit to cooperating with a spouse but also incentives to free-ride off the efforts of a spouse. The public goods game was structured as follows. First, husbands and wives were interviewed separately by an enumerator of the same sex to ensure privacy and comfort. They were next given an endowment of 1000 CDF, or approximately 1 USD. They then rolled a die with three white sides and three black sides ; if they rolled a black, they received a "bonus" of 500 CDF in addition to the initial endowment. Significantly, the outcome of the die roll was private information, meaning that their spouse did not know their endowment size. The respondents were then given the opportunity to allocate their endowment across two envelopes : a personal envelope and a shared envelope. The respondent was told that contributions made to the shared envelope by both spouses would be combined, increased by 1.5, and then divided evenly between the husband and wife. After the allocation decisions were made privately in a tent concealed from the view of enumerators, both envelopes were collected by the enumerator. Payouts were calculated in the office, and individuals received the sum of money from their personal envelope and the amount earned in the shared envelope one week later. The respondents also completed the same game but with a stranger of the opposite sex.

The experimental results suggest that matrilineal individuals are less cooperative with their spouses. Both matrilineal men and women contributed less to the shared envelope. This was particularly the case when the respondent won the bonus, which was unobservable to the spouse. However, matrilineal individuals no longer behaved differentially when they won the bonus and were paired with a stranger of the opposite sex. Thus, their behavior was specific to being paired with a spouse. These results suggest that matrilineal kinship systems may indeed undermine spousal cooperation.

I also examine the implications of matrilineal kinship for the well-being of women and children by combining my own survey data with data from the Demographic and Health Surveys (DHS) for the DRC.[30] I first examine whether matrilineal women fare better than patrilineal women in terms of autonomy in decision-making and beliefs on whether domestic violence is justified. I find that in my own survey data, matrilineal women have views more consistent with female autonomy, are less likely to believe domestic violence is justified in a variety of situations, and

report being happier. In the DHS, matrilineal women report greater autonomy in decision-making, are less supportive of domestic violence, and, crucially, experience less domestic violence. This is notable given that in the DRC, half of all women sampled in the DHS reported having experienced some form of physical violence from a spouse.

I also examine outcomes for children. In both my sample and in the DHS, children of matrilineal women are healthier and better educated. Specifically, in my sample, children of matrilineal women are 8 percentage points less likely to have been sick in the last month and have 0.4 more years of education. In the DHS, matrilineal women have 0.12 fewer children who have died, relative to a mean of 0.6, and children of matrilineal women have 0.15 more years of education.[31]

The paper has several important implications. First, broader social structures shape dynamics within the household. Economists often just focus on the nuclear household, particularly in their models of household bargaining. These results suggest that understanding broader social structures such as kinship systems is key to understanding household outcomes. Second, the result that matrilineal individuals are less cooperative with their spouses suggests that kinship systems that empower women need not lead to more cooperative outcomes. Collective models of the household often predict that greater empowerment is synonymous with larger contributions to a public good, because ex-post a greater share of the benefits are captured by women. However, in a setting with the threat of domestic violence, what is observed as greater "cooperation" may actually be a response to coercion. Finally, the results shed light on the "matrilineal puzzle." Specifically, despite that matrilineal kinship systems undermine spousal cooperation, they seem to have important benefits for women and children.

A final strand of literature on matrilineal kinship examines how matrilineal relative to patrilineal kinship systems affect women's political engagement and preferences. For example, political scientists Amanda Lea Robinson and Jessica Gottlieb have used data from the Afrobarometer for Sub-Saharan Africa to examine the relationship between matrilineal kinship and women's political participation.[32] They found that within matrilineal ethnic groups, there is a smaller gender gap in various measures of women's participation and engagement in politics relative to men. The authors argue that matrilineal kinship improves outcomes for women through more progressive norms about the appropriate role of women in society. They find that the benefits of matrilineal systems are conferred in villages where there are a sufficient number of households practicing matrilineal kinship, and that there are no differential benefits of matrilineal kinship for women who have directly inherited land. The authors interpret this as evidence in favor of the role of norms for conferring the benefits of matrilineal kinship, rather than the role of resource endowments.

Related work by political scientists Rachel Brulé and Nikhar Gaikwad in India examines whether women's political participation and preferences on the size and scope of the welfare state differ in matrilineal relative to patrilineal societies.[33] The authors motivate the study by showing that there is a large gap in attitudes between men and women in participation and interest in politics, as well as the extent to which women believe social support is important. The authors find that in patrilineal societies, where men generally control wealth, men participate more than women in politics, are less supportive of the welfare state, and prefer lower levels of taxation. However, in the neighboring matrilineal societies where women have more control over wealth, the gender gap in political engagement and preferences over social policy closes.

Matrilineal kinship is a bundled treatment. In fact, it is historically associated with many other practices, such as the practice of matrilocal residence after marriage (living with the family of the bride) and dowry (money and goods transfers from the bride's family to the groom's family at the time of marriage).

Natalie Bau has examined the relationship between the practice of matrilocality and investment in the human capital of children.[34] Co-residence with adult children is a form of old-age insurance in many societies. Thus, parents may have additional incentive to invest in children if they expect these children to care for them in the future. In her paper, Bau uses data from Ghana and Indonesia, where there is variation in cultural practices. She finds that in Indonesia, there is greater investment in female siblings relative to male siblings in matrilocal groups. In Ghana, membership in a group that practices patrilocality is associated with greater investment in male siblings. She then examines responses to changes in formal policies that provide old-age insurance in the form of pension plans. These formal policies that provide insurance may change the incentives to invest in the children that formally provided old-age support for parents. Greater exposure to a pension program in Indonesia reduces the relative investment in daughters. Likewise, there is a decrease in the investment in the education of male children in patrilocal societies in Ghana. Bau's results provide evidence that cultural practices respond to the institutional and policy environment.

Historically, matrilineal groups were much less likely to pay bride-price. In fact, matrilineal groups were more likely to make transfers to the groom's family upon marriage. In one paper, a team of economists examines how groups that historically paid bride-price respond to increased educational opportunities for women.[35] Often, the size of the bride-price received by a woman's family is associated with her level of education.[36] Thus, groups that practice bride-price payments may have a greater incentive to invest in the education of their daughters. The authors take advantage of school-building programs in Indonesia and Zambia that

provide variation in access to schooling. They find that the school-building programs are more effective in improving outcomes for girls in places that practice bride-price. These results suggest that cultural practices may incentivize investment in education. However, Lucia Corno, Nicole Hildebrandt, and Alessandra Voena have elsewhere found that bride-price payments may be used to smooth consumption.[37] When families face income shocks, bride-price may incentivize them to have their daughters wed at a younger age.

A related literature in economics has examined how the organization of production has shaped the role of women in society and the beliefs about the appropriate role of women in society.

Alberto Alesina, Paola Giuliano, and Nathan Nunn, in "On the Origin of Gender Roles: Women and the Plough," examine how historical suitability for the plough shapes present-day female labor force participation.[38] The hypothesis is motivated by insights from Ester Boserup, who suggested that the historical use of the plough favored men's participation in agricultural production.[39] While both men and women can participate in hoe agriculture, the plough requires a lot of strength. Reliance on the plough thus led to differences in women's engagement in agriculture and to a sharper division of labor. To test this hypothesis, Alesina and coauthors used data from George Peter Murdock's *Ethnographic Atlas*, which has information on the use of the plough and on women's participation in agricultural tasks historically.[40] They find that in places with historical plough use, women participated less in agricultural activities (such as clearing land, soil preparation, and planting). Looking next at present-day data on labor force participation, they find that historical reliance on the plough is associated with lower labor force participation by women and with norms less compatible with women's participation in the labor force. These results suggest that how production is organized historically has shaped present-day beliefs about the appropriate role of women.

While there is limited work on the origins of matrilineal kinship, Ariel Ben-Yishay, Pauline Grosjean, and Joe Vecci have explored how reef density in the Solomon Islands predicts the practice of matrilineal kinship.[41] They found that matrilineal kinship is associated with greater reliance on fishing. One potential mechanism is that reliance on fishing leads men to specialize in fishing, while women focus on horticulture. In these conditions, there may be a relatively greater benefit to women owning land.

More recent work by Anke Becker examines how historical reliance on pastoralism has shaped norms meant to constrain women's sexuality.[42] Pastoralism, the breeding and care of herd animals such as sheep, goats, and cattle, was characterized by frequent and long-term periods of male absence. Becker hypothesizes that these absences increased the benefits of norms that constrain women's sexuality, such as female genital cutting (FGC). Combining data from thirty-four

countries on the historical practice of pastoralism with data from the DHS on the practice of FGC and views on domestic violence, Becker found that places that relied more on pastoralism were more likely to practice infibulation, the most invasive form of FGC; to restrict women's mobility; and to adhere to stricter norms on women's sexual behavior. Additionally, she found evidence of greater support for domestic violence when these norms are violated. This research provides evidence that the form of economic production shapes the cultural beliefs and practices that affect women.[43]

Large gaps persist in outcomes for women relative to men across domains from education, health, emotional well-being, and labor market outcomes. Moreover, these gaps are often larger in developing countries. There has been growing interest in understanding how variation in cultural practices affects the well-being of women and what shapes the origins of these particular cultural practices.

I have presented recent research on the role of matrilineal kinship systems in shaping the preferences of women and outcomes for women and children. In my own work, I have found evidence that matrilineal kinship reduces spousal cooperation, but that it increases investment in children and decreases domestic violence.[44] Additionally, other cultural practices such as the payment of bride-price and the practice of matrilocal residence upon marriage affect investments in children. The origins of these cultural practices are often deeply rooted and tightly tied to the modes of production, as is demonstrated by work on the plough and women's labor force participation, and pastoralism and norms restricting women's sexuality.

One of the comparative advantages of work in economics is careful quantitative empirical work and a focus on identifying the causal effects of a particular cultural practice. Drawing on insights from anthropology, history, and political science, economists have been able to contribute important evidence on how culture shapes outcomes for women.

ABOUT THE AUTHOR

Sara Lowes is a Postdoctoral Fellow at the Stanford King Center on Global Development, a CIFAR Azrieli Global Scholar, and a Research Associate of the Centre for Economic Policy Research. She has a Ph.D. in political economy and government from Harvard University. She will join the University of California, San Diego as an Assistant Professor of Economics in July 2020. She has recently published in journals such as *Proceedings of the National Academy of Sciences* and *Econometrica*.

ENDNOTES

[1] Seema Jayachandran, "The Roots of Gender Inequality in Developing Countries," *Annual Review of Economics* 7 (2015): 63–88.

[2] Raquel Fernández, "Does Culture Matter?" in *Handbook of Social Economics*, vol. 1A, ed. Matthew O. Jackson, Jess Benhabib, and Alberto Bisin (Amsterdam: Elsevier, 2011), chap. 11, 481–510; Raquel Fernández and Alessandra Fogli, "Culture: An Empirical Investigation of Beliefs, Work and Fertility," *American Economic Journal: Macroeconomics* 1 (1) (2010): 472–500; and Paola Giuliano, "Gender: An Historical Perspective," in *The Oxford Handbook of Women and the Economy*, ed. Susan L. Averett, Laura M. Argys, and Saul D. Hoffman (Oxford: Oxford University Press, 2017).

[3] Alberto Bisin and Thierry Verdier, "On the Joint Evolution of Culture and Institutions," NBER Working Paper No. 23375 (Cambridge, Mass.: National Bureau of Economic Research, 2017). For evidence on the importance of institutions for development more broadly, see Douglass North, *Institutions, Institutional Change and Economic Performance* (New York: Cambridge University Press, 1990); Daron Acemoglu, Simon Johnson, and James A. Robinson, "The Colonial Origins of Comparative Development: An Empirical Investigation," *American Economic Review* 91 (5) (2001): 1369–1401; and Daron Acemoglu and James A. Robinson, *Why Nations Fail: The Origins of Power, Prosperity, and Poverty* (New York: Crown Publishing Group, 2012). For evidence on the importance of culture for development, see Avner Greif, "Cultural Beliefs and the Organization of Society: A Historical and Theoretical Reflection on Collectivist and Individualist Societies," *Journal of Political Economy* 102 (5) (1994): 912–950; and Nathan Nunn and Leonard Wantchekon, "The Slave Trade and the Origins of Mistrust in Africa," *American Economic Review* 101 (7) (2011): 3221–3252.

[4] A. R. Radcliffe-Brown, "Introduction," in *African Systems of Kinship and Marriage*, ed. A. R. Radcliffe-Brown and Daryll Forde (Oxford: Oxford University Press, 1950).

[5] Robin Fox, *Kinship and Marriage: An Anthropological Perspective* (Cambridge: Cambridge University Press, 1934).

[6] George Peter Murdock, *Ethnographic Atlas* (Pittsburgh: University of Pittsburgh Press, 1967).

[7] Fox, *Kinship and Marriage*.

[8] Muriel Niederle and Lise Vesterlund, "Do Women Shy Away from Competition? Do Men Compete Too Much?" *Quarterly Journal of Economics* 122 (3) (2007): 1067–1101; and Muriel Niederle, "Gender," in *Handbook of Experimental Economics*, ed. John Kagel and Alvin E. Roth (Princeton, N.J.: Princeton University Press, 2016), 481–553.

[9] Uri Gneezy, Kenneth L. Leonard, and John A. List, "Gender Differences in Competition: Evidence from a Matrilineal and a Patriarchal Society," *Econometrica* 77 (5) (2009).

[10] Ibid.

[11] Muriel Niederle, "A Gender Agenda: A Progress Report on Competitiveness," *American Economic Review: Papers and Proceedings* 107 (5) (2017): 115–119.

[12] Joseph Henrich, Steven J. Heine, and Ara Norenzayan, "The Weirdest People in the World?" *Behavioral and Brain Sciences* 33 (2/3) (2010).

[13] Steffen Andersen, Seda Ertac, Uri Gneezy, et al., "Gender, Competitiveness, and Socialization at a Young Age: Evidence from a Matrilineal and a Patriarchal Society," *The Review of Economics and Statistics* 95 (4) (2013): 1438–1443.

[14] Jeffrey Flory, Kenneth L. Leonard, Magda Tsaneva, and Kathryn Vasilaky, "Changes in Competitiveness with Motherhood Stages and Culture : Evidence from Patrilocal and Matrilocal Society," working paper (2017).

[15] Gneezy et al., "Gender Differences in Competition."

[16] Jane Zhang, "Culture, Institutions, and the Gender Gap in Competitive Inclination : Evidence from the Communist Experiment in China," *Economic Journal* 129 (617) (2019).

[17] Sara Lowes, "Kinship Structure, Stress, and the Gender Gap in Competition," working paper (2018).

[18] Paola Giuliano and Nathan Nunn, "Ancestral Characteristics of Modern Populations," *Economic History of Developing Regions* 33 (1) (2018) : 1–17.

[19] Fox, *Kinship and Marriage*.

[20] Niederle and Vesterlund, "Do Women Shy Away from Competition ?"

[21] In this game, players are presented for a few seconds with a set of twelve cards with animal images on them. The twelve cards include six pairs of matching images.The goal of the game is to select and reveal the two matching cards. Once a pair of matching cards is revealed, the two cards disappear and the game continues until all matching pairs have been revealed. The participants complete the game as many times as possible in a five-minute period.

[22] Lowes, "Kinship Structure, Stress, and the Gender Gap in Competition."

[23] Binglin Gong and Chun-Lei Yang, "Gender Differences in Risk Attitudes : Field Experiments on the Matrilineal Mosuo and the Patriarchal Yi," *Journal of Economic Behavior and Organization* 83 (1) (2012) : 59–65.

[24] Mosche Hoffman, Uri Gneezy, and John A. List, "Nurture Affects Gender Differences in Spatial Abilities," *Proceedings of the National Academy of Sciences* 108 (36) (2011) : 14786–14788.

[25] Binglin Gong, Huibin Yan, and Chun-Lei Yang, "Gender Differences in the Dictator Experiment : Evidence from the Matrilineal Mosuo and the Patriarchal Yi," *Experimental Economics* 18 (2) (2015) : 302–313.

[26] Sara Lowes, "Matrilineal Kinship and Spousal Cooperation : Evidence from the Matrilineal Belt," working paper (2018).

[27] Fox, *Kinship and Marriage*.

[28] Radcliffe-Brown, "Introduction" ; Max Gluckman, *Custom and Conflict in Africa* (Oxford : Basil Blackwell, 1963) ; Audrey Richards, "Some Types of Family Structure Amongst the Central Bantu," in *African Systems of Kinship and Marriage*, ed. Radcliffe-Brown and Forde ; and Mary Douglas,, "Is Matriliny Doomed in Africa ?" in *Man in Africa*, ed. Mary Douglas and Phyllis M. Kaberry (London : Tavistock Publications, 1969), 123–137.

[29] Lowes, "Matrilineal Kinship and Spousal Cooperation."

[30] See "Congo Democratic Republic" at Demographic and Health Surveys, https://dhsprogram.com.

[31] Lowes, "Matrilineal Kinship and Spousal Cooperation."

[32] Amanda Lea Robinson and Jessica Gottlieb, "How to Close the Gender Gap in Political Participation : Lessons from Matrilineal Societies in Africa," *British Journal of Political Science* (First View, 2019), https://doi.org/10.1017/S0007123418000650.

[33] Rachel Brulé and Nikhar Gaikwad, "Culture, Capital and the Gender Gap in Political Economy Preferences: Evidence from Meghalaya's Tribes," working paper (2017).

[34] Natalie Bau, "Can Policy Change Culture? Government Pension Plans and Traditional Kinship Practices," CEPR Discussion Paper No. DP13486 (Washington, D.C.: Center for Economic Policy Research, 2019).

[35] Nava Ashraf, Natalie Bau, Nathan Nunn, and Alessandra Voena, "Bride Price and Female Education," NBER Working Paper No. 22417 (Cambridge, Mass.: National Bureau of Economic Research, 2016).

[36] See Sara Lowes and Nathan Nunn, "Bride Price and the Wellbeing of Women," in *Towards Gender Equity in Development*, ed. Siwan Anderson, Lori Beaman, and Jean-Philippe Platteau (Oxford: Oxford University Press, 2018).

[37] Lucia Corno, Nicole Hildebrandt, and Alessandra Voena, "Age of Marriage, Weather Shocks, and the Direction of Marriage Payments," NBER Working Paper No. 23604 (Cambridge, Mass.: National Bureau of Economic Research, 2019).

[38] Alberto Alesina, Paola Giuliano, and Nathan Nunn, "On the Origin of Gender Roles: Women and the Plough," *Quarterly Journal of Economics* 128 (2) (2013): 469–530.

[39] Ester Boserup, *Woman's Role in Economic Development* (London: Earthscan, 2007).

[40] Murdock, *Ethnographic Atlas*.

[41] Ariel BenYishay, Pauline Grosjean, and Joe Vecci, "The Fish is the Friend of Matriliny: Reef Density and Matrilineal Inheritance," *Journal of Development Economics* 127 (2017): 234–249.

[42] Anke Becker, "On the Economic Origins of Constraints on Women's Sexuality," CESifo Working Paper Series 7770 (Munich: CESifo Group, 2018).

[43] Ibid.

[44] Lowes, "Matrilineal Kinship and Spousal Cooperation."