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A Sociocultural Explanation of Internet-Enabled Work in Rural Regions

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ABSTRACT

This article draws on ethnographic research in three rural places in the Western United States to understand how rural workers use the Internet as part of work. We find two key, divergent types of work in rural areas that leverage the Internet: telework and work to market and sell goods and services online. We consider why these two forms of Internet-enabled work are pursued by different segments of the rural population, attending to the socio-demographic variation within and between these two broad categories. Some key differences include whether workers are urban transplants or rural-originating, in 'white-collar' or 'blue collar' occupations, and whether they are men or women. We argue that deficit framings that focus on inadequate infrastructure or absent skills are insufficient to understand such patterns of differentiated use. Instead a sociocultural explanation is needed: one that draws connections between work cultures, occupational values, skills, and practices.

INTRODUCTION

In this article we explore the scope of work activities undertaken by rural workers focusing on how they engage the Internet to address challenges of geography. We find two divergent types of work in rural areas that leverage the Internet. One, commonly referred to as telework or telecommuting, is largely taken up by white-collar professionals and knowledge workers. Their workday is carried out almost entirely on a computer and the work itself is generally not related to their rural locality. The other dominant form of Internet-enabled work is the use of online marketplaces to promote, market, and sell goods and services to a broader customer base often located beyond the immediate area. Work in online marketplaces encompassed a different set of occupations, often ones pursued by workers who held jobs that were very much rooted in rural places such as agriculture and tourism[1].

Importantly, we find that these two types of work--telework and online marketing and sales--are pursued by different segments of the rural population. Demographic variation was evident both within and between these categories of work. Some key differences include whether workers are urban transplants or rural-originating, whether their occupations are typically categorized as 'white-collar' or 'blue collar,' and whether they are men or women. While

[1] Korsgaard, Muller, and Tanvig (2015) similarly identify two ideal types distinguishing between 'rural entrepreneurship' and 'entrepreneurship in the rural.' The former relies principally on the rural place while the latter is a more mobile form of work that can be done in rural places but is not principly tied to the rural. This roughly maps to the distinction we draw as well between work relevant or irrelevant to place. However, the term 'entrepreneur' doesn't entirely fit as a descriptor for our sample population. For example, our group of 'teleworkers' includes formal employees of firms who work remotely.

differentiated use may simply signal the varied multi-purpose possibilities of the Internet and its wide applicability across employment sectors, the patterns of differentiated use that we observed raise questions about inequity. Past research has shown how differences online (in terms of who uses the Internet most frequently and most adeptly) map to offline inequalities, particularly in income, education and other resources (DiMaggio et al. 2004; Kvasny 2006; Robinson 2009).

While digital divide scholarship generally assumes non-use is a form of disadvantage, we explore the ways workers who are powerfully positioned in established industries (for example rural-originating men running multi-generational ranches) are able to maintain their place in status hierarchies without necessarily leveraging the Internet. We argue that existing theories of the digital divide that assume deficits in connectivity infrastructure or digital tech skills explain differences in adoption, use, and benefit do not adequately explain who makes use of the Internet for work and how in rural areas. Rather, we argue such differences necessitate a sociocultural explanation that draws connections between work cultures, occupational values, skills, and practices.

To make our argument, we draw from participant-observation and interviews with 49 people in the three Westernmost states of the USA. All three research sites were once heavily reliant on the timber industry, and have since pivoted in diverse ways to develop and expand alternative industries. We find that orientations to the Internet held by rural-originating people are often tied to rural work cultures, work-related values, and status hierarchies that are deeply gendered. In particular, traditional rural industries are defined by a form of manual, embodied, autonomous work that elevates occupational values aligned with a particular mode of cultural masculinity. In the past, this was reproduced, at least partly, through schooling, something expressed in comments from rural-originating men about a differentiated curriculum for girls (who learned to type) and boys (who took shop class or learned to weld). The feminization of digital tech continues to be rather entrenched in these rural work cultures. As a result, rural-originating men often avoided substantially engaging with digital tech, or channeled their engagement in limited ways.

These two forms of Internet-enabled work, telework on the one hand and online marketing and sales on the other, are not the only two forms of Internet-enabled work in rural places. The contrast between these forms, however, highlights some of the socio-demographic diversity of rural areas and of its work cultures. In reconsidering rural work in sociocultural terms, we go beyond widely recognized characteristics, such as neighborliness or suspicion of outsiders, that are often used to distinguish urban and rural typologically (Hardy et al. 2019; Stein 2002). Instead, our focus is more specifically on work cultures and work practices. The motivation to pursue and do particular types of work in particular ways is defined not just by abstracted values. Rather the work itself also composes culturally-defined skillsets or repertoires (Swidler 1986). In this way, we draw upon a link established by scholars between culture as it is most commonly understood (in terms of values and beliefs) and the skills and stature possessed by workers which give them an advantage within particular fields of work.

LITERATURE REVIEW

Urban Assumptions in Conceptions of Remote Work

As work technologies have expanded from disconnected office computers, to office Intranets, to remote and mobile work, to sensor-based technologies and the Internet of Things, a broader range of work practices have come under the purview of the HCI community. Rural work

has been addressed in a variety of ways in HCI scholarship and related fields. Research on precision agriculture, for example, brings together developments in wireless networks and sensor devices to reconfigure land-based work practices in commercial farming (Burrell, Brooke and Beckwith 2004; Steup et al. 2019). Other HCI work considers the marketing of agricultural and other rural goods (Chamberlain et al. 2012; Grimes 2003). In van der Loo et al. (2015) the authors find that the Internet is an important way for rural-based small and medium sized enterprises involved in food and beverage production to reach beyond "saturated" local markets, findings that are further supported by other HCI research (Crabtree and Chamberlain 2014; Crabtree et al. 2015). The examination of how digital tech could support rural work (or already does) is often (though not always[2]) siloed into specific application areas, like agriculture.

More broadly, research on how Internet connectivity enables new ways of working has especially focused on telework and telecommuting. The scholarship that uses these terms rests on particular assumptions about work and the problems facing workers, that are distinctively urban. The term 'telecommuting' was coined by Jack Nilles in his 1975 article, *Telecommunications and Organizational Decentralization* which offered a vision of a new form of remote work that would specifically overcome traffic congestion, air pollution, and other problems of large metropolitan areas. Based on this initial framing, a cluster of scholarship on telecommuting (which later adopted the broader term telework) emerged in the late 1990s and early 2000s at about the same time as a body of writing on virtuality and cyberspace that offered anticipatory proclamations about the Internet; that it would allow people to live a novel immaterial, unmediated, or virtual existence (Hayles 1999), potentially make travel unnecessary (Plaut 2004), and even make place obsolete (Cairncross 2001; Friedman 2005). These lofty visions suggested certain pragmatic possibilities for rural economic revival through work that has overcome location, where the physical location of the work is irrelevant.

A limited literature on *rural* telework exists, but remains largely separate from and unintegrated into the general scholarship on telework. Simpson et al. (2000), for example, describe how for workers in the Australian outback, "teleworking is not a substitute for commuting: it is undertaking work that has been made available through new communication technologies, and for which commuting to a traditional work-place is not an option" (Simpson et al. 2000: 1). Yet more recent efforts to define the scope and range of telework (Garrett and Danziger 2007; Messenger and Gschwind 2016) make no mention of population density, area unemployment rates, or other characteristics likely to motivate *rural* telework specifically. Neither do they explicitly consider the compatibility (or incompatibility) of telework with certain sectors and industries. In turn, definitions of telework implicitly assume the work in question is in white-collar occupations. As a result, not only does such scholarship on how the Internet enables new ways of working reflect assumptions about locality, but also a lingering and implicit occupational bias and (by extension) a socio-economic class bias.

In light of the urban-centrism of past scholarship on telework, it is helpful to begin by recentering some of the key, distinctive geographic challenges rural workers face that Internet connectivity might alleviate. Rural workers face limited job opportunities in their immediate locality and small local markets from which to draw customers or clients. They don't have to contend with traffic congestion, but they often face unreliable or irregular transportation infrastructure, constraining travel to job sites or the possibility for co-location with colleagues at

[2] A study of work in a rural area in Canada demonstrated how the Internet is woven into a wide range of rural-based work ranging from tourism, public service, to telework supporting "in-situ and geographically distributed work practices" (Melvin and Bunt 2012: 176).

physical worksites. While remoteness and isolation is often a prized part of rural identity that residents wish to preserve, it nonetheless poses challenges to generating income and other strategies of self-sufficiency (Vannini 2011; Gregg 2010).

We use the term "Internet-enabled work" to describe a broader category of work practices inclusive of, but not limited to, telework. While use of the term telework generally presumes a type of work that takes place principally or entirely on a computer, Internet-enabled work, in our use of the phrase, also accommodates work practices that are occasionally digitally mediated, but perhaps not principally. For example, Internet-enabled work includes use of the Internet to order farm equipment, equipment parts, or sell handmade crafts on an Etsy store. In this way, we intend for the term to efface the problematic "digital dualism" (Jurgenson 2012) that marked early work on virtuality and "cyberspace," which drew a sharp distinction between online and offline life. This distinction has not been borne out over time as digital practices are instead woven into our everyday lives which are still very much lived in the physical world.

Sociocultural Explanations of Differentiated Internet Use

The existing literature comparing disparities in digital tech access and use between urban and rural areas has offered two primary explanations, one focused on infrastructure and access, the other on digital tech skills. These explanations provide the basis for several initial hypotheses about why rural workers use the Internet in such different ways and why some rural workers might struggle or fail to leverage digital tech or avoid using it altogether. In a literature review of 157 papers on rural and digital developments in advanced countries, Salemink, Strijker, and Bosworth (2017) identify two broad types of research to understand the rural digital divide. 'Connectivity research' often concludes that, "there are persistent and growing differences in data infrastructure quality between urban and rural areas" (Salemink, Strijker, and Bosworth 2017: 1). In this view, the 'solutions' lie with policies that require and put into place better Internet infrastructure. 'Inclusion research,' on the other hand, finds that "the hampered diffusion of technologies, and the lower average levels of education and skills in rural areas have a negative impact on adoption and use" (Salemink, Strijker, and Bosworth, 2017: 1). In this view, the 'solutions' lie with policies that provide training, education, and support to give people the "necessary skills required to exploit [ICTs] potential" (Grimes 2000: 16).

Alternatively, we find that a sociocultural explanation is necessary for understanding patterns in our data about which rural workers employ the Internet in significant ways for their work and how. Cultural approaches to the study of digital inequality include Kvasny's ethnography of Community Technology Centers in a low-income neighborhood of a large US city and Robinson's study of high school students' circumstances of Internet access in the Central Valley of California (Kvasny 2006; Robinson 2009). Both draw from French sociologist Pierre Bourdieu to consider links between culture, class, and the ways inequality is socially reproduced. Among key insights, this research shows that arguments about technology skill deficits often have cultural underpinnings that go unacknowledged. Furthermore, while technology adoption and use may at times appear motivated by choices and personal preferences, it is important to consider why and how these choices are socially signaled and structured.

Our interest is not in comparing connectivity between rural and urban areas, but in broadening an understanding of the range of uses within rural areas. We ask, who in rural regions specifically is leveraging the Internet and in what ways? In doing so, we look beyond the work that takes place online, to consider how this relates to status hierarchies and inequalities that exist offline in rural contexts. A cultural lens, often building from Marxist class theory, when applied

specifically toward explanations of inequality distinguishes dominant from subordinate class cultures. The ways dominant cultures reproduce their dominance is of particular interest. Educational institutions are often key sites where this reproduction takes place (Willis 1977). Kvasny (2006) notes how this can be subtly reinforced even in efforts such as technology training programs that are intended to overcome skill gaps and channel opportunities for upward social mobility to disadvantaged groups. At a community technology center in a low income neighborhood in a major US city where 95 percent of residents were African-American she found that participants fell far short of acquiring the digital tech skills needed to acquire jobs and improve their income. They were, however, "inculcated" into "dominant views about and uses of" digital tech. They learned, "the proper language for naming their deprivation" (Kvasny 2006: 175). Furthermore, digital tech, as a form of material culture, presents not only functionality, but also carries cultural meaning. This is relevant to discussions of telework, for example, which carry an unstated sense of the primacy and relevance of a certain form and style of work, often characteristic of white collar professions.

Kvasny notes that Bourdieu's social theory of culture is rooted in traditional notions of class stratification, but does not address other kinds of group identities, such as race or gender identity. The sites of our rural fieldwork have traditionally had their own distinctive and dominant work cultures, generally patriarchal. At the same time, rural populations occupy a position of spatial marginality defined by geographic location and experience a sense of class subordination related to their work cultures that are often devalued by powerful external forces, such as state legislatures and other urban, white-collar work contexts. Given the diversity of rural work, it is overly simplistic to suggest that there is a class hierarchy at play that maps neatly to urban and rural distinctions. There are rural residents in white-collar positions, in managerial roles, and who are small business owners. Certain working class occupational values are held by both powerful ranch owners with enormous landholdings as well as the farm laborers whose only asset is their laboring bodies. In our findings we identify certain occupational values that are reinforced in certain rural contexts but that, elsewhere, are treated as outmoded or, more importantly, irreconcilable with digital tech trends.

METHODS

Data Collection

This study draws on research conducted in three rural places in the Western United States (coastal and inland areas of Mendocino County, California, central Oregon in and near the town of Prineville, and the Methow Valley, Washington). Data collection is comprised of participant observation and semi-structured interviews. The second author has conducted ethnographic research in Mendocino County and in and around Prineville Oregon for the past 5 years. This paper draws on a total of 49 interviews across the three research sites (27 interviews in Mendocino county; 12 interviews in and around the town of Prineville; 9 interviews in the Methow Valley), in addition to one interview in another part of Washington State. In general, interviews lasted from 1-2 hours and included questions about Internet connectivity, how the interviewee came to live in a rural place, and about their work practices. Several interviews with cattle ranchers and farmers in Central Oregon lasted as long as 3-hours, and included a tour of the farming operation.

In addition to these farm tours, the authors participated in and observed at agricultural sites including a county fair, the weekly sale at a local livestock auction, and a harbor where we witnessed commercial fishing operations. Other important community events included an annual

rodeo, a high school graduation ceremony, a poetry reading, city council and school board meetings, and numerous community fundraisers -- for the schools, the volunteer fire department, etc. Relocating to rural regions for month-long stints (in the Mendocino county, CA and Crook County, OR field sites specifically) also yielded experience with certain deprivations related to remoteness and sparse population density -- such as poor quality Internet connections, spotty cell phone coverage, limited opening hours for grocery stores, and lengthy travel for services such as prenatal care[3]. Additionally these stints allowed for distinctive rural experiences like encountering acquaintances on the street and in stores. This helped us to develop baseline ethnographic knowledge to better situate insights generated from our interviews.

Sampling and Recruitment

The authors recruited participants who lived and/or worked in the three rural field sites with an eye towards surfacing the range and diversity of experiences within each of the three communities (Emmel 2013). Participants were recruited through personal connections, purposeful snowball sampling, and Internet search strategies. While this paper is focused specifically on the topic of Internet-enabled work, we were also interested in understanding the work practices of people who do not rely centrally on the Internet to do their work, as a way of understanding what makes Internet-enabled work, and orientations to it, unique.

Participants

Participants ranged from being in the early-stages of their career to being retired. Some participants were in an early career stage while others were winding down their working lives and heading toward retirement. They ranged in age from early 20s to late 70s. Participants also varied in the amount of time they lived in a rural place: some participants lived rurally all, or the greater part of, their lives ('rural-originating'), while others moved within the last several years ('urban transplants'). We have categorized participants as rural-originating or as urban transplants according to a combination of factors, most significantly where they came of age, received their highest level of education and/or established their livelihood, and (in borderline cases) based on which community they identified with most. See Table 1 for a list of participants.

Data Analysis

The data analysis drew heavily on a grounded theory approach to collecting, coding, and analyzing data. Grounded theory provides a set of systematic methods to guide researchers through an inductive research process that iterates between data collection and data analysis while, at the same time, staying close to the data (Charmaz 2006). In this study, we iterated between data collection, initial coding, focused coding, and memo writing. The two authors met frequently to check, challenge, or confirm interpretations. This process allowed us to reconcile emerging analyses with the data. The purpose of this research is to develop findings that are grounded in time and place, thus we depart from the emphasis in strict grounded theory analysis toward producing ahistorical and generalizable claims.

RESEARCH SITES

Mendocino County

[3] The second author was pregnant during a period of fieldwork in Mendocino county and undertook a two hour predawn drive on perilous foggy roads to reach a clinic for a routine test.

The cultural refashioning of coastal Mendocino county started in the 1950s when the timber industry went into decline due to overcutting and the early stages of industry regulation. The town of Mendocino became a bohemian haven, drawing artists and musicians. Subsequently the hippies of the "back to the land" movement were drawn to the area through the 1960s and 70s migrating in large numbers from cities to settle and develop communes (Boal et al. 2012). Connected to these new arrivals, and in response to economic decline in other natural resource sectors, the area developed a booming underground economy in cannabis-growing, and is part of the so-called emerald triangle which includes Mendocino, Humboldt, and Trinity counties. Outside of the black market for cannabis and the remaining dairy farms and commercial fishing operations, the coastal region has undergone a transition to a tourist economy. There are large developments of retirement and vacation homes including the architecturally notable Sea Ranch development at the southern coastal end of the county. To the north Fort Bragg retains a working class identity and population. The inland area to the east as well is less defined by the 'natural amenities' that dominate the economic value of the coast and drive tourism (USDA). There are numerous small to mid-sized Rancheria's (the term used in California for Native American reservations) populated by different Bands of Pomo and Cahto Indians as well as significant in-migration of Latinx people, attracted by jobs in the service sector or in agriculture.

Crook County and The Broader Central Oregon Region

The remoteness of Crook County Oregon is shaped by the mountainous terrain that stands between the high desert landscape and the urban center of Portland which locals colloquially call the "rainy side." In this site a traditional, patriarchal work culture tied to timber (an industry which has radically contracted) and cattle ranching (which remains a significant force in the local economy) retains cultural dominance. These industries and their workers are top of mind in the planning efforts undertaken by municipal and county officials even as employment figures have shifted such that schools and hospitals in the region have become top employers. Events such as the Crooked River Roundup (a pro rodeo) and Horse races, the ubiquitous cowboy-themed branding of small businesses, from restaurants and hotels to boutiques, and the Prepper Up shop prominent on main street selling guns, hunting gear, and all manner of gear for self-reliant lifestyles are evidence of the lingering ethos of the homesteader pioneers that initially settled in the area. The Bowman Museum lauds the contributions of generations of local businessmen-philanthropists like Les Schwab, Prineville's most famous resident and owner of the Les Schwab tire distributor. Significantly, the region has more recently expanded into high tech. It now hosts two enormous data center campuses - one owned by Facebook the other by Apple.

Methow Valley

Backed up against the North Cascades National Park, the 70-mile Methow Valley gets its remoteness by being surrounded on three sides by large mountains. Mining brought the first non-native settlers and homesteaders in the 1800s, and then agriculture and timber dominated the valley's economy for much of its history[4] (Portman 1993). In 1972, as the timber and mining industries were in decline, the North Cascades Highway was built, connecting the Methow Valley to Western Washington[5]. Around the same time, the town of Winthrop reinvented itself as a

[4] According to an online publication that details the history of the town of Winthrop, a town in the Methow Valley. (Laura Arksey. 2008. Winthrop -- Thumbnail History. Historylink.org).

[5] According to an online publication that details the history of the town of Twisp, a town in the Methow Valley. (Karen West. 2011. Twisp -- Thumbnail History. Historylink.org).

western theme town, ushering in a wave of tourists. Given its location at the base of the North Cascades, the Methow Valley leaned in to outdoor recreation. In the summer months, the valley offers convenient access to the North Cascades and surrounding areas with hiking, biking, fly-fishing, and hunting. In the winter months, the North Cascades Highway closes, and the valley is home to the largest network of groomed cross-country ski trails in the nation. Like the coast of Mendocino county, people from urban areas have bought second homes or retired in the Methow Valley, driving up house prices making housing affordability in the valley a pressing issue for residents. Like the coastal region of Mendocino county, the Methow Valley can be understood as an "amenity rich" area where much of the recent economic growth stems from the area's natural beauty, attracting tourists, recreationalists, and retirees (Ulrich-Schad and Duncan 2018). Recent statistics suggest that 13 percent of people in the workforce work from home in comparison to the national average of 2.8 percent, signaling the large portion of the population that teleworks[6]. This is further signaled by the creation of a co-working space in 2018 that provides high speed Internet access for 'knowledge workers.' However, even as tourism and telework has increased, agriculture and a more general blue-collar ethos remains a core part of the valley's identity. In addition to large scale farms (particularly harvesting alfalfa), the number of small farms is increasing. Many in this group use organic practices.

FINDINGS

In systematically elaborating our findings, we begin by considering rural telework -- white collar professional service jobs and 'knowledge work' (i.e. software developers, grant writers, accountants, etc). Telework is thought to boost rural economic development by bringing in urban, educated professionals, drawn to the area by the promise of an improved lifestyle, who in turn infuse the local economy with income from outside sources. Melvin and Blunt (2012) refer to this group of workers as "urban transplants." Our findings on rural telework largely support this narrative. In particular, in this section we consider how rural telework is conducted, how connectivity infrastructure and remoteness affect it, and what conditions allow rural workers to take-up and succeed at telework, or conversely lead them to struggle or fail in their efforts.

We go on to show how telework is only one manifestation of Internet-enabled rural work. Online marketplaces used by rural workers for marketing and sales emerged as another dominant form of Internet-enabled work in rural places, one that is less bound to white-collar occupational categories. This work tends to be much more integrated with industries that are intentionally tied to rural place such as tourism and agriculture. Looking closely at the work, and the way workers describe the work in their own words, we find that managing or maintaining online marketplaces requires particular skills and qualities that, at their core, are relational. The work often entails online community building or hinges on the careful management of customers and clients who are strangers to the rural community. Understanding the nature of the work, alongside how it relates to status hierarchies that exist offline in rural contexts, provides an important clue as to why certain people in our research sites pursue Internet-enabled work (i.e. rural-originating women, new-comers to traditional rural industries, and 'urban transplants') and why others often describe themselves as less interested (i.e. rural-originating men).

Rural Telework as White Collar Jobs Done (Mostly) by 'Urban Transplants'

[6] According to an article in the local newspaper that reported on the valley's economy (Charting the Methow Valley's Eclectic Economy, Methow Valley News. December 29, 2016).

Rural teleworkers span a range of employment sectors, types of expertise, and organizational affiliations. We interviewed software developers, grant writers, start-up founders, therapists, novelists, copyeditors, system administrators, and graphic artists, to name a few. Characteristic of the broad range of knowledge work is that in the day-to-day it is largely sedentary, disembodied mindwork. While cattle ranchers are often in tune with micro-changes to the physical environment to effectively raise cattle on vast tracts of land, software developers, grant writers, start-up founders, therapists, novelists, and graphic artists sit at computers largely unaffected by the outside elements, except when weather events cause Internet outages.

Telework often depends on careful (digitally mediated) relational work. Instead of building rapport over a water cooler, rural teleworkers often build and maintain relationships with colleagues and clients virtually over digital platforms. With the increase of digital collaboration tools, this often means rural teleworkers spend work days tied to computers, communicating (often synchronously) on digital platforms. As the founder and CEO of a tech-startup, Preston spends "half [his] day in Zoom calls with one team member or another" to keep his nine employees, distributed across the country, aligned and on task.

Rural teleworkers heavily rely on digital platforms to build and maintain work-related relationships. However, the urban transplants we interviewed who took up telework after they moved to a rural area often found building and maintaining relationships virtually to be a challenge. In response they often took on different job responsibilities, or saw their clientele dwindle. James, who worked in the tech sector doing application development and system integration, described a natural process as he moved toward retirement of handing over software clients to another consultant and losing others through "slow attrition." When Brad moved to coastal Mendocino he was not able to maintain his work organizing home garden tours in the Bay Area, which required that he build relationships with new colleagues as the program's management changed. In an effort to keep his position, he took on work that could be done "really easily from home" like writing content for the company's website. While Brad had the privilege of taking on different job responsibilities, others experienced pushback from colleagues or clients who found the challenges of digitally mediated communication insurmountable.

For rural teleworkers who rely on connectivity for their jobs, often including high bandwidth activities like video conference calls, an important part of their work involved navigating unreliable, slow, and expensive Internet. Abby moved to the coast for the cleaner air hoping it would help her asthmatic son but described how she lost her job working in compliance for the financial industry because her poor internet connection was unable to support the daily teleconferencing the job required. Streaming was one of several high-bandwidth and data intensive uses of the Internet that lagging rural Internet connections often could not support. Jett, a twenty-something programmer, lost two contract positions when he moved back home to the Mendocino coast because he was unable to download several files amounting to 10 gigabytes of data that he needed for the job. Ivanna, a grant-writer for a Seattle-based non-profit, described working in the library parking lot to connect to the Internet, with her "laptop on the [steering] wheel" because the Internet at her house went down for an undefined amount of time.

In our sample, people who telework were most often urban-transplants. The motivation for moving to rural places was often unrelated to the work itself, instead driven by a desire to live rurally in a beautiful place with clean air and water. While we met and interviewed teleworkers who moved to rural places to raise families, it was perhaps more common for teleworkers to move to rural places as part of their retirement plan: slowly (and somewhat intentionally) decreasing their workload, particularly given the new challenges of maintaining their work activities remotely.

Meanwhile, rural-originating people were largely absent from our telework interviews. One exception was Stan, who grew up on the Mendocino coast. In the 1970s when he was a young adult he took a brief trip to New York and established himself as a graphic artist. He had an early mover advantage, making a place for himself in what was (then) a small, insular professional community. While his remote work was initially made possible by Fedex overnight delivery it evolved to become Internet-based. Others like Christie, however, described the difficulty (near impossibility) of securing telework due to limited rural-based social and professional networks. In her 20s and with a young child, Christie moved to coastal Mendocino to be close to family. To realize her goal of becoming a certified accountant, Christie enrolled in an online degree program. However, state laws required a multi-year apprenticeship with qualified CPAs. Given the sparsely populated town, at the time there were only few accountants in town and they "didn't need to take on another person." Apprenticing with a licensed CPA elsewhere would have required commuting a minimum of 1-hour each way. The challenging logistics, combined with the realities of securing this type of telework, drove Christie to drop her plans altogether of becoming a CPA.

We are not the first to find that telework in rural places remains firmly rooted with urban transplants (Grimes 2000; Clark 2001). Yet, the reason for the trend remains largely understudied. Grimes (2000) provides one explanation that suggests rural development policies have taken a technologically deterministic view of Internet infrastructure development, inadequately addressing social factors like awareness and skill development. Yet, our data on rural-originating people pursuing telework, while somewhat limited, is suggestive of three divergent possible explanations.

In one view, adopting a deficit framing somewhat akin to Grimes (2000), it is possible that rural places do not have the necessary infrastructure for the skill development required for telework specifically in white collar professions. In particular, we find, as detailed above, that the rural-originating teleworkers often moved to urban places to acquire skills or accreditations before moving back to a rural place to telework. Jett briefly attended an elite university where he studied computer science, providing skills and credentials to work in the tech sector; Denise attended university in Portland before becoming an online high school teacher. A second explanation focuses less on the skills gained in urban places, and more on the social capital that may be necessary to secure telework. In addition to technology skills, Jett developed a network of connections in the Bay Area tech-sector, providing inroads for potential telework. Stan got his 'in' to the graphic novel industry when he took a trip to New York City and met key players in the graphic art industry. Edgar, a Native American artist from the coast of Mendocino, studied with Stan locally, then moved to the Bay Area where he became connected with the broader commercial artist community. A sociocultural approach, however, shifts away from a deficit framing, which has dominated research on the digital divide generally and rural research, specifically (Hardy et al. 2019). Taking a sociocultural approach illuminates that telework is an urban form of employment that has been 'imported' into rural places without a clear sense of how it may (or may not) be compatible with rural work cultures. While we met and interviewed several rural-originating people who pursued telework, these people tended to be exceptions. A sociocultural approach may therefore provide a more robust explanation for why we saw relatively few rural-originating people pursue telework in the first place.

Online Marketing and Sales as Relational Work

While rural telework is, without a doubt, one important form of Internet-enabled work in rural places, considering telework alone would provide a quite narrow understanding of how the Internet enables new ways of working in rural communities by centering the experiences of one

particular category of rural resident: urban transplants. Taking a more expansive view of work we find that online marketplaces attracted a range of rural workers beyond white collar professionals and knowledge workers. In particular, online marketplaces were leveraged by workers in occupations that are specific to rural localities including traditional natural resource industries like farming and fishing as well as tourism. These workers included urban transplants as well as many who were rural-originating. Workers engaged in this type of work made use of platforms specifically designed as online marketplaces (Etsy, Ebay, Airbnb, and specialty marketplaces like online livestock auctions) as well as general social media platforms (Facebook, Twitter, and Instagram). The latter provided the advertising and marketing functions of an online marketplace, but not necessarily the infrastructure for completing transactions. These workers also often supplemented presence on online marketplaces with their own static websites.

The ability to expand into new markets, often ones that are physically distant, was the primary economic incentive for people in rural places to use online platforms to sell products and services. While many people wanted to sell to local markets, local markets are comparatively small and tended to be crowded. In an interview, Valerie said that she "saturated" her friends and family "with all sorts of jewelry" and decided to turn toward an online business model as a way to "find other people." As a sheep breeder who made and sold fleece and wool, Carly used Facebook to connect with people across the region and nation who, unlike local buyers, were able to buy large quantities at wholesale. The Internet allowed rural-based workers to reach beyond (limited) local markets, expanding their customer base, in some cases, even facilitating global reach.

At the same time, online marketplaces were also used for local marketing and to coordinate sales with local customers. On the Mendocino coast, Vanessa sold Avon products to a clientele that is almost entirely locally based. Her work was split between Facebook and in-person efforts. On Facebook she leveraged the way the platform is designed to maximize engagement and is "constantly reminding [customers]" of upcoming orders by tagging customers in photos on Facebook, running raffles with Avon products on the platform, and coordinating orders and details for in person deliveries using Facebook messenger. The platform was her customers' preferred method of communication and so she was able to reach most of them there. Vanessa attributed part of her success to the fact that she was located rurally where residents lacked nearby access to large box stores, making her business an easy last-minute option for gifts. In addition to her online efforts, Vanessa drummed up business offline as well: her car had her Avon business contact information, she dropped Avon pamphlets off at customers houses, and she called customers by phone.

Interviewees described how online marketing and sales was often highly relational and entailed strategic communication, social media savvy, and symbolic work. Sellers succeeded by leveraging their knowledge of the platform to effectively reach their target audience. Platforms designed as online marketplaces (like Etsy or Ebay) were largely used by people who sold non-perishables that could be shipped across the country or globe. Sellers like Ramona carefully curated a brand on online platforms, investing significant time in taking photos of her wares to make sure that they showed off product details and maintained a consistent brand image across platforms that would resonate with an established customer base. In other words, selling items on platforms designed as online marketplaces is not as simple as posting content online and passively waiting for customers to place orders, but rather involves deliberate curation and constant effort.

Social media, in particular, is a core part of rural businesses' marketing strategies: both to communicate with existing customers and expand their customer base. Tonya, who led marketing workshops for small organic farmers, told farmers that they, "need to use the tools your customers

are using." She was speaking in reference to Facebook, Instagram, and Twitter; the latter which was particularly well suited for low bandwidth situations. Her goal with the marketing workshops was for small farms to spend as little money as possible on marketing, while reaping the benefits of a well developed marketing strategy. Her recommendation was that farms frequently post to multiple social media platforms with short, concise messages accompanied by a photo. Hannah, a rare female captain of a fishing boat (with an entirely female crew) on the Mendocino coast, relied on social media to market to her "core following" of "older ladies that have time to go to the farmer's market" and "care about good food." Hannah's employee who was responsible for curating content online and regularly posted on social media platforms worked on land (as opposed to at sea on the fishing boat where connectivity is spotty, at best). She took care to keep an "active page" by posting entertaining content "everyday or every other day." The content was designed to build a brand image: photos of the women fishing, funny and strange things they encountered at sea, or recipes.

In addition to selling material goods online, we found many rural people with second homes or spare rooms used online marketplaces to market vacation rentals. In response to declining traditional industries, rural places like the Methow Valley, the coast of Mendocino County, and to a lesser degree Central Oregon, have reinvented themselves as tourist destinations rich in natural amenities. In these places, vacation rentals became a way to earn side income. However, managing vacation rentals required hosts to do extensive relational work with 'outsiders': people who are not from the area, visiting for short periods of time. As a seasoned Airbnb host, Ryder anticipated that guests tended to underestimate the drive from the Bay Area to his house outside a small town in coastal Mendocino County. The three hour drive "means three solid hours of driving" that doesn't include stopping for "groceries, gas, or to look at the outlooks." In an effort to prepare guests, Ryder "tries to have a lot of correspondence" so guests "understand how remote" the house is, including things like the house having an outhouse. He recognized that urban guests had to be gently initiated into the ways of rural life.

For others, the relational work of managing a vacation rental extended beyond coordination to inviting strangers into their homes. In their Airbnb listing, the owners of Whispering Pines Ranch leaned into their identity as an active cattle ranch, with photos on the Airbnb listing showcasing their bunkhouse decorated with ranching memorabilia like horseshoes and horse bits. During an interview with the owners' daughter, Ariana remarked on the joy her family gets from hosting people around the world, often "from the cities, [who] have no idea what to expect" when visiting a rural cattle ranch. It was particularly fun for her family when guests expressed an interest in ranching. Some tourists would "jump on the feed truck with us, or they'll [even] want to watch a cow be slaughtered. That's fascinating to them. So that's cool." The cowboy image tended to 'sell' people from Europe "who have a different way of vacationing and like to really see what's going on." Whether welcoming people in their homes or coordinating visits, managing vacation rentals required extensive relational work to set and manage expectations with often urban-based guests.

Online platforms have made vacation rentals a more viable and reliable form of income for rural residents with the wherewithal to manage rental properties. Airbnb, as one platform in particular, seems to have expanded the vacation rental market. Whispering Pines Ranch listed its vacation rental on Craigslist, booking a "handful [of guests] in a year, maybe" and now, after listing the property on Airbnb, have generated over $12,000 annually from the vacation rental. Brad and his family similarly experienced an increase in guests when they listed the property on Airbnb.

For many of the rural workers who leveraged online marketplaces, the product or service they offer was tied to place, and specifically to a *rural* place. Sheep breeding, commercial fishing, and rural vacation rentals, to name a few, depend on particular geographic features. Carly needed pastures to raise her sheep. Whispering Pines Ranch needed an appealing and scenic location to raise cattle and attract tourists. Hannah needed access to fishy oceans to sustain her livelihood as a commercial fisher. However, for others the work itself was not dependent on living in a rural place. Ramona could design jewelry and assemble curiosities in any number of places. The same goes for Lydia who made jams and wedding cakes. However, for many people like Valerie, while her jewelry making is not directly tied to living in a rural place, her spouse's job (cowboying) limited the places she could live and kept her tied to a rural place.

"Above My Pay Grade": The Gendering of Rural Digital Work

We found a notable pattern in *who* is leveraging Internet connectivity to do marketing and sales in online marketplaces. While the teleworker population was fairly evenly divided between men and women (albeit almost exclusively urban transplants), in online marketplaces, women predominated while rural-originating men were strikingly absent. The nature of the work is, not coincidentally, often deeply relational; sales, marketing, and online community management, or symbolic work; small business 'brand' and identity management. What explains the absence of rural-originating men, particularly men working in traditional industries, from these forms of work? How do these rural-originating men relate to digital tech and position themselves in the Internet economy, if at all? While our purposive sampling eventually led us to rural-originating men in traditional industries, whose attitudes towards the Internet ranged from reluctant to enthusiastic, we found that their engagement was selective and they often expressed their interest in, and use of digital tech, explicitly in gendered terms.

To understand this gender divide we must go back to the gendering of digital tech in rural communities beginning in educational institutions as well as in the gendered division of labor in traditional rural industries, such as on ranches and farms. In the context of our research, we found that work that was not done out on the farm[7], such as bookkeeping and other "paperwork," often fell to women. As that work became computerized, women often became the primary computer users in farming households. The history of women's work in cattle ranching in the Western United States, for example, has been rooted in a spatial division of labor, the home versus the ranch; inside work versus outside work. Prior research has similarly found that bookkeeping and computer work is often delegated to 'ranch wives' (Kelly and Shortall 2002). Decline in the viability of small family farms and the contraction of the timber industry has meant that women especially (but also sometimes men) sought supplemental income by working outside of the cattle ranch, oftentimes getting jobs in town (Sherman 2009)[8]. The gendering of computer work is visibly evident at, for example, a local livestock auction in central Oregon. On Monday auction days, it is exclusively men who handle cattle in the auction arena and work as auctioneers. Generally it is also men who bid on the cattle. On the periphery of the main event, a small crew of women handle all of the computer work: entering bids, handling requests by phone, etc. This work, often done in a part-

[7] One exception was digital work that was closely related to the quality of the product or reputation of the farm. Many cattle ranchers kept close track of their cattle in genetics databases (increasingly) in digital formats.

[8] A 2001 article in the Central Oregonian locates this phenomenon specifically in one of the regions in our study ("More Farmers Find New Careers to Make Ends Meet". Central Oregonian, January 9, 2001).

time capacity, is an example of the way 'ranch wives' contribute to the family income, not as primary breadwinners, but in a secondary role. We posit that this history is part of what has led to the persistent gendering of (digital) work.

Rural men and women talked explicitly about computers and the Internet in gendered terms when recounting their work practices, giving us clues into the meaning and intent behind the gendered patterns of tech adoption and non-adoption we observed. Rural-originating men sometimes demeaned the Internet in one breath while celebrating certain conveniences it offered in another. In one train of thought, Shamus a fifty-something cattleman in central Oregon said that the "Internet stinks, I wish it'd go away" and had been particularly detrimental for kids, "most kids can't lift more than a cell phone anymore" though he appreciated its usefulness for looking for equipment and parts and the increase in farm efficiency he experienced with the addition of digital tech more generally.

Some agricultural men (generally older) also related to computers and digital tech as something they'd never had the chance to build the skills to use, but in admitting this they also tended to note that they had more important priorities. Tom, an older cowboy originally from Texas who worked doing itinerant farm labor in central Oregon recalled that when he was in high school, "the girls took typing, home ec, and… I was in FFA[9] and welding." Despite his limited digital tech skills, he had come to rely on the Internet for job hunting: searching online classified job ads on Ranch World. When asked about the resume he sent out as part of job applications, he replied "that's above my paygrade" adding that he likes to "keep a woman around" to help with document processing and other computer tasks. In a similar vein, Shamus explained that the ranch's bookkeeping is done by his mother and wife noting, in exactly the same language used by Tom, that it's "above my pay grade." Speaking on behalf of his father, himself, and his son he subsequently noted, "we're working" and "don't have time" for computer work. Additionally, many of these men who eschewed digital tech were relatively well situated in ranching life. For example, many supply beef through the conventional meat supply chain, working with the same buyers year in and year out while living on multi-generational cattle ranches with vast landholdings they owned outright.

Among younger rural-originating men in agriculture, many embraced certain aspects of digital tech that related to agricultural work, such as placing bids at online cattle auctions, while often carving out the more masculine-identified digital activities, and eschewing or delegating the parts of the work that accorded with feminine values. John is a young cattle rancher running a massive inherited ranch in central Oregon. He maintained two Internet connections, one principally for playing the networked first person shooter game 'Call of Duty.' He talked about his plans to set up an Airbnb for a ranch house on his property, saying his neighbor's wife would manage the Airbnb property for him and that he preferred to avoid this work because, "Airbnb opens up some more people problems." In another interview, Jacob, a twenty-something fisherman on the Mendocino coast who lamented how social media has people, "looking at what everyone else is doing instead of worrying about themselves," said he'd hoped his girlfriend would help grow his fishing business by leveraging social media, Facebook in particular, to do more off-boat sales, once she got a license to buy and sell fish.

Spanning the generational divide, autonomy is a core occupational value in agricultural work and particularly in cattle ranching. Autonomy is central in other male-dominanted working class occupations as well, like long-haul trucking (Levy 2016). In reference to her son and husband, Denise who raised two sons on a multi-generational cattle ranch outside of Prineville, Oregon

[9] Future Farmers of a America, an organization with chapters in many rural high schools.

mentioned how important it is for her sons to 'be their own boss,' and how difficult they would find it to be managed by someone else (see also, Kelly and Shortall 2002). Cattle ranchers emphasized this value often in terms of not needing to conform to what others (especially outsiders) think or want. For instance, Shamus said his father would probably "kill somebody" if he had to sell meat direct-to-consumer at grocery stores in urban places like Portland or California because he would need tolerate "stupid questions" about the meat production "with a straight face." The reality of autonomy in cattle ranching, however, may be a bit more complicated. For instance, intergenerational ranches often had to resolve differences between how new and old generations envisioned running the ranch; many cowboys (including Tom and Jack whom we interviewed) either managed ranches for corporate owners or at times worked as 'ranch hands' for other ranches, where they would often negotiate with ranch owners or be directed by foremen about the tasks that needed completing. Nonetheless, the relational work that men eschewed as part of new Internet-enabled marketplaces (managing guests at an Airbnb, doing direct-to-customer sales) is work that contradicts this particular masculine value of autonomy. Work in online marketplaces often means being beholden to what 'outsiders' desire. For example, hosting tourists means purchasing certain coffee products to meet the expectations of outsiders and otherwise dealing with them in a customer service capacity where the 'customer is always right' -- "people problems," as John succinctly lamented.

While rural-originating men often eschewed relational work with 'outsiders,' often seeing it as limiting their autonomy, they nonetheless did significant relational work in their occupations but much of this was internally-focused networking and negotiating with others in their industry. For example, John who lamented the "people problems" that come with hosting an Airbnb, had just returned from the major annual livestock auction in Winnemucca, New Mexico and described in great detail the networking he did with major buyers toward the aim of rebuilding his ranch's reputation after a few years of health and fitness problems in his cattle herd. He had the head-start of his family heritage and self-presentation as a cattleman. In other words, he knew very well how to play this role and look the part. What he didn't need or want was the distraction of digital tech to mediate relationships or connect him to outsiders. Even as the cattle auction itself was streamed online on screens across the country and in conference rooms at the event itself, the important work of building and maintaining relationships among established industry players was carried out face-to-face.

DISCUSSION

Rural-Originating Men Can Afford To Eschew Internet-Enabled Work

On first glance, our findings seem to lend to a well-established argument about culture as a factor that works against technology adoption. In Rogers' (1995) "diffusion of innovations" framework, he elaborates a typology of technology adopters from the "early adopters" who are quick to identify and adopt a new technology to the "laggards" who are slow to do so. These type categories are tied, in Rogers' formulation, to a set of personality traits. The "laggard," for example, is one who holds fast to old ways of doing things, who is bound by cultural beliefs, and who treats the new with suspicion. However, we resist the over-simplified dichotomy between culture (as tradition) and technology (as disruptive and acultural). One problem with this framing is its inherent pro-innovation bias, the normative assumption that people *should* adopt new technologies, that it is of benefit to them and that resistance is a form of self-defeating irrationality.

The benefits realized from tech, we suggest, cannot be assumed. Rather, they vary from one person or group to another.

Rural-originating men in traditional industries benefited from a culturally structured status hierarchy that yielded economic advantages. For them, eschewing digital tech (specifically for uses that entailed relational work) can be seen as rational insofar as adopting new digital technologies was additional work that was not clearly necessary for the economic viability of their ranch. In the Western United States where we conducted research, rural-originating men in these traditional industries developed a robust cultural repertoire of skills suited to their occupation. They did so through their lifelong socialization in rural educational institutions, in ranch or farm life, and their deep integration into localized and broader agriculture-based social networks. As we saw above, John did not need digital tech for networking because his cattle ranching sustained itself through face-to-face networking.

It was often moments of necessity that prompted rural-originating men to take up digital tech, often in ways that could change their work practices in more enduring ways. In the last two decades, livestock auctions in the USA, like the one already mentioned, have begun to offer online bidding at auctions which are live-streamed by webcam. The first time Jack's father, a long-time manager of a corporately owned cattle ranch, participated in such an online auction was in a moment of panic. He was running late to a cattle auction and realized he would miss it all together (a three hour drive each way from the ranch), so he participated online instead. This sudden necessity was a catalyst for Jack's father's use of the Internet for cattle sales. Since then, he has branched out to attempt other substantial ranch-related purchases on the Internet, like trucks.

We adopt the term "cultural repertoire" from Ann Swidler's argument for culture as an explanatory force for social action. She suggests that, "within established modes of life, culture provides a repertoire of capacities from which varying strategies of action may be constructed" (Swidler 1986: 284). To change strategies entails the "high cost of cultural retooling to adopt new patterns of action." In the context of our research, challenging the notion of culture as simply a constraint on tech adoption, this same status structure of gendered work was, in part, what seemed to catalyze tech adoption among rural-originating women in the three communities where we conducted research, particularly those who were trying to carve out a non-traditional role in male-dominated rural industries. In that sense, women who embraced online marketplaces and social media marketing in traditional rural industries like agriculture might be referred to as what Rogers would call "early adopters." But just like the men in their industry, women's adoption was also culturally shaped. They leveraged a situated cultural notion that, by virtue of gender, they were predisposed to digital tech and relational work. In particular, these women used it to seize novel economic opportunities. Below we consider three groups, who lived and worked adjacent to the group of rural-originating men who eschewed digital tech. These groups found ways to exploit this opening.

1. Rural-Originating Women Assuming Non-Traditional Roles in Agriculture

The established role of men in rural work cultures in the Western United States and their general disinterest in marketing and sales in online marketplaces, has created openings for at least three other categories of workers. We found that rural-originating women leveraged digital tech as they stepped into traditionally male dominated rural occupations. Carly, who referred to herself as a "horse girl" took an interest in cattle ranching, but was largely excluded from these spaces by virtue of her gender. She recalled showing up to do ranch work alongside her husband. At the end of a day's work branding or doing other ranch related work, "my [male] partner would get paid for

his day's wages and I'd get a Pepsi and maybe a dinner." Unable to make 'ins' as a woman in the conventional market, Carly turned to sheep breeding and Facebook, where she shares information and expertise with sheep breeders across the nation. Hannah, a female fishing boat captain, similarly found a niche using social media. While she started with some reputational benefit from her father who had also captained a fishing boat for many years, her father had long since sold his boat and other assets and had retired. She had to restart in the industry mostly from scratch. Identifying a business opportunity, Hannah capitalized on the fact that the men were not engaged with social media, and as a result, had left an entire market segment untapped: locavores, older women, and other people interested in buying direct from fishers. In this way she straddles the masculine world of the sea (pulling massive fish from the ocean, getting covered in fish gunk) and the feminine world of building relationships with industry 'outsiders' and leveraging social media to build a brand image and reputation. The men, she says, "don't want to deal with the public… they don't want to deal with people. Like could you imagine, you get some crotchety old dude" who has to then deal with "little old ladies that don't really know what they want and they can't carry the fish up the dock, and want to take a half hour of your time." In this way online marketing provided an opening for women like Carly and Hannah who wanted to enter traditional industries but lacked many of the 'ins' that men who were well established in the industry possessed.

2. Urban Transplants Who Move to Rural Areas to Pursue Farming

The opportunity to make inroads in traditional industries extended to new farmers broadly (which could include both men and women). Many new farmers were urban transplants who moved to a rural place with a vision to farm. Without the assets, cultural repertoire, reputation, and skills of large multi-generational ranches and farms that produce for the conventional supply chain, new farmers needed to find other ways to succeed. Like, Carly and Hannah, some leveraged online marketplaces to reach alternative markets. Two women, Jan and Rachael, were both urban transplants attempting to run small farms supplying direct-from-the farm artisan products in central Oregon. Rachael was working with an established older farmer to gradually take over his farm (as an alternative to the traditional route of family succession). Both of these women took the non-traditional role of running the farm while their husbands did off-farm jobs or telework. Brad, another urban transplant, notes that when he moved to the Mendocino coast he was "idealistic" about starting a small organic farm; the books he read were about "learning how to grow and be a really good farmer" but did not "address the finances" of having a farm. To make the farm viable, Brad and his wife both took on part-time telework and pieced together income from the farm by running a farm camp for children, growing flowers for weddings, and running a CSA. Making a living as a small farmer involved not only the skills to farm, but also skills that were wrapped up in cultivating a market for their goods. Urban transplants turned to digital skills they sometimes already possessed to give them an edge over others in the locality.

3. 'Ranch Wives' Seeking Supplementary Income

Finally, online marketplaces have been instrumental for 'ranch wives' in particular to earn supplemental income in ways that align with gendered expectations in patriarchal ranching cultures. The rich history of women taking work outside of the house to supplement the ranch's income, and the declining financial feasibility of cattle ranching, has laid the groundwork for women taking on forms of digital labor, notably using online marketplaces, to generate secondary income. We find that the slice of Internet-enabled work carried out in addition to the primary work of ranching was often pursued by women. Valerie supplemented the income of her husband, a

cowboy, by selling jewelry online. Ariana and her mother managed a vacation rental property on their family ranch, while the men were out herding cattle and harvesting timber they grew on their land. Rachael, while an urban transplant herself, had a network of local "moms" who worked for her to plan and market events that were hosted on her ranch, like pumpkin patches and easter egg hunts. For these women, Internet-enabled work was a legitimate way to earn supplemental income without disrupting the established gendered structure of ranching culture. Each of these avenues for income generation--from women and urban transplants entering traditional industries to 'ranch wives' taking up supplemental income--involved strategic use of the Internet and relational work. These opportunities were available, in part, because they were often eschewed by rural-originating men in traditional industries.

Our findings reiterate points made in previous research about rural gender dynamics around income earning and employment. In Sherman's ethnographic study of a rural town in Northern California where the decline in the timber industry led to rising male unemployment, traditional patriarchal family structures that prized the male breadwinner and female homemaker were challenged by the shifting labor market (Sherman 2009). As rural women entered the labor force they pursued and talked about their work in ways that did not fundamentally challenge the gender dynamic, for example, by downplaying and describing their endeavors as 'secondary income' (Sherman 2009). Bonds (2006) studied how rural towns positioned themselves as particularly well-suited to supply labor for call center work. Such work reinscribed gender roles providing women with income but doing work that was home based and part-time, among other feminized qualities. Likewise, in our research in the Western United States rural-originating women with male spouses or partners in traditional industries were cautious about appearing to challenge male roles in blue collar and traditional work cultures where work ethic was a core and all-encompassing masculine value for men: one that indicated their value and self worth within the community, more generally.

CONCLUSION

In this paper we have described two distinct forms of Internet-enabled work in rural places of the Western United States: telework and online marketing and sales using online marketplace platforms. We have demonstrated that these forms of work differ both in terms of the work itself, as well as *who* within rural places typically takes up this work. In particular, we find that telework remains the province of urban transplants while marketing and selling goods or services online using online marketplaces has more appeal to rural-originating populations, but is disproportionately done by women in rural contexts. These findings, which cannot be entirely explained by a deficit framing focused on lacking infrastructure or absent skills, led us to a sociocultural explanation about differentiated forms of Internet use.

We have offered a sociocultural account to challenge and refine thinking about differentiated use of digital tech in the context of rural work. We argued that rural-originating men in traditional industries who eschewed specific forms of Internet use were not simply "laggards" behaving irrationally against their own interests, but rather were engaging with the technology in ways that did not disrupt their status position within the rural context. At the same time, rural-originating women and urban transplants (both men and women) exploited economic opportunities by leveraging online marketplaces, often to make inroads as newcomers to traditional industries. Importantly, this research upends the usual way of thinking about digital inequality which assumes non-users are those most disadvantaged (with access and skill issues as key barriers). Instead, we find that the non-users, in this case rural-originating men in traditional industries, are often the

ones with established power and status within their industries and, depending on the location, in the rural context more broadly.

Some open questions point to future research that could be undertaken by scholars of Internet studies including those in the HCI and CSCW subfields. It is unclear whether the new role of rural-originating women in the labor market has the capacity to reconfigure patriarchal status hierarchies in the rural context in more enduring ways, particularly as women take up roles in traditional industries like farming and fishing. Finally, it remains an open question how, if at all, the influx of urban transplants (teleworkers in particular) to rural places may have 'spillover effects' to the economic lives of those who are rural-originating. On the one hand, our data suggests that the addition of teleworkers can create opportunities for rural-originating people. In coastal Mendocino, Edgar kick-started his career as an artist after apprenticing with Stan. Furthermore, the addition of libraries, playhouses, parks, and local newspapers in all three research sites signals the addition of urban institutions that can be passively enjoyed by all rural residents: urban transplants and rural originating alike (Goetz 2013). On the other hand, however, the strikingly few instances of rural-originating people (men and women) in our sample taking up telework suggests that such 'spillover' may in fact be quite limited. In part, as we have argued in this paper, selective use of the Internet can be explained by sociodemographic characteristics. A more robust understanding of spillover effects could lay the groundwork for rural economic policies.

Table 1: Participants Interviewed, by Research Site

Name (pseudonym)	Occupation	Internet-enabled Work	Urban Transplant or Rural-originating	Gender
Mendocino (27 participants)				
Abby	Compliance in financial industry	Telework	Urban transplant	Female
Anna	Website content coordinator	Telework	Urban transplant	Female
Brad	Research and write content for website; cultivate small organic farm	Telework; Airbnb; marketing and sales online	Urban transplant	Male
Christie	Restaurant owner	Attempted telework; schooling online	Rural-originating	Female
Charlotte	Publisher of feminist magazine and videographer	Telework	Urban transplant	Female
Dan	Tree trimmer	None	Rural-originating	Male
Edgar	Graphic designer	Telework	Rural-originating	Male
Erica	Former employee of out-of-state school district; co-owner of local campground	Retired telework	Urban transplant	Female
George	Run software company	Telework	Urban transplant	Male
Hannah	Commercial fisher	Marketing and sales online	Rural-originating	Female
Hector	Therapist	Telework	Urban transplant	Male
Jacob	Commercial fisher	Minimal use of social media for marketing and	Rural-originating	Male

		sales online		
Jett	Software developer; local tech consultant	Telework	Rural-originating, attended elite university in the Bay Area before returning to hometown	Male
James	Technology application development and system integration	Telework	Urban transplant	Male
Lydia	Make jams and wedding cakes	Marketing and sales online	Urban transplant	Female
Madeline	Pharmacy-tech; former sales representative for multi-level marketing business	Marketing and sales online; schooling online	Rural-originating	Female
Mary	Teacher; former language translator	Schooling online; former telework	Urban transplant	Female
Pam	Accountant	Telework	Urban transplant	Female
Patrick	Tree trimmer	Minimal transactional sales online	Rural-originating	Male
Ramona	Jewelry and ‘curiosities’ designer	Marketing and sales online	Urban transplant	Female
Ryder	Writer	Telework; Airbnb	Urban transplant	Male
Sarah	Therapist	Telework	Urban transplant	Female
Stan	Comic-book colorist	Telework	Rural-originating	Male
Tami	Publisher of counter-culture and radical books and posters	Telework; Airbnb	Urban transplant	Female
Valerie	Jewelry designer	Marketing and sales online	Rural-originating	Female

Vanessa	Avon representative	Marketing and sales online	Rural-originating	Female
Warren	Database systems developer	Telework	Urban transplant	Male
Central Oregon (12 participants)				
Ariana	Yoga instructor; assist in managing vacation rental on family cattle ranch	Marketing and sales online; Airbnb	Rural-originating	Female
Audrey & Brent	Sheep ranchers	Telwork; marketing and sales online	Rural-originating	Female & Male
Carly	Sheep breeder	Marketing and sales online	Rural-originating	Female
Denise	Former online school teacher	Former telework	Urban transplant	Female
Greg	Cattle rancher (older generation)	Precision agriculture	Urban Transplant	Male
Jan	Farmer	Marketing online	Urban Transplant	Female
Jack	Cattle rancher and cowboy (younger generation)	Buy parts online; online cattle auctions	Rural-originating	Male
John	Cattle rancher (younger generation)	Buy parts online; online cattle auctions; envisions friend's wife will manage Airbnb	Rural-originating	Male
Rachael	Former accountant; hosts farm-related events on organic farm	Former telework; marketing and sales online	Urban-transplant	Female
Shamus	Cattle rancher (older generation)	Buy parts online	Rural-originating	Male
Tom	Cowboy (older generation)	Job search online	Rural-originating	Male

Methow Valley (9 participants)				
Anna	Doctor	Telework on occasion	Urban transplant	Female
Bill	Former recruiter; manage online store	Former telework; marketing and sales online; buy parts online	Urban transplant	Male
Brad	Software developer	Telework	Urban transplant	Male
Brandon	Professor	Telecommuter	Urban transplant	Male
Brody	Retired VP of sales	Retired telework	Urban transplant	Male
Ivanna	Non-profit grant writer; work at local cafe; former language translator	Telework; formerly language translation online	Urban transplant	Female
Preston	Founder and CEO of technology start-up	Telework	Urban transplant	Male
Scott	Ship simulation developer	Telework	Urban transplant	Male
Stuart	Construction contractor	Send and receive blueprints online; buy parts online	Rural-originating	Male
Other Places in Washington (1 participant)				
Tonya	Technology integration specialist; leads workshops for small organic farmers to strategize online marketing	Teleworker	Urban transplant	Female

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