# “THIS LAND IS GOOD FOR THIS ANIMAL”: A METHODOLOGY TO SEE THE KNOWLEDGE DYNAMICS COMMUNICATED AMONG SARDO-MODICANA BREEDERS IN A TIME OF SCIENTIFIC UNCERTAINTY AND TECHNOLOGICAL PROBABILITIES

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ABSTRACT

"THIS LAND IS GOOD FOR THIS ANIMAL":
A METHODOLOGY TO SEE THE KNOWLEDGE DYNAMICS COMMUNICATED AMONG SARDO-MODICANA BREEDERS IN A TIME OF SCIENTIFIC UNCERTAINTY AND TECHNOLOGICAL PROBABILITIES

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For this dissertation, I designed and conducted qualitative research adhering to an ethnographic approach that builds on the notion of culture as narrative. This study will contribute to the growing literature addressing how visual data can be applied in narrative inquiry. One of the challenges for researchers and practitioners in rural development is getting at sensory or embodied knowledge so that it can be made conscious and represented through language. Interdisciplinary investigations that align rural conservation studies with language-based fields are gaining interest among policy makers and funding institutions. This dissertation provides evidence that a documentary video toolkit enlarges an emic perspective of situated practices, grounded in local knowledge, that necessarily serves the interests of scientific research. Specifically when focusing through the lens of a camera, attention can be directed towards tacit knowledge or specifically, "the practices that exists in people's hands and in their actions." For this dissertation, I am seeking the knowledge dynamics communicated among Sardo-Modicana breeders, whose livelihood depends on the well-being of this rare and endangered breed of cattle. From this study, a narrative account was crafted from the stories of six individuals that draw from a pool of knowledge that has been passed down over generations and has remained stable for nearly 150 years. A burgeoning market economy for grain was the exigency leading to innovation: the Sardo-Modicana was bred for traction in the 1880s, to cultivate wheat and carry it to the market-place. Today, men still draw the cow's

milk by hand, while the women continue to produce an artisanal cheese for family and local consumption. The traditional production system maintained through intergenerational animal husbandry practices became the source of innovation for the breeders in the 21st century.

In 2001 a "code of practice" indicating a formal discipline specifying new fattening procedures how the animal was drawn up in the document, "The Discipline of Production for the Protected Geographic Indicator (I.G.P. in Italian): Il Bue Rosso Del Montiferru." While this document acts as a network of communication that makes affordances for both "farmer know-how" and the "schooled knowledge" by technical or scientific experts, it necessarily acts *on* the age-old livelihood practices of the Sardo-Modicana breeders. The protected geographical indications (P.G.I. in English)" is intended to fulfill the goal to conserve and to support traditional resources and protect farmers' rights and their impact on the preservation of indigenous species and traditional and local knowledge. This is a story of how each of the breeders make sense of their world as they attempt to maintain or change cultural patterns, during a time of rapid changes in agriculture, the environment and market-driven demands.

This work is dedicated
to my parents, Mary Jane Foltting and John David Vagnetti, Sr.
and in the memory of my paternal grandmother,
Pasqualina Vagnetti.

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This work grows out my love for finding a good story to document in black and white still photography or documentary video. I have, through the lens of a camera, drawn the real world closer to me, while unwittingly collecting valuable data every time I press the shutter button on my camera. Now, thanks to the following people, I can make meaning from the data I collect. I want to thank my advisor, Jeff Grabill, for showing me how to understand and successfully apply grounded theory; Julie Lindquist who shared with me the pleasure of submerging oneself in the messy world of data; Danielle Nicole DeVoss who never stopped providing me with ways to clarify my work as it evolved; and to Stuart Blythe who gave me the last shove into the world of rhetoric and professional communication. This is where I belong and identify my research and scholarship, and I am grateful for your support and patience!

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

# CHAPTER 1

*Literature Review*

## 1.1 A Learner's Proem

This is a story about a stable knowledge system constructed by Sardo-Modicana cattle breeders in westcentral Sardinia, a story suddenly disrupted by a written text. The necessary work taken up to compose this written text, a dissertation, might be considered a peregrinatio scholastica or a learner's pilgrimage, a term derived from the Latin peregrinatio and understood as "a leaving of one's homeland or a self-imposed exile and wandering for God." I prefer to assume the notion of leaving one's homeland on a peregrinatio scholastica in both the literal and metaphorical sense. For this dissertation I have crafted a narrative account that will introduce you to a world where the certainties of science are questioned and technology is conceived with the probable, where what counts as valid knowledge is constantly changing.

In chapter 1, I explore how I fit into the field of rhetoric and professional communication by enlarging that discourse communities' understanding on the role of human bodies in knowledge production, how my work "close[s] the gap between the arts and humanities on one hand and the natural sciences, on the other hand: the two worlds of humanity" (Ingold 2000)[1]. My efforts in bringing symmetry between the two worlds of humanity is supported by scholars in our field that manifest their commitment to humanistic reform vis-à-vis in situ research that makes affordances for work in the public sphere. Furthermore, I seek out scholars and researchers in the field of rhetoric and professional communication who support me in the notion that our minds are necessarily extended across cultures and environments

1 I have been looking for a discipline that allows me to "close the gap between the arts and humanities on one hand and the natural sciences, on the other hand: the two worlds of humanity" (Ingold 2000). I believe I have found that field: rhetoric and professional communication. In chapter 1, I explore how I fit into this field by enlarging that discourse communities' understanding on the role of human bodies in knowledge production.

through distributed cognition. I provide examples from my grandmother, Pasqualina, examples from my own artistic and research experiences, and examples from the raw data of this study to explore the role of both old knowledge or "farmer know-how" by Sardo-Modicna breeders and new knowledge or "schooled knowledge" by an expert as necessary means of persuasion to bring us back to our senses in a time of environmental uncertainty and food insecurity. In chapter 2, I explain by tracing the nearly 150 years of cultural practices by the Sardo-Modicana breeders. Cultural practices that have been orally transmitted and consequently what the breeders know is tacitly embedded in their bodies and not necessarily expressed through spoken language, or codified into a scientific text.

In chapter 3 I provide a methodology that extends the concept of rhetoric to understand that all forms of human activity are both inseparable from the wide socially constructed relations in which they are embedded and are largely unintelligible outside of the social purposes and conditions in which they are embedded. I utilize visual research methods with narrative inquiry to understand that caring for an 800 pound cow can be seen as a rhetorical activity.

In chapter 4, I share an impressionistic narrative constructed with the voices of Sardo-Modicana breeders as they help us understand the meaning of their world. A conclusion ends their narrative discussing what I found and how my findings might impact future work in our field and in agricultural studies.

In chapter 5, I provide deleted visual scenes with a reflective essay explaining what I learned as a visual researcher and how that impacts my role as a professional communicator. Specifically this chapter provides evidence that a documentary video toolkit enlarges an emic perspective of situated practices, grounded in local knowledge, that necessarily serves the interests of scientific research.

## 1.2 Questions Guiding my Journey

These questions guided my journey and helped me do two things, 1) they allowed me to understand how knowledge was communicated and 2) they allowed me to "see" rhetorically during field work. What are the cultural processes informing the Sardo-Modicana breeder's knowledge system? What texts or documents do the breeders read? What policies or governance do breeders "live by?" Where do I see human nature/animal relationships? Where and how do breeders learn? Where and with whom do breeders communicate?

## 1.3 A Personal Experience with Distributed Cognition

It gives me great pleasure to recount this story and an anecdote familiar to descendants of Italian immigrant families. This story takes place in the burgeoning suburbs outside of Detroit in the 1960s. The heroine is Pasqualina. Both my paternal and maternal grandparents were European peasants. In particular my paternal grandmother Pasqualina had the ability to identify wild herbs and was always prepared to forage for them at any given opportunity. In her purse, she would carry a small pare knife and brown paper bag. "Grandma" would forage for the fresh young green tendrils of chicory in early spring. In her housedress and slippers, she would graze in the back yard of our suburban home. From her near six-foot vantage point, she could detect chicory from dandelion, something I still cannot discern until the plants have flowered and the tough leaves become inedible.

Even from a moving car she could see the chicory sprouting. On one occasion I recall, we were driving past the swank Somerset Mall. When it was only my father driving, she would sit in the front seat and the kids were restrained to the back seat-—before seat-belts were mandatory. Grandma had just divided a piece of Wrigley spearmint gum into thirds and handed them back for the three of us to share. As I was savoring the moments of freshness, my grandmother called out to my father, "Johnny, Johnny stop the car!" My dad did not have to ask for an explanation; the last snows had melted, and he knew she was equipped with her

mundane technology. We stopped and she got out of the car in her blue with yellow polka dot housedress. My pleasure collided with horror. With ease she negotiated across the sidewalk to the edge of a perfectly manicured green patch and an odd clump of weeds where the cement met the grass. With knife in hand, she bent over, exposing stockings rolled and fastened just above her knees with an added few inches of fleshy thighs. Mortified, I slid to the floor of the back seat in fear one of my schoolmates would pass by at precisely that moment. Naturally she was anticipating the forthcoming meal of fresh greens doused in vinegar and olive oil with a pinch of salt and topped with slivers of hard-boiled eggs.

Like immigrants before her, Grandma took refuge in newfound American bounty. Here there was enough food for her to never feel the pangs of hunger she experienced in Italy, yet she never lost her appetite for flavors and an appreciation for tastes she cultivated in her homeland. My grandmother's homeland is the region of Piemonte in northwest Italy. The rolling countryside is punctuated with vineyards producing the noted Barbera, Nebolia and Barberesco grapes. Not until I researched and explored the keyword "ecology" for this project did I learn that the Mediterranean basin is one of five ecosystems that comprise the Mediterranean-climate regions of the world. The other four are California, central Chile, the Cape Region of South Africa and south and southwestern Australia. I mention this as a way to introduce the notion of "immaterial material" uncovered in this dissertation, in particular the intermingling of emotions and sensual experiences (Highmore 141).

In 2008, while working on the documentary project, "People Sustaining the Land" I found myself in a California vineyard in Sonoma County. I had wandered from the tasting room and tourist buses to a backfield where seasonal workers were realigning the grapevines. I wasn't taking pictures, and I wasn't thinking about the interview I had scheduled for later that day. I was taking in the warmth of the morning sun and the comforting fall colors constructing an impressionistic landscape. I wasn't focusing on anything in particular when sud-

denly a wave of emotion pulsed through my body. As tears welled up in my eyes, I was taken by surprise with the impression of my grandmother. I couldn't hear her voice nor see her, but I sensed her. I can't rationally explain what happened. I hadn't been talking about her or thinking about her, and it was too early for a glass of local Sangiovese. The impression never left me, but it never reappeared during a conscious moment to ponder—that is until I returned to the village where my grandmother was born in 2001. Then I understood. The climate, particularly the quality of the air and light in Sonoma wine country is similar to that in the Piamontese wine country. And now, as I write about my research in Sardinia, I am reminded of the feeling of comfort I felt for the duration of fieldwork. Could the knowledge of particular places be embodied and expressed intergenerationally? With respect to the vitally important but ordinary activity of food production and consumption, the embodied knowledge work of my grandmother as she foraged across the land or as she took over a kitchen to make time-honored meals was inculcated in me at an impressionable age.

### 1.4 Leaving my Homeland: the Learner's Journey

I recall always having a camera close at hand from the time I was a high school student. Soon after graduating, I began exploring my world through black and white photography. Taking pictures developed my ability to see social conditions and cultural practices, but I never entertained the idea of focusing my camera on farmers until I was enrolled in a master's program in documentary photography at Illinois State University. I was encouraged by the sociologist Barbara Hyle to document the social and economic changes occurring in rural central Illinois. She instilled in me the skill to actively listen. With this new understanding of how to "be in the world," I set out to talk to third and fourth generation dairy farmers about the loss of their farms and way of life. Seemingly, agriculture chose me, because, since 1988 I have devoted my research interests to farmer "know-how" or the why and how farmers do what they do.

I began my craft as a documentary photographer before the digital age, hence the pen or pencil was my chosen tool accompanied by a 35 mm Leica camera. I consider myself following in the steps of Dorothea Lange and Paul Taylor who were the first photographers to prove the value of this "photographic work for social research" (Finnegan 96). Above all, I do not view the visual image as an illustration "detailing anthropometric measurements and classification" that eventually is archived for future research, but rather I view the visual image as the extension of sight that is shaped linguistically and culturally (Harrison 90). There is far more to seeing than that which meets the eye.

I am a seasoned visual researcher. I acknowledge my intellectual debt to a particular group of scholars who recognize the usefulness of new digital technologies, in particular, Doug Harper who introduced me to the work of visual ethnographers and rural sociologists at the 1988 International Rural Sociology Conference in Bologna, Italy. Rooted in what Denzin and Lincoln have termed the eighth and ninth moments of qualitative research are others such as Pink, Alfonso, Ramos, Silva and Pink, Ruby, and Becker.

My interest in farmer "know how" is informed by what is characterized as "farmer knowledge in local cultures" by scholarship in rural sociology (Kloppenberg, Flora). In particular, John Kloppenberg who (1991) explored the significance of local knowledge in constructing opportunities for an alternative agriculture. Cornelia Flora added to this discussion by acknowledging other ways of knowing, specifically feminist scholarship which brings with it a commitment to activist social change. For scholars and researchers working in the land grant college system, their contributions are a foundation for reframing scientific research and the role of extension educators. Their landmark efforts in deconstructing conventional modes of agriculture and food supply chains influenced my work. Thus I characterize farmer "know-how" as ways of knowing founded in activities of livelihood that make a place of the land they inhabit (Ingold 2000). This farmer knowledge is transmitted from gen-

eration to generation and grounded in a series of rules of thumb which are arrived at through a process of trial and error. Such knowledge production is a complex cultural process of social negotiation involving multiple actors and intricate power relations. Thus farmer knowledge is situated in a particular place and contextualized through multiple voices and diverse visions. Paying attention to such farmer knowledge in local cultures is essential for understanding complex issues related to the multifarious work of agricultural and economic development, which necessarily involve old knowledge or "farmer know-how" and new knowledge or "schooled knowledge" by an expert.

Since 1991, as an artist and independent scholar, I have traveled throughout America documenting farmers and ranchers as they advanced farming practices that focus on renewable agriculture and local food systems. I worked as a consultant with various non-profit community-based organizations with the objective of gathering empirical data to add support and dimension to the historical changes taking place in agriculture. In 1998, with the onset of digital media, I enhanced my storytelling approaches with a hand held video camera and set out to document American farm women. The 1981 text, *With These Hands* by Joan Jensen and the 1983 text, *Invisible Farmer: Women in Agricultural Production* by Carolyn Sachs are important studies from which I have drawn. Their text underscored the notion that "women are powerful allies in sustainable development because they most often guide efforts to secure water, food, fuel, education and healthcare for their families and communities."

My efforts culminated in documentary photography with a video project and traveling exhibition titled "Voices From American Farm Women," which was created in collaboration with community-based organizations in IA, MN, MI, and WI. Between 2002 and 2009 I overcame a research dilemma noted by Jay Ruby:

> Visual anthropologists main use of film has been what he calls cine field notes, because few anthropologists have formal training in film production. It is almost

> never presented in the public as part of the field-worker's 'publication'...Like written notes and photographs, fieldworkers discover upon their return that it is unprofitable to subject the footage to close and detailed analysis or to edit it into a finished film. (51-2)

I created four separate 20-40 minute videos from the primary data collected in this research. The narrative video stories represent the diversity of individual values, attitudes and knowledges of women who have chosen to make a living by forging a relationship with the land. They are farm wives and single women, blacks, Hispanics, Asians, Native Americans and EuroAmericans. A key point I learned from this project and prior to my studies at MSU is that people working or cultivating the land is fundamental to how human beings shape ecosystems. Correspondingly, I discovered in the field the differences between men's experiences and women's experiences and knowledge in relation to the environment are necessarily understood in work practices.

### 1.5 Leaving the Homeland: A Scholastic Journey

This study changed my life: seeing the community work of farm women's ideas converted into action energized me. It inspired me to look for ways I could contribute to my community. This is largely why I chose to pursue a PhD in Writing, Rhetoric and Cultural Studies. My studies at Michigan State University have taught me to think critically about culture, food, farming, and environmental issues as an interconnected discourse. Specifically, I learned from MSU anthropologist Ann Ferguson that without the inclusion of microlevel dimensions of household practices in development research, policies for alleviating poverty or promoting economic growth will be compromised. The knowledge I had acquired in the field during ethnographic learning resonated with coursework leading to a Graduate Specialization in Gender, Justice, and Environmental Change from MSU's Center for Gender in Global Context.

Ferguson draws from a feminist political ecology theory, and she believes that gendered dimensions cannot be neglected when developing a new paradigm of production that incorporates—for any given ecosystem and social group—cultural, ecological, and techno-economic factors into a strategy that is ecologically and culturally sustainable. Feminist political ecology (FPE) argues this point, that "human/environment interactions are socially constructed and specific to geographic and historical contexts. Therefore, women's knowledges and the gender division of labor are crucial in understanding environmental degradation and change" (Jarosz). Cultural geographer Robert Netting magnifies this functional relationship to theory:

> The farm household is a repository of ecological knowledge and specifically it is the farmer who makes the most effective use of resources is the one with specialized knowledge of the specific microenvironments of the farmland. When members of a household share a long attachment to a farm, the fund of ecological information so vital to the agricultural endeavor is transmitted through observation, imitation, and instruction that accompanies more general processes of socialization and enculturation in the family. (62)

"This analytical approach highlights the role of ideology, knowledge and labor processes in understanding development and environmental change" (Jarosz, Rocheleau, Thomas-Slayter, and Wangari). Consequently, combining the analytical approach of FPE with what Winkler refers to as the "professional sensitivity" of a farmer, it is possible to extend our cognitive mode of reading the landscape to appraise with selective embodied sensory perceptions (5). In the case of the Sardo-Modicana breeder, an example of heightened sensory awareness to the natural world can be recognized in his or her ability to make meaning in different appearances of pastures, different tastes of cheese produced from cows grazing in those pastures, and different textures of meat determined by the nature of forage the

cattle eat.

### 1.5.1 Situating Myself in the Field of Rhetoric and Professional Communication

My interests in "everyday practices" are visible in the disciplinary conversation in rhetoric and professional communication. Rhetoric and professional communication researchers have always been interested in the relationship between knowledge and communication, particularly in relation to groups and organizations. Furthermore, as our field presses forward to shape communication in the public arena, professional communication researchers are well suited to explore the phenomena of embodied farmer knowledge in local cultures. In my study, discourse as a key analytic of complex social systems allows me both to associate myself with a tradition of rhetorical studies and to separate myself with an emerging body of scholarship and research in an effort to strengthen our disciplines' understanding and practice of scientific, technical, and professional communication.

### 1.5.2 Theories of Communication

How "communication" and "knowledge" are understood varies. For instance, in industry practices, professional communication practitioners often see information situated as somehow context-free and objective, for example, where knowledge is reduced to information traveling through channels of transmission, (Shannon and Weaver, Mcquail and Windahl, Tushman and Nadler, Rogers, Conners), and translation (Allen, Hall, Souther, Vaughn). Shannon and Weaver are well known for developing a model of communication that leads to the redundancy of language. From a technical perspective, the transmission mechanism is a significant means to increase the speed and effect of the message. In contrast to this highly mechanistic model that separates the role of sender and receiver, the translation model of communication acknowledges the relationship between the sender and receiver. The role of the sender is to gather information from outside sources and translate the information into an understandable message the receiver can synthesize and apply specifically in research and

development. The role of the translator must take into account her audience, and thus a reciprocal relationship is established through a feedback loop. For some, this relationship is understood as articulation or the flow of technological data through an individual (Tushman and Nadler, Fisher). Other researchers have focused their inquiries on concepts like communities of practice which extend beyond the individual to build upon the concept that knowledge is situated and socially constructed. Still other approaches have continued reconfiguration of our fields' focus on studies of workplace culture within discrete organizations (Porter, Sullivan, Blythe, Grabill, and Miles) to networks of institutions (Britt, Grabill, and Sauer), while taking into account the sociocultural contexts within communicative practices. These scholars recognize the role of a professional communication practitioner as an active agent in the process of knowledge construction and the communications that occurs within that context.

The research I am undertaking in rhetoric and professional communications attends to an overlooked domain: agriculture and food studies. It also extends the scope of existing ethnographic studies representing the practice of cultural rhetoric to include Cintron's critical ethnography of gang life, Lindquest's linguistic ethnography of the working-class, Stewart's language and images of West Virginia coal camps, Basso's exploration of Apache place-worlds and Sauer's discourse study of the embodied sensory knowledge of coal miners. In particular, field research has constituted the theory and focus of technical communication research to study nonacademic texts in naturalistic settings such as the workplace and the public sphere.

### 1.5.3 Humanistic Reform in Professional Communication Research

I sit here now, composing a dissertation on the embodied sensory knowledge dynamics communicated among the Sardo-Modicana breeders in Sardinia; I am still struggling to write myself in as a member of this discourse community. I can't imagine empirical research in a classroom and what cows have to do with text. My background compounds this problem.

I am the granddaughter of an immigrant peasant who relied on her sensory perceptions to make sense of her world and never spoke fluent English, let alone learned to write it. As a visual artist compelled to use words instead of images in meaning-making, I have struggled to learn how to write for the academy. My visual perception is far stronger that my oral skills; in fact, I would say my brain is hard-wired for visual perception because of my peasant genealogy. This sense of not belonging is compounded with a sense that I am an illiterate outsider. It is said that a new learner draws from previously acquired frames of references, and, in my case, there wasn't much to draw from. I never studied English or literary criticism, failed at English grammar, and after focusing my undergraduate studies in the human sciences, I devoted nearly 30 years of my professional life to being a dental hygienist. The medical field does ask for patient narratives, but in the end most inscriptions are in truncated or coded language. You can imagine my conversations were rather one-sided. Consequently I did a good deal of day-dreaming, which comforted me while I was "down in the mouth" and ultimately led me to pursue a Master's in documentary photography. At MSU, people around me entertained thoughts that I had a learning disorder, but I am convinced the combination of menopause and my home languages—broken English and the visual—slowed down my ability to learn how to insinuate myself into a new discourse community. Furthermore, a long time ago, I swore I would never become a heady academic with my thoughts engaged in theory—let alone French theory. I believe that attitude hurt me. Unconsciously, I constructed cognitive barriers that took a good deal of energy to dissolve. It is for all of these reasons that I spent a good part of my academic studies in Rhetoric and Writing wondering how I could possibly fit into a field that studies completed texts in nonacademic settings or the writing of texts in an academic setting!

In the field, when I am asked how my work is related to rhetoric and writing or how is it that I identify myself with business, technical and professional communications, I fumble

for an answer while I conjure up a socially situated response drawn from the Greek's notion of applied rhetorics. That gets me off the hook but does little for the survival of the field in the form of leadership and better paying jobs (Scribner and Cole). I have searched and researched to finally understand we have a varied research and scholarship tradition of ethnographic inquiry that allows the move to study the mundane or things belonging to the earthly world with the goal of understanding how texts and communication practices function in addressing controversies and a range of social-cultural issues such as this study about Sardo-Modicana breeders (Rude).

The question of impact and influence on the human condition are looming questions for future research in the public arena, and it is here, among the growing number of scholarly works, that I place this study. There are a handful of scholars I will work with to help me direct our field into the future. I will draw specifically from Doheny-Farina, Killingsworth and Steffens, Winsor, Blythe, Grabill and Riley, Propen and Schuster, Teston, Rivers, and Sauer.

What all of the scholars mentioned above have in common is their commitment to a humanist reform in the field of business, technical and professional communications. Many of the scholars manifest their commitment to humanistic reform vis-a-vis in situ research interests that makes affordances for work in the public sphere. Empirical field research, or what is called field-based research by Winsor, requires extended presence in the site of activity so the researcher grows to understand, by participation and observation, "rhetoric in action". In the early years, implications for theory building were still being drawn from rhetoric scholarship standardized by Flower and Hayes, Bizzell, and Cooper and Holzman who understood writing and cognition as complex but less than fully integrated activities. Nevertheless, Doheny-Farina was one of the first to dispel the long held unhealthy notion of the transmission model of communication set forth by Shannon and Weaver. Through participation and obser-

vation, Doheny-Farina set out to answer the emerging questions in the field regarding the way texts are written: (1) how are writers' conceptions of rhetorical situations formulated over time and (2) how do writers' perceptions of their social and organizational contexts influence the formulation of these conceptions of rhetorical situations?

Doheny-Farina's theory, which asserts writing is a social process, is drawn from Brazerman, Selzer and Odell who situate the notion of invention in the center of writing non-academic texts. This move is a critical stance for our field which previously studied completed text while continuing to have "reason to believe" that composing is a fully social and situated phenomenon (Odell 249-250). Consequently, by foregrounding social invention within the organizational context, many types of social interactions were privileged such as face-to-face dialogue, formal and informal meetings, brainstorming sessions, phone conversations, etc. Doheny-Farina identified five key informants and collected data in four ways: fields notes, tape recorded meetings, open-ended interviews, and discourse-based interviews. In a necessary first step, Doheny-Farina provides a model for the relationship between writing and the evolution of an organization and consequently the importance of addressing the unrecognized and unseen process of writing nonacademic texts. The implications from the findings of this research suggest "research should follow the completed text, examining how it is disseminated, who has access to it, who reads it and who doesn't, what is read, what actions people take upon reading it, and how it influences subsequent texts" (Doheny-Farina 182). Such an understanding for social invention with the attention towards the unseen processes of writing text outside of the academy extended the field of rhetoric and professional communication's influence into the public sphere.

Doheny-Farina's 1986 article "Writing in an Emerging Organization: An Ethnographic Study" provides a reference point for "following the completed text" in scholarship taken up by Killingsworth and Steffens, Teston, Propen and Schuster, Blythe, Grabill and Ri-

ley, and Winsor. Before teasing out the major concerns of each study and their common threads, I want to foreground a move by Winsor who brings to light sociologist John Law's assertion that "text are tools for ordering reality…(therefore)…text carries with it the potential for both modifying and maintaining cultural patterns" (qtd. in Winsor 2004). Law's notion on the role of text when aligned with Winsor's notion of knowledge work in terms of distributed cognition makes affordances for this study which is "to see the cultural practices of knowing," that in the case of the Sardo-Modicana breeders, is a stable knowledge system sustained over generations. Winsor asserts in the 2001 article, "Learning to do knowledge work in systems of distributed cognition" that:

> Although she cannot prove it, distributed cognition is the rule rather than the exception in human activity. Therefore, thinking is not treated as an action that takes place wholly inside an individual's head but rather as an activity that is distributed among the individual, other people, the physical environment, and the tools the person uses, including language and text. (6)

In this "writing in workplace" study, Winsor interviews, observes and shadows six engineering students to understand how newcomers enter into ways of learning among employees in a private engineering development facility (346). She loosely determined four categories where learning was observed to include: formal training, mentoring, hands-on learning, and "fiddling around" (349). Winsor, by making the observation of organizations in which knowledge is unstable, illuminates that when learning takes place on a daily basis, it is synonymous with change, and, moreover, learning is accomplished not just by mental activity but also by physical and social experience. My introduction by Dr. Blythe to Winsor's discussion about modes of learning in unstable knowledge systems helped me "see" how text is an operational force in this study.

Winsor helps us discern our humanness or what it takes to be human by assigning

agency to the material world of nature, technology, and other material tools, including texts. Winsor's scholarly contributions to the field since 1997 set an invigorating and a rigorous path for us to follow. Never straying from the field of rhetorics, Winsor has complemented her work drawing from posthumanist theories such as distributed cognition (Winsor 2007), activity theory (Winsor 1999), and actor network theory (Winsor 2006). Winsor's use of posthumanist theories allowed her to revolutionize the "fundamental tenants of the field" which, until Winsor, understood writing-as-a-product rather than writing-as-a-process. Complementing rhetoric with post-humanist theories afforded the field to make visible the overlooked, the unseen, and the mundane when observing social practices in situ by a careful observer, such as composing. With this new appreciation for finding where the human action is in field-based research, Winsor set out to (1) build upon the wide acceptance of the social perspective on composing as well as (2) gain more knowledge about composing in nonacademic contexts and (3) expand the disciplinary notions of what counts as writing.

Winsor's understanding for social invention deepens our field's appreciation for the interaction of multiple symbolic systems constructing knowledge and specifically in the consideration of whose cultural practices are considered when genred texts are composed. Attention to "following the completed text" in scholarship that explores the impact of text on the human condition are extended by Killingsworth and Steffens and discussed in their 1989 article "Effectiveness in the Environmental Impact Statement: A Study in Public Rhetoric," and Teston's project discussed in the 2009 article "Deliberations: A Grounded Investigation of Genred Guidelines in Cancer Care."

Killingsworth and Steffens focus their concern on the environmental impact statement (EIS), a text created by the National Environmental Policy Act in 1969. Killingsworth and Steffens built a case study based upon a number of EISs developed for projects addressing ranch-land use in central New Mexico. With an interest in answering the question "Is this

document effective?" the authors extend the "action forcing interpretation" notion of documents by drawing upon genre theory taken up by Carol Miller (qtd. in Killingsworth 176). Miller asserts, "Genres can serve both as an index to cultural patterns and as tools for exploring the achievements of particular speakers and writers" (qtd. in Killingsworth 165). In the end, the authors assert the document is not effective because one of "the major environmental, economic and social concerns addressed—the leasing of public land for private cattle grazing—reduces the language talking about human resources to the productive functions" of human-beings (Killingsworth and Steffens 164). The cultural patterns of the livestock owners were never considered in this text, and, furthermore, the purpose of the text was obscured by the choice of language: inactive syntax. The choice of language becomes a critical objective when striving to narrow the gap between the arts and the humanities on the one hand and the natural sciences on the other. Moreover, choice of language representing the end-user is a concern for any discipline making interpretations in a time when the loss of biodiversity is related to the loss of cultural and linguistic diversity.

Teston follows Killingsworth and Steffens to investigate how genred, generalizable guidelines in the Standard of Care documents afforded decision-making amid uncertainty in the medical workplace environment. Derived from field-based research, Teston explores how medical experts from various specialties collaboratively deliberate about future actions for a recovering breast cancer patient who has subsequently been diagnosed with a brain mass. In this study, the audience is a patient and the question explored is this: to what extent is patient care considered while doctors maintain work practices according to textual guidelines? Teston observed verbal exchange and applied grounded theory as an observational heuristic to determine that the experience of the patient is not linked with the professional guidelines of how the doctors are to act when considering the care of patients. In conclusion, Teston, like Killingsworth and Steffens, raise the question, "How can a genred set of generalized,

standardized guidelines bridge the gap between personal experiences and professional expectations?" (345). Both studies and their respective authors help me think about the impact of text on sociocultural and biophysical practices within the human/environment relationship.

Winsor's belief for the complex interactions among brain, body and world invites the following scholars to address the "action forcing nature of text" in the public sphere (qtd. in Killingsworth 176). The following two studies provide examples of scholars taking a consultant role within organizations, the first taken up by Propen and Schuster in the article, "Making Academic Work Advocacy Work" followed by Blythe, Grabill and Riley in the article "Action Research and Wicked Environmental Problems: Exploring Appropriate Roles for Researchers in Professional Communication."

Both studies consider text as an index to cultural patterns which are made evident in activities research when study results are shared with participants or citizens and when their participation or feedback is sought. The documents reviewed by Propen and Schuster were legislative statutes and sentencing guidelines for the purpose of understanding them within the victim's rights movement of which the work of the volunteer organization originates. The theoretical framework for this study drew upon Foucault and DeCerteau to engage the data collected through interviews and observations in interpreting technologies of power, strategies, and tactics. The researchers, by taking a participatory-like role in their project, were able to situate themselves on the same ground as the advocates and, therefore, through their interview and observation efforts, illuminate the legislative rights and limitations of public policy to the victims. The researchers found that direct involvement and subsequent interpretation of a community group can help an organization generate more widely distributed results and more culturally specific recommendations of such studies so that research participants can increase their understanding of each other and open up dialogue" (323). While Propen and Schuster do not express their research as action research or participatory re-

search, they have embraced the first steps to produce better generalized knowledge for fellow scholars. Propen and Schuster take into account their research findings and turn them back towards their students in business and technical communications as an understanding of advocacy work.

### 1.5.4 Professional Communication Work in Communities and Cultures

"Action" is the operative and interpretive theme addressed by Blythe, Grabill and Riley in their action research study in which they collaborate with citizens concerned with a local environmental conflict. Researchers Blyth and Grabill advise an organization's technical writer, Riley, to help him negotiate its communication practices with obvious stakeholders in the dredging of contaminated sediments from a shipping canal in Michigan. What sets Blythe and Grabill's research apart from the others discussed here is their intervention efforts—mere description alone functionally falls short of being useful to a community afflicted with public health risks that have been known to disrupt community cohesion and trust. In the role of consultant, the researchers engaged with community members to identify key research questions and formulate strategies for communicating the results of the study. The research questions asked reinforced the action goals of the project: 1. Who are the constituents in this community (around this project)? 2. How does this community (individuals and organizations) understand the project? 3. How does this community do research? 4. How does this community communicate? The researchers, Blythe and Grabill, consequently not only insinuated themselves into the community but more importantly built trust among the community members and across various community groups. Working out of an ethos of trust effectively facilitated the communicative work of the organization. The authors take time to carefully discuss various styles of participatory action research theories which in the end influences their attention to symmetry in the process of analysis.

The text of concern by Blythe and Grabill largely consisted of public documents from

the Corps of Engineers, the Environmental Protection Agency, and community organizations. In addition, the researchers attended public and organizational meetings and conducted interviews. The analysis of the data underwent a two-part coding scheme that would account for different kinds of rhetorical performances. This coding scheme helped to find trends within hundreds of pages of documents, reports, and newspaper accounts. Coding gave them a way to map the rhetorical substance of the documents and contested points between the Corps and citizens. The focus on text is meant to interpret the major findings in familiar rhetorical concepts—audience, genre, stasis, and invention as a way to articulate and to make meaning of rhetoric in action. Consequently, by framing in terms of rhetoric, a new meaning is placed on embodied practice. By engaging with the human aspects of this community, the researchers were able to co-create knowledge about specific socially constructed communication needs of the community. Ultimately Riley, a liaison between the community and the university, understood how to create written documents that served the communicative and inventional needs of the people.

### 1.5.5 Professional Communication work in Communities and Culture

I was influenced by Blythe's and Grabill's project, and in the initial phase of this study I focused on strategies used by the breeders to communicate their tacit knowledge with other breeders and with agriculturalists. While my work does not directly focus on risky environments, my focus on agriculture as a science, agriculture as technology, and agriculture as a practice recognizes the problem of communicating expert knowledge to lay audiences. In the company of the Sardo-Modicana breeders, as I participated and observed "rhetoric in action," I discovered the breeders rarely communicated with agriculturalist in the "outreach sense" we understand emanating from the land grant college. As I shifted my focus to the reality unfolding in the field, I drew upon Sauer's field-based research "Rhetorics of Risk."

Sauer interviewed miners in the United States, Great Britain, and South Africa during

a five-year period from 1992 to 1997 with a focus was on the mundane and unseen communicative practices of miners. Her analysis draws from (a) theoretical approaches to knowledge production to include risk and decision science, feminist theory, and rhetorical theory; and from (b) data generated from accident reports, preliminary accident reports, and depositions as well as formal and informal interviews of miners and experts representing industry and governmental organizations. Sauer's study extends our field's understanding and appreciation for "the paradox of standards and guidelines or in other words, the rhetorical tension between the assumptions implicit in generalizable guidelines and the actual user's unique individual experiences" (Teston 320) by exploring (1) the embodied sensory knowledge that workers need to make decisions about everyday risk and safety; and the (2) formal and informal communication practices in mines in order to understand why some documents might be said to "fail" in the context of risk. Just as scientific experts and safety engineers can prepare a general plan of procedures for workers to follow in the mines, so have social scientists created a code of practice prescribed by technical experts for breeders to follow in fattening their animals: "both breeders and mine workers must decide when and how to adapt these plans to unpredictable and uncertain local conditions" (Sauer 137). Similar to mine workers, the breeder's work and livelihoods are inherently situated in the natural elements under mercurial climate conditions managing up to 800 pounds of variable animal behaviors, the breeders must "observe, evaluate, and interpret rapidly changing sensory information" (Sauer 138).

What sets Sauer's work apart from the field-based research projects discussed earlier is her focus on a range of rhetorical practices in hazardous worksites that are guided by the following questions: What are the visible (visual and verbal) forms of communication in hazardous environments? To what extent do these forms provide readers with the information they need to assess and manage risk? What is the rhetorical function of these documents within large regulatory industries? What rhetorical strategies do individuals use when they

describe their observations and experience in these environments? What happens when writers attempt to document these observations and experiences in writing? What makes documentation so difficult? (Sauer 2003)

Consequently Sauer's guiding questions pose theoretical and methodological challenges with the following one aligning with my study: How do we discover the means of persuasion that are not recorded in writing, inscribed in textual practices, and authorized as conventional within the disciplines and institutions we choose to study? Accordingly, from a feminist theory, the same question would look like this: How do we make visible the silences or invisible knowledges that are not present in written texts? We can infer from the questions posed by Sauer that a reasonable method that would allow her to best pursue her inquiry would be visual. We know she employed visual research methods specifically to understand embodied sensory knowledge. In the end, her study led her to pose the following question: If embodied information is not present in written communication, we might ask where it is located? Furthermore, Sauer implies future research might describe those sources of information outside of text—such as gesture—where experts represent embodied sensory information not articulated in written text and procedures.

For this, it is evermore compelling for us in technical communications to reclaim our senses as a whole range of low-tech, meaning-making tool breeders innovate in their work environment. Sara Newman suggests continued scholarship "to restore life, movement and the body as substantive topics in rhetorical discussions" in her 2009 article "Gestural Enthymemes: Delivering Movement 18th and19th-Century Medical Images" (274). Her research takes up a renewed interest in delivery by focusing on movement through time vis-a-vis the microanalysis of "raw data" in medical images. Newman's renewed conversation on oral performances—and specifically the rhetor's interaction by means of sound, sight, movement, and sensory experiences with an audience, underscores the persuasive power of non-

verbal communication. Newman's project suggests a sophisticated analytical approach to cope with the notion of changing realities.

Like Sauer, I had to construct a framework for inquiry and documenting empirical data representing the embodied sensory knowledge of Sardo-Modicana breeders. Understanding embodied sensory knowledge in the public sphere first entails articulating a theory of knowledge. According to Sauer, "Knowing and recognizing involves differences in sensory and visual perceptions, differences in stance in relation to the environment and differences in the consequences that result from knowing" (161). Lyotard's notion of knowledge helped me grasp in a practical way, what Sauer asserts above, and from the time that I proposed this study in 2010, I have followed Lyotard hence I will completely quote:

> What is meant by the term knowledge is not only a set of denotative statements, far from it. It also includes notions of 'know how', 'knowing how to live', 'how to listen' (savoir faire, savoir-vivre, savoir-ecouter), etc. Knowledge then is a question of competence that goes beyond the simple determination and application of the criterion of truth, extending to the determination and application of criteria of efficiency (technical qualification), of justice and/or happiness (ethical wisdom), of the beauty of a sound or color (auditory and visual sensibility), etc. Understood in this way, knowledge is what makes someone capable of forming 'good' denotative utterances, but also 'good' prescriptive and 'good' evaluative utterances. It is not a competence relative to a particular class of statements (for example cognitive ones) to the exclusion of all others. On the contrary, it makes 'good' performances in relation to a variety of objects of discourse possible: objects to be known, decided on, evaluated, (22) transformed. From this derives one of the principal features of knowledge: it coincides with an extensive array of competence-building measures and is the only form embodied in a subject constituted by

> the various areas of competence composing it. The consensus that permits such knowledge to be circumscribed and makes it possible to distinguish one who knows from one who doesn't (the foreigner, the child) is what constitutes the culture of a people. (18-19)

Lyotard, Sauer and Newman's project carries even more weight when we support their thesis with Koning and Tabber's project published in the 2011 Educational Psychology Review "Facilitating Understanding of Movements in Dynamic Visualizations: an Embodied Perspective." The authors assert, "Watching another human perform a task is a form of observational learning, for which humans rely on the mirror neuron system. Rizzolatti and Craighero assert, "Observing someone else performing an action activates the same cortical circuits in the brain (i.e., the mirror neuron system) that are involved in executing that action oneself (qtd in Koning and Tabber 502). In the case of the Sardo-Modicana breeders, they have exercised their mirror neuron system across generations of distributed cognition. Let me underscore, their embodied sensory knowledge grows out of where and how their work is situated: in the natural elements under mercurial climate conditions managing up to 800 pounds of variable animal behaviors. If our minds are necessarily extended across cultures and environments through distributed cognition, then "the ability of technical communication researchers to document, describe, discern the operation and impact of environments," then we have a great deal to gain from this study (Winsor, Rivers).

### 1.5.6 Bodies, "Know-How" and Communication

Narrative inquiry is a relatively new approach in rhetoric and professional communications and one I believe researchers should consider in relation to visual research methods, as I have in this study. To wrestle with the intangibles of bodies, "know-how" and communication, I follow Smith who observed that narrative can be especially useful in environmental (and thus agricultural) discourse: "Through narrative, the sense of place can be evoked such

that those who do not share the relationship with the non-human world might come to an understanding of the experience and the values of the narrator" (63-64).

Both Sauer and Winsor utilize visual methods in field-based research for meaning-making in the empirical world: however, Winsor aligns her understanding of the visual with visual anthropologists Collier and Collier. It can be said the father and son team in their classic "Visual Anthropology: Photography as a Research Method" set precedence for which photographs could be treated as data: "Today visual researchers employ photography as a scientific research method. They have shown that prints, film, and video can be used effectively (1) to create cultural inventories, (2) as projective stimuli, that is, in photo elicitation, and (3) to examine social artifacts" (Heisley and Levy 259). Anthropologist Pink uses "visual methods paired with ethnography as a qualitative research method" (2001). To this point, I follow Pink and Riviera who document with photographs and video in the field to analyze data in conjunction with field notes. During analysis, this enables the researcher to view the content and analyze the meaning in its original enactment" (Riviera 2010).

Heisley and Levy's cultural inventories category is useful for the purpose of my study which is to make visible embodied sensory knowledge by documenting situated rhetorical performances that are nested in complex institutional discourses. Specifically, I will approach the field with attention towards the rhetorical dimensions of life, movement, and the body of the Sardo-Modicana breeders. My role as a participant witnessing in direct observation of the unseen activities of the breeders is "faithful to the original cinematic premises of observational cinema" (Carta 2012). This premise "stresses the corporeal interaction and collaborative presence of the filmmaker among subjects" (Carta 3-4). Ethnographer David MacDougall, a pioneer in observational cinema, stresses this participatory style which is quite personal and one I employ in this study. It is a fusion of techniques that takes in nonlinguistic modes of communication and is open to the improvisational emerging event. In the end I will

show the Sardo-Modicana breeders performing everyday life through the "development and execution of skills, ways of knowing, and ways of being" (McGill 393).

### 1.6 Walking with the Sardo-Modicana Breeders

In the study at hand, for the breeders and for myself, we used our "eyes as our guide in our examination of ideas in the aesthetic world" (Mearleu-Ponty). The breeders and cheese-makers in this dissertation project are "inventing new forms of dwelling and circulating" in a place: they are carefully negotiating "specific paths through modernity," and with my video camera I hope to trace their routes of multisensory knowing (Clifford, deCerteau). I moved across the Sardinian landscape, watching for the beast, the Sardo-Modicana. I walked at the same pace with the breeders, the subjects in my film and my companions in this journey. My attention was directed towards communication, the primary phenomena of the breeder's experience, and the representation of communication embodied in different symbolic forms to be the visual, the oral, and the corporeal (Pink 2001). Following are the individuals I met on this journey:

- Giovanni Mastinu, born in 1974, has embedded in his memory an intergenerational experience that relied on animal power for moving across the countryside. He said, "I would go to the country with my maternal grandfather when I was young. We carried the forage on the donkeys, and in the morning we carried the milk." Giovanni's mother, Piera, makes cheese.
- Celestino Illotti, a decade older, was born in 1961. After Celestino finished superior high school at the age of sixteen, he went to work with his father who had just acquired this breed. With a pension from driving a truck, Celestino's father wanted to change his life to be more healthy, to be more distinct. Celestino explains his training: "He put in my hands the responsibility of decisions, of the work and thus I gained experience." I consulted him and the rest of the village folks. Celestino's mother makes cheese.

- Francescu “Cecu” Cubeddu, born in 1953, has always lived in a family dedicated to country work. The part of his mother specialized in olives, and his paternal grandparents had an olive press. The part of his father were both breeders and farmers. As Cecu explains, “First we had the animals for work and they gave a little milk and a little cheese.” Cecu is Giovanni’s godfather.
- Rita Cubedda was born in 1953, and, with her sister Pinuccia, they worked on their uncle’s farm: “I always came to help my uncle, then...it was always ours. My uncle was born in 1905 and he did the work of his father. We went to help my father or my uncle.” Rita can remember her uncle loaning out the cows as recent as 25 or 30 years ago.
- Paolo Serru was born in 1944, moved to Belgium at the age of fifteen, and returned to Seneghe in 1976. At 13 Paolo had a brief experience worker for a Sardo-Modicana breeder which instilled in Paolo to dream to someday return to his homeland and raise his own herd. He purchased ten animals in 1976 and “went on from there.”
- Antonio “Antonicu” Ponti was born in 1938 and was one of the first breeders to go to the Modica region of Sicily to buy a Modicana bull. He and his brother Emilio carry on the traditions learned from their forefathers, and Emilio’s wife, Maddalena, make cheese.

Before I introduce you to the breeders in the composed narrative text of this dissertation, I will share with you in chapter 2, the historical, cultural and economic background research that was informed by the stories I gathered while working in the field. It can be said that chapter 2 was inspired by all the people I met in the research process and was generated through casual conversations as well as research of historical documents, scholarship, dissertations, formal reports, and a code of practice. The code of practice is a document created for the breeders, and in this narrative, takes the role of disrupting a stable knowledge system. In the end, I hope you are able to see what I saw: the Sardo-Modicana breeders communicating

what they know.

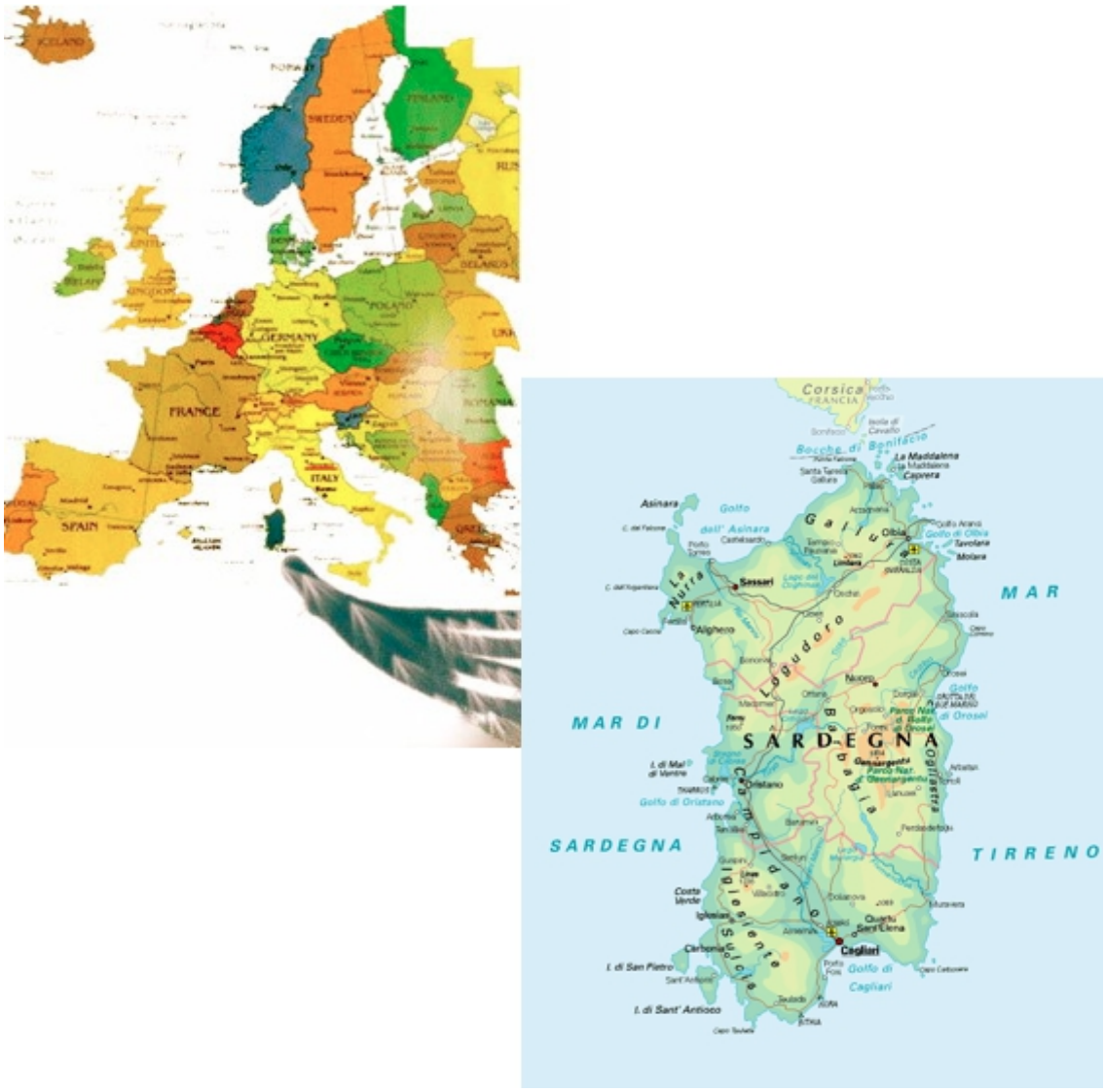
# CHAPTER 2

*The Landscape Tells a Story*

## 2.1 Looking for Sardinia

Anthropologist, Tim Ingold best characterizes what I hope this chapter will do which is to understand the territory of Montiferru as a place that is "pregnant with the past" (2000). "Indeed, for the Sardinian peoples, rocks are the primary symbolic source of memory" (Murgia) and represented today in jewelry made with Obsidian stones. The Montiferru territory where this case study takes place is situated between 40°00' and 40°15' N and 8°27' and 8°42' E and is made up of an extensive Plio-Pleistocenic volcanic district characterized by domes of acid lava, acid tephra, and basaltic plateaux. The reason I wish to foreground this notion is to situate the prehistory of the island and emphasize the relationships of indigenous and contemporary Sardinians to other peoples both near and far. I will begin with a discussion of the historical profile of Sardinia from an archeological perspective which allows me to construct a more nuanced understanding of where the powers might have emanated from and bring to light the historical treasures that constitute Sardinia's cultural heritage.

Many people ask me where Sardinia is located and to what country she belongs. Sardinia is the second largest island in the Mediterranean Sea situated to the west of the Italian peninsula and is believed to be the oldest remnant of an ancient submerged landmass of all Italy. The island covers about one twelfth of Italy's surface and is about 24, 090 sq km, resting at the 40th Parallel. With Corsica, and Sardinia's Maddalena archipelago and Asina Island, the islands lie on a meridianal line from the Gulf of Genoa to Africa. It has been determined that during the Cambrian period, there was a land bridge from Tuscany through the island of Alba (in the Tuscan archipelagos), Corsica and across the Bonifacio straits to Sar-




"For interpretation of the references to color in this and all other figures, the reader is referred to the electronic version of this dissertation)"

Text in maps is only for visual reference.

*Figure 1: The island of Sardinia and relative location in the Mediterranean Sea*

dinia. The significance of this relationship brings to bear the fluctuation of migration of animals and humans that ultimately were trapped on the island and impacted the genetic patrimony of species. With limited space, and food both animal and human, species tended to decrease in size. In the case of cattle, the indigenous breeds are small and in the case of humans I can say that the Sardinians are not Italian, but in fact a breed all of their own.

In this I will provide a brief historiography of Sardinia and its peoples. In the

following chapter section I will draw from scholars in archeology to explain beginning prehistoric cultures that shaped the Sardinian landscape. In section 2.3 and 2.4, I will continue with European continental cultures that have impacted specifically Sardinia's pastoral and rural life worlds, to conclude in sections 2.5-2.7 a description of the Montiferru territory where the Sardo-Modicana breeders reside and the place where multiple economic, environmental and human forces conspired to create the Association for the Preservation of the Sardo-Modicana breed, "Il Bue Rosso."

## 2.2 Constructing the Past from the Stories I Heard

What is of interest in this chapter is a historiography constructed from the stories I listened to throughout my fieldwork. I was inspired by the fragments of history contemporary Sardinians recount out of pride and love, for a place that has essentially remained pastoral over time. Ingold best characterizes what I have experienced with the Sardinian peoples, "for the native dweller, the landscape tells a story. It enfolds the lives and times of predecessors who, over the generations, have moved around in it and played their part in their formations" (152). A frequent story I was told, is one in which the Sardinians were subject to dominance. According to early archeological non-processual interpretations, explanations for cultural change emphasized the "intersection of invasion and resistance as central to the understanding of island history and prehistory" (Dyson and Roland).

As I became familiar with Sardinia's history, I often would account my understanding to the scholarship by Sardinia's archeologists to include Giovanni Spano (1803-78), followed by Filippo Vivanet, Giovani Pinza, Ettore Pais and the most important after Spano, Antonio Taramelli (1868-1939), and in the 20th century there was Giovanni Lulliu, Doro Levi, Massimo Pallotino, and Ranuccio Bianchi Bandinelli.

Occupation of the island by human beings clearly started in the Paleolithic. With the radiocarbon revolution it has been possible to date the early prehistoric cultures to about

6000BC or the Early Neolithic, and from traces of Obsidian at various sites in Sardinia, it is possible to see the presence of this culture into the Early Bronze and Iron Age. Obsidian, a shiny black volcanic stone, played an important role in shaping the cultures of Sardinian pre-history and in fostering the island's contact with the larger Mediterranean. The volcanic out-crops of Monte Arci on the gulf of Oristano and to the south west of the Montiferru region, is where the obsidian source was located. Obsidian origins can be traced by their physical and geological properties and it is through these means that Early Sardinian obsidian has been traced to Corsica, Liguria, Lombardy, and Provance. The use of obsidian by the indigenous population for tool manufacturing established early trade routes that marked webs of commu-nication and exchange for Sardinians well into the 21st century (Dyson and Roland), and in particular to the transformation of the Sardo-Modicana, a draft animal into Il Bue Rosso, a quality meat product.

Dyson and Roland explain that for long periods, Sardinia has been under the control of foreign powers with imperial succession from the sixth century Carthaginians to the for-mation of the modern Piedmontese state in the eighteenth century. Yet, from the post-colonial perspective we learn from the authors there was an indigenous Sardinian that had a dynamic cultural history before the colonists came on the scene. Living evidence of this can be heard in the Sardinian dialects, known as "su sardu." Su sardu, Sardinia's official language, pro-duces unique utterances indicating non Greek origins or Romance language constructs. "Each (of the approximately 370) "communi" (townships) is said to have its own dialect, with an in-flection, tone, and range of sounds said to be particular to the locality" (Vona). This case in point is even more nuanced. As mentioned by Vona, the vocabulary is exclusively rustic or rural based upon a pastoral and an agricultural way of life. I was told, and soon noted that the vocabulary of the Sardo-Modicana breeders in Seneghe varied from those in Santu Lus-surgiu, and from other villages in the Montiferru region. If the landscape tells a story, then

each Sardinian dialect represents a discourse with roots originating long before Christ.

### 2.3 Constructing the Past: Sardinia's Nuragic Culture

Besides Obsidian, another mental association of rocks by the Sardinians, in particular is the sophisticated stone structures representing the Nuragic culture. Radio-carbon dates suggest that the Nuragic culture emerged in the mid-late millennium BC (1500BC) and most importantly has forced scholars to acknowledge the "process of Nuragic architectural innovation and development was to a large degree an indigenous one" (Renfrew, Lilliu, Dyson and Roland). Unique to Mediterranean development, the Nuragic culture continued unbroken between the end of the Bronze Age and the establishment of the Iron Age indicated by Phoenician mined materials in Sardinia and Nuragic artifacts in the heart of the Etruscan metal-producing districts. Post-colonialist David Ridgeway has argued that "it seems increasingly possible that the earliest external and mutually beneficial assessment of the metallurgical potential of Villanovan Etruria was not planned in the Aegean or the East, but in the West itself and no further away than Sardinia" (quoted in Dyson & Roland 102). Sardinia's relationship with Tuscany remains strong. As we will learn, it was through cattle breeders from the Arezzo Provincial Associations of Farmers in Tuscany, that the Sardo-Modicana breeders learned about the cultural practice of feeding cereal grain to their animals.

The circular towers known as nuraghi remain a ubiquitous presence in the Sardinian landscape and no true Sardinian landscape is without the imposing profile of one of these structures. In its simplest form the nuraghe is a conical tower in megalithic masonry in granite and balsam (Levi 1943). The architecture of the Nuraghi evolved from single chambered towers first appearing around 1800 BC to complex fortresses around the fifth century BC. The continuous presence of Nuragic settlements over a period equivalent to 160 human generations further indicates the Nuragic peoples lifeways would have been a form of foraging and pastoralism. Nineteenth century field surveys indicate a mixed Nuragic pastoral-agricul-

*Figure 2: Nuraghe: a conical tower in megalithic masonry*

tural economy which supports Magliocco's assertion that three economic systems characterized the island lifestyle: the obsidian economy with the co-existence of pastoralism and agriculture (16). It is estimated that some 7,000-8,000 nuraghi still exist and are found both in the middle of fertile plains and rich pastures and on top of steep hills or dominating valleys and mountain passages. They are much more numerous in the central high area where the Montiferru region is located (Levi) and which is described as marginal for farming and today recognized as "less favored areas." During my introductory visit to Seneghe, as I met with two Seneghese residents, Tori Porcheddu and Cecu Cubeddu, our conversations about the Sardo-Modicana meandered among the visible objects across the landscape taking note of the nuraghe. With pride and continued curiosity of who the Nuragic peoples might have been, we entered a gated pasture and climbed atop a well intact structure. From our vantage point it

was implied by both men that an authentic story of the Sardo-Modicana would include reference to the Nuragic settlements in Sardinia.

## 2.4 Constructing the Past: Sardinia's Agricultural and Pastoral Economy

One of the principal cultural practices shaping the physical presence of the Sardinian countryside was the system of large landed estates, or latifundia. Unlike the Phoenicians whose interests were in trading raw materials, the Carthaginian domination of the Nuragic population in 520 BC was motivated by the desire to control the most productive agricultural lands. The Carthaginians and Punic patricians were first to establish a slave economy for furnishing large quotas of wheat and flax for the state, with a tolerance for a few indigenous landowners who could not be pacified (Levi). This form of large feudal states in Sardinia continued through the time of Spanish occupation when the island was ruled by the Spanish crown from 1323 until 1708. All of Sardinia knew a feudal system of government, jurisdiction and landed property (large feudal estates) in combination with a varied system of common rights of use on land (Cappai, Di Tucci, Masia, and Solmi). The general rule underlying common rights of land use was that membership of a rural township "communi" was the exclusive condition granting access to all the land inside a village territory, both common and private land, and feudal estates (Meloni 134). In practice this rule gave residents the unlimited right to pasture flocks, to maintain animals for work such as traction and hauling, to cultivate orchards and gardens and collect wood for fuel on all land in their village territory (Di Tucci, Le Lannou, Masia). Today these former laws of the commons are being studied by scholars at the University of Cagliari and University of Sassari as part of an overarching European Union plan for rural economic development.

During my first impressions of Sardinia, what struck me most was the "private landed property" which is made visible through stone field boundaries seen throughout the Montiferru region. What I learned months later was how the mosaic of stone bordered fields came to

be. When the island became part of the Kingdom of Piemonte (the region around Turin in northern Italy) in 1720 via the Treaty of London signed in 1718, the Piemontese rulers began to "modernize" the agricultural and pastoral economy. "The Piemontese rulers viewed the feudal organization of land-ownership inherited from the preceding Spanish period, and common access to land, as the main reasons for the 'backward' conditions" (Mientjes 81). Following the island's full federation with Piedmont in I848, and subsequent incorporation into unified Italy, the civil and criminal codes governing the mainland replaced Sardinia's jungle of rural codes, edicts and royal decrees (Moss 481). In the early 19th century a number of laws were established with one law, the "Editto della Chiudende" or law of enclosures "which gave individual citizens all over Sardinia the permission to appropriate plots of land and to enclose these inside the formerly common land and feudal estates within village territories" (Mientjes164).

Contemporary scholars before me have noted the land enclosures to be "especially in the uplands and mountains of central and northern Sardinia" (Angioni, Candinu & Sanna). It is hard to believe these stone formations have stayed intact through periods of colonization and modernization, but once we have a brief understanding of contemporary Sardinia, all of this will make sense. Equally significant, these circumscribed pieces of land have not been disrupted for modern agricultural expansion and today provide sheltered spaces for traditional animal husbandry practices.

### 2.5 Constructing the Past: Sardinia's Failed Policies and Geographic Isolation

Sardinia may be considered as one of the most peripheral and least favored areas in the European Union. Under the 1948 Constitution, the post-war Italian government granted Sardinia autonomy and recognized the island as a 'special statute region' within the Italian republic. To this position Sardinia has greater power and self-determination than 'ordinary statute regions'. It is to the island's regional authority, the Regione Sardegna, that Sardinia's

four provinces (Oristano, Nuoro, Sassari, Cagliari) and about 370 communes (cities, towns and villages) at the local level are subordinated. In short, it can be understood that the Montiferru territory is representative of islanders' strong expressions of regionalism (Hospers 629-631).

Just as the Montiferru is representative of a defined region within the province of Oristano, so is it also reflective of the islands unique geographical, historical, and socio-economic characteristics. The population density in Sardinia is low. The 1,7000,000 inhabitants are unevenly distributed over the island: 40% of the Sardinian peoples live in the urbanized zones of the north (Sassari) or near the island's capital Cagliari. The majority of economic activities take place in the coastal areas, while the interior of Sardinia is still relatively isolated. Sardinia's role in the modernization of the modern Italian nation has not always been easy. The rural island remains poor with high unemployment rates rising above 21% and relatively low per capita income at a level of 73% lower than the EU average. Like many of Europe's less favored regions, Sardinia does not have the preconditions that are needed for learning, innovation or growth as characterized in Italy's industrial districts such as Emelia-Romangna, Piemonte, or Lombardia.

Big business and policy-makers have regarded the peripheral island as a fertile ground for several experiments. One of the priorities of the post-war Italian government was to create opportunities for the country through public investment of national champions such as ENI (chemicals), EGAM (mining) and ITALSIDER (steel). During the 1960's and 1970's, large industrial complexes, varying from oil refineries, aluminum mines and chemical factories were established with the assumption they would set into motion a self-reinforcing process of regional economic development. From an economic perspective the heavy industries should bring wealth to the isolated island, but modernization was at odds with the local economic structure. Policy-makers totally ignored Sardinia's traditional agriculture base. For

many shepherds and farmers, the transition from working in the open air to the rigid rhythm of the factory work turned out to be a failure. Moreover, the industries that were thrown up "ex nihilo" in the island derived only a few raw materials from the region itself and hardly produced for the home market: almost 100% of the output was exported to the mainland of Italy (Bausenhart). The lack of embedment is suggested as of the industrial complexes mostly ended as "cattedrali nal deserto" (cathedrals in the desert), changing the islands landscape rather than it's economic structure (Bausenhart). The poor industrial performance of Sardinia only became worse during the oil and steel crisis in the 1970's. Almost all of these complexes are closed now and not only have they left scars on Sardinia's landscape but also on the cleanest beaches in Italy where the Phoenicians once traded with the Nuraghic peoples.

The failure of top down industrialization strategies is not only a problem of development plans gone awry, but has been attributed to a particular socio-economic backwardness that persists in other areas in the Mezzogiorno (Leonardi, Fohrer, Barca,). Sardinia traditionally has disposed of institutions which are not conducive to individual and collective action (Hospers). In his famous study on social norms in southern Italy, Banfield has referred to this poor institutional structure as 'amoral familism', i.e. the inability of people to work together for a common goal that is beyond the interest of their own family. According to Putnam et al the differentiation of these social norms—labeled as low levels of 'social capital'—is highly correlated with varying levels of performance in Italian regions. According to Putnam, social capital are "features of social organization, such as trust, norms, and networks that can improve the efficiency of society by facilitating coordinated actions" (Putnam et al 167). In an empirical study building on Putnam's work by Beugelsdijk and Van Schaik, the findings suggest Sardinia has the lowest scores on social capital in the form of mutual trust and active associational activity (Hospers 634).

Although Sardinia might still be characterized as a rather 'innovation adverse

society', as asserted by Rodriguez-Pose, in the 1990's more and more exceptions to this generalization have come, both in the island's cities and villages (Hospers). The recent developments in the field of innovation and entrepreneurship can be found in information technology, biotechnology, medical technology and local business start-ups in the tourism sector and local food networks. Because Sardinia's peoples and its culture has maintained a separate identity from "il Continente" (the European mainland), they have cultivated an expression of modern regionalism or what has been documented by Facaros and Pauls as the rediscovery of "Sardita" (Sardiness). In spite of the out-migration by young Sardinian peoples to the Italian mainland, those staying on the island along with the aging population are engaged in a growing interest to keep up their longstanding customs, traditions and languages. I hope this research contributes in some way to preserving the cultural heritage of the Sardo-Modicana breeders.

## 2.6 Constructing the Past: Sardinia's Montiferru Territory and the Sardo-Modicana

The Montiferru territory is approximately 60.5 km and is located in the Oristano province, where the upper slopes, called ''su Monte,'' (the mountain) reach a maximum elevation of 800 m. The major villages where Sardo-Modicana breeders live are Seneghe, Santu Lussurgiu, Bonarcado, Scano Monferrteu and Cuglieri. The total population of the Montiferru region is 15, 426 and the villages where Sardo-Modicana breeders live are Seneghe, with a population of 1,700; Santu Lussurgiu with a population of 2,704; Bonarcado, with a population of 1,691; Scano Di Montiferro with a population of 1,798; and Cuglieri with a population of 3,132. This study will concentrate on Seneghe, a village north of the provincial capital Oristano, and located on the southern lower slope of Montiferru. The total area of the Seneghe township is approximately 5,800 ha (Brundu). At 350 m above sea level, the township overlooks the Campidano plain and the gulf of Oristano, and faces Mounts Arci and Grighini with a further view to the Gennargentu mountain summits (Scotti and Cadoni).

The mistral, the dominant wind, is a strong, cold and usually dry northwest air that is fresh and strong in winter and in summer mitigates the climate making the air dry and breathing difficult. The levanter winds are most frequent during the warm season from May through October and move from east to west. The Sirocco winds arise from a warm, dry, tropical air mass that is pulled northward by low-pressure cells moving eastward across the Mediterranean Sea, with the wind originating in the Arabian or Sahara deserts. Sirocco winds which can reach speeds of up to 100 kilometers per hour are most common during the autumn and the spring. They reach a peak in March and in November when it is very hot, with a


Text in map is only for visual reference.

*Figure 3: The Montiferru territory*

maximum speed of about 100 km/h (55 knots). The mean annual temperature ranges from 14.2°C of the highest part of the mountain to 17.3°C in the lowest. What are the summer temperatures, can reach into the high of 30°C. Mean annual rainfall in the area varies from 1,001 mm of the highest part of the mountain to 527 mm of the lowest. Vegetation in the area is related to the altitude. Above 900 m, the vegetation is mainly composed of grass species and low macchia (scrub). Between 900 and 600 m, natural and seminatural woods and macchia (scrub) are present. Below 600 m, vegetation is mainly composed by natural grasses and degraded macchia.

*Figure 4: Eleonora D'Arborea*

The Montiferru territory is poorly suited for most crops although there is a thriving olive oil cooperative in Seneghe and many breeders maintain vineyards for their own wine consumption. Grazing of sheep and cattle is practiced today over most (900 ha) of the mountain territory, a tradition that can be traced back to the Giudicati era (900–1400 A.D.). The "Carta de Logu" (D'Arborea), a collection of written laws published around 1392 by Eleonora D'Arborea, head (Giudice) of the "Giudicato di A'rborea" (today's Oristano prov-

ince), documents collective land use rights that were well established at the time. While people in Seneghe proudly recount tales of Eleonora hunting in the mountain territory, I muse about a woman who instinctively understood feminist political ecology.

When I discovered this fascinating piece of Sardinian history, Maddelena and her daughters were very pleased with me and one of her daughters, Rosi, leant me the “Carta de Logu” to read. Seneghe was part of this Giudicato; on the ‘‘su Monte’’ (the mountain) horses and cattle belonging to the Giudice were foddered, while the people of Seneghe could exercise their rights of grazing, fire woodcutting, wood gathering and hunting. These rights, exercised through the centuries to the present days, are deeply rooted in the culture of the people of Seneghe. The strong feelings connecting the village with the woodland are expressed by the popular saying ‘‘su Monte est su nostru:’’ ‘‘Lands and woods in the upper part of the mountain are our (common) possession’’ (Scotti) It is here, in the spring, where the Sardo-Modicana graze.

Text in figure is only for visual reference.

*Figure 5: The "Carta de logu"*

Despite these constraints, the territory is known as the breeding ground for the Sardo-Modicana where the land has remained a space for pasture grazing and forage methods necessary for maintaining the domesticated breed since the 1800's. Rocks of every size to boulders in strange shapes can be seen in any direction as the eyes meet the landscape. Sarda, the original bovine race populating the island was unable to work the heavy terrain that was to be cultivated for Sardinia's burgeoning wheat industry. The breeders eager to exploit the growing cereal grain markets experimented with crossing the Sarda with races from the continent to include Maremmana, Romagnola, Marchigiana and Chianina, but the Modicana bull from Sicily proved to be the best animal to fulfill the economic function the breeders and farmers were striving for.

The Muscus family of Santu Lussurgiu was one of the first to import to Monteferru the steers which resemble adult rhinoceros ambling across the uneven landscape. Prized for both it's beauty and strength, the beast proved to endure long hours of work across the Campiddani plain region that spans from the central west coast to the southern east coast of the island and the rugged uplands of the Iglesias located south and west of the Campiddani. Through innovation, many farmers became breeders of the Sardo-Modicana which proved to systemize the production of grain to include the aeration of land, cultivation of land and exportation of grain to the markets. Further-more, the importance of the new breed provided "triple action" as an animal for traction, as a savory beef meat, and as a seasonal raw milk cheese. At this time Montiferru was known as the traditional reproduction region with 60,000 head or 70% of the bovine in the province of Oristano.

Between 1950 and 1955, Sardinians began to experience the increased mechanization of agriculture, and in 1966 the number of animals had decreased to about 33,000. Since 1975 the animal continued to diminish across the Sardinian landscape with fewer than 2,000 remaining in the Montiferru region in the 1990s. There have been crossbreeding efforts to cre-

ate an “industrial” cross with “meat bull” by experimenting with the Bruna Alpina between 1950 to 1975 and the Charollaise from 1975 and beyond. These breeds are considered less rustic and to produce a carcass more suitable for meat consumption by 21st century consumers.

Despite the poor economic performance many breeders continue to breed and sell the Sardo-Modicana in pairs for folklorist events, such as Sardinia’s “national religious” holiday, the “Sagra di Sant’Efisio” on May 1st. In 2009, with the commemoration of the 352nd edition of this religious event, UNESCO announced the major spring folklore event is under consideration to protect the “patrimonio immateriale dell’Umanita” or “intangible cultural heritage” of this event. (Garon 3)

*Figure 6: A pair of Sardo-Modicana during Sagra di Sant’Efisio*

While the importance of the enormous physical strength of the Modicana characteristics have fallen out of favor, there is a conviction that the rustic qualities and more importantly the extreme maternal faculties of the Sarda is the most important characteristic to be valorized. In 1987, the Autonomous Region of Sardinia with The Regional Breeders of Sar-

dinian Italian Breeders' Society (Associazione Regionale Allevatori della Sardegna), passed the decree #30/87 and #17/SI/87 to record all births of the Sardo-Modicana, the Modicana, and the Sarda in an attempt to avert the complete loss of the breeds. This was an important policy effort at a regional level to safeguard its genetic heritage of an endangered breed. In June 7, 1991, the Ministry of Agriculture and Forestry followed this initiative and presented to the Italian Association of Breeders a proposal to institutionalize the value of the bred, which was approved on December 29, 1995.

### 2.7 Envisioning the Future: Montiferru and the EU Common Agricultural Policy

In this section I will characterize the types of institutions and social organizations at national regions and local levels that collaborated with the Sardo-Modicana breeders and how they motivated the breeders to create the Association for the Preservation of the Sardo-Modicana breed, "Il Bue Rosso."

European agricultural and rural development policy is moving from the previously dominant standard model of agricultural modernisation to a development model that guarantees planning for territorial livelihoods and landscape from an agroecology perspective. In other words, food supply chains associated with the growing concern for safety and health for humans and the environment which are embedded in local and regional development policy structures are a growing policy interest. During the 1990's the EU Common Agricultural Policy (CAP) provided resources that directly supported Sardinia's transition from an industrialized market agrarianism by providing incentives for local bottom-up, cooperative, and network approaches relating to rural development to address the new agricultural agenda. To negotiate through what has been a contested policy arena, the European Commission established the LEADER program in 1991 as a pilot initiative to stimulate innovative approaches to rural development at the local level in territories of less than 100,000 population. The LEADER acronym was taken from the French title 'Liaisons Entre Actions de Développment

de l'Economie Rurale' translated as 'Links between actions for the development of the rural economy' (European Commission 1999). The LEADER programme was first announced by the Commission on 19 March 1991, which introduced the concept and practice of 'Community initiatives' (Bryden). Community initiatives enabled the Commission to allocate funds of particular interest to the Community (ibid, 6). There were three LEADER initiatives between 1991-2006, respectively identified as LEADER I, II, and + (Clappison 60). It is within this political framework, the reform of rural and agricultural policies, the Sardo-Modicana breeders entered into a new form of market orientation.

In 1996 or 1997 (dates vary across documents), the Local Action Group (LAG) in the Montiferru, Barigadu, and Sinis (MBS) regions became a testing ground for a community initiative supported by LEADER II and Leader + funding. Specifically on October 22, 1996, the Local Action Group (LAG) Montiferru was initiated with the objective of facilitating a territorial project that was to help local stakeholders overcome a strong sense of individuality, recover local know-how, and provide technical support to municipalities that have experienced high levels of out-migration. "Specifically, the LAG MBS plan contributed to:

- increase the productivity of the agro-animal technology sector that occupies 31% of the active population;
- give back trust to the population with visible interventions/actions, to help them create job opportunities and earnings within the territory, starting from the under-valued or
- abandoned local resources;
- respond to the desires of the population of Montiferru to improve the quality of their own health, security, personal self-improvement and free time.

The improvement of the quality of life of our rural population means according to Guarino, "to improve the quality and social relations between towns, facilitate access to information and learning, bring the availability of services (transportation, social action, health, shops,

and recreational activities) up to the level of urban areas" (116).

In reality the knowledge and the skills necessary to commercially produce two of the region's cheese products were rekindled. The cheese derived from sheep, Fiore Sardo and that derived from cows. According to the post evaluation of community initiative LEADER II by Carlo Ricci, the operative objective of the two projects was the improvement of the processing conditions of local products. In particular the LAG intervened for technical support, promotion and structural improvement of the transformation conditions of the 'casizolu' cheese and financed farmyard investments for the renovation, enlargement and building of premises for the transformation of the 'Fiore Sardo POD' (= Protected Origin Denomination ) cheese. According to the document written in English by Ricci and in the case of the casizolu the funding of five farmsteads was strictly limited to the action area of the LAG MBS, however those sites were never defined or specified in the evaluation. What is made evident in Ricci's document is that the LEADER II funding made direct investments in five farms "principally designated to the purchase of transformation machines and equipment and a series of horizontal activities of technical assistance, marketing and promotion of the product" (Ricci 344).

Interestingly, I learned from the breeders and cheesemakers, that "transformation machines" to extract the milk from the cow have never been utilized in Seneghe. I observed it was the men who continue to hand milk the cow, and transport the milk from the field to the home where the breeder lives with his family. There the cheese undergoes coagulation, maturation, and production into cheese by women cheese-makers, just as it has been done for more than 110 generations. The people of Seneghe are proud to claim they have not exploited their traditional cheese-making and often refer to Santu Lussurgiu as the village where the "mini-dairies" received LEADER support for the commercialization of the "casizolu" that comes from a Sardo-Modicana mixed with "other breeds." Never the less, the people of

Seneghe have been hugely impacted by the efforts of GAL Montiferru and the LEADER II program which is where this case study begins.

The Seneghese breeders and cheese-makers like many small-scale agricultural land-holders recognized as the market for the Sardo-Modicana was diminishing, their business needed to innovate in order to adapt to the changing environment. The regional GAL MBS efforts had devoted their efforts to strengthening the identity of the region by helping the breeders realize their traditional way of raising livestock known as "extensive livestock systems" is sustainable and based on the use of local available resources—indigenous cattle breeds and natural or seeded forages. Specifically it is a type of production monitored by humans, not modified by humans, which in turn helps to ensure the diversity and quality of environment and landscape. The extensive livestock production systems are more "natural" and it is accepted that they tend to have advantages over intensive systems in terms of ecological sustainability. Furthermore there are also fewer behavioral restrictions on the livestock allowing such systems to have high animal welfare standards (Vaz). The traditional production system maintained through intergenerational animal husbandry practices became the source of innovation that provided the means for micro businesses to grow and "develop new ideas as part of an adaptive global economy" (Clappison 71). The breeders and cheesemakers were poised for the LEADER approach, new governance that would stimulate local people and communities to develop in line with their strengths. Moreover the Montiferru region became a testing ground for understanding the framework for agricultural policies in the forthcoming CAP Reforms in the 21st century.

With a renewed identity and pride as "keepers of the commons" Sardo-Modicana breeders in Seneghe continued to build upon their inherent social capital to create, in September 1999, the Association for the Preservation of the Sardo-Modicana breed, "Il Bue Rosso." The Association consisted of 28 founding members of which 20 were breeders and eight

were butchers. Their alliance grew out of near despair and the courage to collaborate for the purpose of reducing risks in a dynamic market that is constantly evolving more so by global influences and somewhat by local realities.

*Figure 7: Seneghe at sunrise*

The impetus for the creation of the alliance "Il Bue Rosso" grew out of a "landmark" event when in April 1999, a conference organised by GAL MBS was held in Seneghe, titled "I produce a high quality meat but who do I sell it to?" In a meeting of both local and external experts with producers both local and external, the Seneghese learned how they might successfully promote their product, the meat. Also, thanks to the GAL MBS and their efforts in revitalising the artisan cheese-making practices and upgrading the facilities to a "commercial" level, there was an increased visibility to the image of casizolu and production region. Again, while Seneghese did not benefit from the direct capital investments, they were able to take the knowledge overspill or the exchange of ideas or information about novelties that were exchanged through social bonds and face-to-face contact with people from other villages, and utilise this for innovation in their own village (Marshall, Arrow, Romer). The type

of knowledge I am referring to is best characterised by P. Howitt as:

> "the ability of an individual or group of individuals to undertake, or to instruct or otherwise induce others to undertake, procedures resulting in predictable transformations of material objects." In the evolutionary perspective, Davenport and Prusak define knowledge as "a fluid mix of framed experience, values, contextual information and expert insights that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers." (3)

The outcome of this "spillover" knowledge prompted the people of Seneghe to host an event that included the GAL, the ASL (the sanitary agency) of Oristano, Slow Food International a global NGO defending local traditional foods, the technicians from the province of Arezzo, the CIA (Confederation of Italian Agriculture), the regional and provincial breeder's association (ARA) and the breeders themselves to initiate an action plan together. The action plan "consisted of:

- the creation of a producer association, which were able to unify the breeders around the common objective;
- improve the characteristics of the meat, through the creation of a jointly held code of practice, so that they could please the modern consumer preference in terms of tenderness, taste, and traceability;
- a communication campaign, which created a captivating and [uniquely] representative image of the product and, at the same time, to improve the reputation of the meat by linking it to its original territory, and to resolve the problems of commercialization that the product had to face until now" (Guarino 117)

From a rhetoric and professional communication perspective the Sardo-Modicana breeders were a source of stable knowledge within a network of institutions that were engaged in a

process of knowledge production for the commercialization of the meat and cheese. The GAL MBS report by Ricci, indicates the communication campaign included a television transmission, radio, a poster, brochures, newspaper articles, and merchandise such as t-shirts, aprons, caps, and bags; as well as various EU CAP publications (Guarino 119). The communication campaign aligned the breeders with the association SlowFood International's Presidia. Loosely translated into "garrison", Slow Food Presidia (Presidium, singular) are local projects that work to improve the infrastructure of artisan food production. The goals of the Presidia are to guarantee a viable future for traditional foods by stabilizing production techniques, establishing stringent production standards, and promoting local consumption. The Sardo-Modicana breeders grew optimistic and in a flurry of "social invention" drew up a "code of practice" indicating how the animal was to live and eat up until the time of slaughter. In theory the document was constructed to protect the breeders traditional and local knowledge in a time of scientific uncertainty, in reality the text did not represent the reasoning and purposes characteristic of the cultural practices of the Sardo-Modicana breeders (Killingsworth and Steffens, Teston).

### 2.8 Scientific Uncertainty, Text and "Il Bue Rosso"

Ultimately "Il Bue Rosso" represents a 21st century innovation: a local agri-food network discursively constructed on the grounds of democracy, ecology and quality. In the case of the Sardo-Modicana, their knowledge, practices and innovations embody traditional lifestyles relevant to the conservation and sustainable use of biological diversity from the Montiferru region in central west Sardinia. The place where the Sardo-Modicana is bred and raised represents a valuable pool of local knowledge, a diversity of indigenous species, and a rich history of adapting to innovations that give value to the marketplace. The incentives for innovation for the Sardo-Modicana breeders in the twenty-first century fall under "the World-or European-wide intellectual property concepts rules and mechanisms protecting farmers'

rights and their impact on the preservation of indigenous species and traditional and local knowledge. Never the less, the analysis of the different legal frameworks shows that most of the systems "offer only a minor protection level" (Wirsig, Profeta, Haring, and Lenz 2010). Wirsig et al in their 2010 article, "Indigenous Species, Traditional and Local Knowledge and Intellectual Property Rights" demonstrate the diverse implications of intellectual property rights in formal rules established through the legal and institutional frameworks of the Agreement on the Trade Related Aspects of Intellectual Property Rights (TRIPS) administered by the World Trade Organization (WTO). Formal rules include: (1) World Intellectual Property Organization (WIPO); Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (ICG); (2) the Convention on Biological Diversity (CBD); (3) FAO International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA); and (4) Geographical Indications (GIs) (1721-1730). The authors, assert that "at the moment only the European protection scheme for Geographical Indications seems to fulfill the goal to conserve and to support traditional resources and their sustainable exploitation. In Europe over 800 traditional geographical indications for food and agricultural products are protected against misuse and imitation by regulation (EC) no. 510/06. The legal framework of (EC) no 510/06 consists of two subsystems: the protected designations of origin (PDO) and the protected geographical indications (PGI)" (1723). The production scheme requires that the geographic indication is controlled by an authorized body, possess a long production tradition (minimum 20 years), and have a tight quality or reputation connection with their region of production" (1723).

My story of the Sardo-Modicana breeders begins here, with their most recent choice for innovation, for the adaptation of the code of practice "The Discipline of Production for the Protected Geographic Indicator (I.G.P.): Bue Rosso Del Montiferru." The Discipline of Production of Indications of Geographical Origin (I.G.P.) "Bue Rosso of Montiferru" was written by the agronomist, Dr. M. Caredda who is co-founder of the consulting group, ITEM.

ITEM supports groups involved in innovation and development within the areas of agriculture, environment and energy, tourism, and territorial governance. See http://www.itempro.eu

Informally referred to as the "code of practice" by the Sardo-Modicana breeders, the original document was drawn up in 2001. In theory, Geographic Indications (GIs) play the role of promoting rural development, protecting governance and indigenous knowledge. Empirical evidence from European countries suggest the "organization and governance of supply chains as well as the definition, promotion and marketing of GI products provide economic opportunities" (Rangnekar 2004).

Dr. Caredda was contracted by the consortium to draw up the thirteen-page document that is composed of 8 articles:

- Article 1: NAME (DENOMINAZIONE) reserves the name of BUE ROSSO del MONTIFERRU for the meat produced belonging to the race Sardo-Modicana.
- Article 2: ZONE OF PRODUCTION (ZONA DI PRODUCTIONE) indicates the geographical area of production to be represented by the villages of Abbasanta, Bauladu, Bonarcado, Cuglieri, Milis, Narbolia, Paulilatino, Santu Lussurgiu, Scano Montiferru, Seneghe, Sennariolo and the part of Borore, that is not a part of the Nuoro province.
- Article 3:DESCRIPTION OF THE PRODUCT (DESCRIZIONE DEL PRODOTTO) indicates that the animal either male or female must be finished in the last 12-28 months of its life and must be registered with the Italian Breeders Association. Sub-articles include the characteristics of the carcasses (Caratteristiche delle carcasse)
- Article 4: ORIGIN OF THE PRODUCT (ORIGINE DEL PRODOTTO) indicates where, why and how the race originated to include the Muscas family in Santu Lussurgiu as the first families to import the Modicana from Sicily. (You will hear from Loredana Muscas in chapter 4 and the exigence for the breed.)
- Article 5: DESCRIPTION OF THE METHOD OF PRODUCTION (DESCRIZIONE DELLA METODOLOGIA DI PRODUZIONE) indicates how the animal will be breed; the system for feed; the method for raising the calves; the finishing of the animal before

taken to slaughter; the transportation of the animal to an authorized slaughterhouse; the conservation of the carcass; and the commercialization of the meat (18 different cuts of meat); the points of sale to include a butcher, a restaurant or agrotourism business, or designated distribution site (which was never developed); and the display of the logo "Bue Rosso del Montiferru" IGP.

- Article 6: EVIDENCE OF THE LINK BETWEEN THE PRODUCT AND THE GEOGRAPHICAL ENVIRONMENT (ELEMENTI COMPROVANTI IL LEGAME DEL PRODOTTO CON L'AMBIENTE GEOGRAFICO) indicates through narrative that the quality of the meat is related to the means and ways of animal husbandry apparently reported by historical evidence.
- Article 7: LABELING (ETICHETTATURA) indicates with a logo the guarantee of geographical origin.

All the breeders of the consortium have a copy of the "code of production." Some find it useful and have a copy on hand, others do not. Anyone can get a copy from the secretary of the consortium. Nevertheless, complying is a choice. The breeders who wish to sell their product with the logo guaranteeing geographical origin, through one of the eight designated butchers must comply with the specific feeding and finishing system indicated in Articles 1-5. The person who exercises control is a technical expert who visits the breeder and the animal to determine the time when the animal can be slaughter which is relative to its weight and size. In other words, the "code of practice" provides a voluntary set of guidelines and principles. While the mandates seem clear and the breeders certainly know how to finish off the animal by placing it in a confined environment as prescribed in Article 5, voluntary implementation is based upon a balance between costs of finishing and commensurate benefits. Nobody knows the costs of regulation and the complexity of dealing with local governance bodies such as states, local communities and landowners, let alone a fickle consumer.

According to Rangnekar (2004), "GIs should be considered as part of a wider set of

policy measures that seek to protect and reward indigenous knowledge" (3). It is widely acknowledged that degradation of the natural environment is related to the loss of traditional or indigenous knowledge, therefore when facing environmental uncertainties due to biodiversity loss, protecting cultural practices and heritage breeds through economic incentives makes sense. This is precisely why the Sardo-Modicana breeders took up the code of practice, to stabilize traditional knowledge systems within a "food from somewhere" movement. A "food from somewhere" regime is a movement shaped by public participation "in response to the risks associated with increasingly specialized, expert-driven, knowledge-production frameworks." The code of practice was created to "counteract the accelerating successes" of a global food science and technology communication complex. I see this document as an argument against scientific uncertainty, the multifaceted rhetorical strategy used by Racheal Carson in Silent Spring. Carson's (1962/2002) project opened up a rhetorical access point for responses, for public participation, for making ethical food choices, for laying down hard-earned currency that circulates within a non-industrialized and environmentally safe food and farming regime (Walker and Walsh 2012). Walker and Welsh suggest Carson's adaptation of scientific uncertainty to environmental policy making provides a historical precedent for contemporary invocations of scientific uncertainty in debates surrounding global warming, as well as suggests methods for excavating the history of other pivotal topoi in the rhetoric of science and environmental policy (2012). In part, this project will illuminate rhetorical topoi responding to uncertainty by following the individuals who have devoted their livelihood practices to "food from somewhere."

In 2001, the first animal was slaughtered and sold in the local butcher shop owned by a Sardo-Modicana breeders on Via Angioy. The process for building the communicative pathways for the socio technical network was in place and coordinated by the Consortium, Il Bue Rosso. The first effort by the Consortium was to move the sales of the meat to the network's official butcher shop "Consorzio il Bue Rosso" located in Seneghe's historic center on Piazza

dei Balli. Before I introduce you to the Sardo-Modicana breeders I want to explain my methodology and methods in the following chapter.

*Figure 8: Dancers in Piazza de Balli during carnevale*

# CHAPTER 3

*Methodology and the Becoming of a Text*

## 3.1 Qualitative Research Adhering to an Ethnographic Approach

For this project, I designed and conducted qualitative research adhering to an ethnographic approach that builds on the notion of culture as narrative (Lindquist 4). I believe at the core of Lindquist's principle is an understanding that "cultural conventions and language usage" construct narrative models for "describing the course of a life" (Bruner 15). As a qualitative researcher, I found the advantages of choosing ethnography were far greater than any other type of methodology and best align with narrative inquiry. According to Angrosino, "Ethnographers search for predictable patterns in the lived human experiences by carefully observing and participating in the lives of those under study" (2007). In the case of the Sardo-Modicana breeders, my work as an ethnographer was to participate in their material, sensorial, and social environment.

The nature of ethnography I adhered to features the affinities between rhetoric and performance and takes a constructional view of reality in the process of Becoming. I understand rhetoric and performance as a symbiotic relationship: two mutually beneficial notions serving ethnography's interest in making meaning of cultural practices. The affinity between rhetoric and performance privileges social invention in a "radically contingent entity: open, flexible, adaptable, and sensitive to situation, circumstances, and nuance" (Conquergood 1992). Hence, the ethnographer in fieldwork takes on a "constructional view of reality in the process of Becoming: no longer can a fieldworker be anchored in an essentialist worldview of Being" (Conquergood 1992). This study will enlarge our discipline's understanding of ethnographically-based research in the field that does not "believe the world is ontologically given but rather that it is rhetorically constructed and per-formatively realized" (Conquer-

good 1992). With this understanding, it is necessary to personally engage in a dynamic living process with the Sardo-Modicana breeders and to include change, a struggle for symmetry, and a focus on the mundane and creative improvisation. Ethnography is particularly useful because it is through fieldwork that "so much cultural knowledge is embodied in gesture, action, and evanescent event" (Fabian 1990).

Ethnography in particular privileges a space for what is known as doing communication in the research field for extended periods of time in order to experience the temporal unfolding of a lifeworld. Participation and observation, the key approaches in ethnographic fieldwork, affords me the opportunity to improvise a strategy to document the everyday or what some see as mundane practices of the Sardo-Modicana breeders. I use these terms to describe the minuscule traces of social activity constructing cultural practices. When the breeders allow me to participate in their lives, I essentially engage in a conversation with them. Whether the dialogical is informal or formally constructed in open-ended interviews, I am seeking to understand, through action, enactment or performance, how knowledge is represented. Therefore the nature of ethnography I adhere to in this study is useful in the search for understanding generated from these research questions: (a) What are people doing?; (b) What are people making?; (c) What are people interacting with?; and (d) Who are people interacting with?

This chapter functions to make transparent both the procedure and the theory behind the procedure. Consequently in this chapter I first explain the theories guiding my study and carefully walk through the approaches to, plan of action for, and preparation of the data for analysis and interpretation.

## 3.2 Methodology: Theories Guiding this Ethnographic Study in Narrative Inquiry

A researcher's turn toward the narrative relies on an empirical framework which acknowledges that narrative is grounded in a pre-understanding of the "world of action" and therefore

aligns with my concern for the human condition and my understanding of how I conducted research for this project (Ricoeur 54-56). I draw from the seminal author of Action Research (AR), Peter Reason. While there are many strands of AR, (Argyris and Schön, Greenwood and Levin, Heron, Reason and Bradbury, Lewin, Freire, Fals Borda, Torbert, Gaventa and Horton), I adhere to one known as human inquiry and explained by Reason who asserts that "quality human inquiry starts not with concern for theory or knowledge but from engagement with the reality of people's lives and how they live and experience them" (20). Clandinin has stated, "Narrative inquiry is a profoundly relational form of Inquiry and furthermore, narrative inquiry implies knowledge is co-created between the scholar-practitioner and the people of the project" (Guba and Lincoln 221). Mutual cooperation grounds this form of research , making affordances for participation.

My research takes a "participatory worldview" within this AR approach. My understanding of "participatory" begins with an intimate empathetic relationship between myself and the subjects of the research. In the case of the Sardo-Modicana breeders, I walked with them across the landscape. I accompanied both the breeders and the cheese-makers on their daily routines. With my camera, I leaned into the lives of the breeders, capturing the everyday practices they were willing to share with me, including all the raw material of impressions and sensations. This way of working acknowledges the notion of Becoming explained above. Working in the here and now of reality not only privileges participation but centers around producing knowledge useful to people in everyday life, specifically knowledge that increases "human flourishing" (Greenwood and Levin). Ethnographic fieldworkers who adhere to participatory methods grounded in the affinities of rhetoric and performance take a stance of symmetry, a notion that the outcomes or findings from the study should serve the well-being of the researched in the project as well as the researcher.

Participatory methods have many strands, all of which underscore a reciprocal rela-

tionship between the researcher and the researched. The nature of reciprocity varies across projects, situations, and skill sets. In the case of the Sardo-Modicana breeders, they willingly participated in my field work; however, in this particular project, I did not literally participate in their work. I did not at any given time put down my video camera and use my hands or body to help them fulfill a task, not because I was not willing or cable of participating in agricultural work: I have pulled lambs, pulled weeds and pushed sheep around, on many occasions. Nevertheless, reciprocity was established between myself and the Sardo-Modicana breeders in other ways.

The first level of reciprocity established with the Sardo-Modicana breeders was to partake in good conversation, the first step to honor another person's reality and the first step in honoring alternative epistemologies. Participatory methods adapt a perspective that reaches beyond "merely acknowledging the existence of multiple perspectives and voices, to working with them" (Reason and Torbert). The conversations I had with breeders in Seneghe not only compelled me to "respond intelligently in the moment" but also informed my negotiation of their personal reality when we undertook the planned videotaped interviews and when I joined them with my video camera while they were engaged in their livelihood activities (Reason and Torbert). This level of participation requires attuning to hearing and responding to what is heard, in other words, influencing and being influenced by other perspectives and voices" (Reason and Torbert). While I did not reciprocate through physical work, I emotionally and cognitively participated in their worldview. By focusing on the local and in particular alongside only Sardo-Modicana breeders from Seneghe, my research plays a part in illuminating specific cultural aspects of their animal husbandry practices while making evident their own critique of their practices. This research strives to accomplish what Bressen asserts: "Make visible what, without you, might perhaps have never been seen" (82).

Given that the breeders traditionally are oral communicators, the research methods of

observations, videotaped interviews and contextual video footage were a natural fit to document their stories and thoughts. What sets narrative research apart from other forms of qualitative research that also collect and/or construct stories is that "narrative inquiry embraces narratives as both the method and phenomena of study" (Pinnegar and Daynes 5). To clarify the confusion between the method and the phenomena of study in the case of the Sardo-Modicana breeders, I will be collecting stories to create a narrative. (To clarify the confusion between the method of narrative and the phenomena of study as narrative in the case of the Sardo-Modicana breeders, I will use the term "stories" in reference to the phenomena of study and "narrative" in reference to the method.) Many scholars recognize "that all stories are narratives, but not all narratives are stories" (Boje 2001). With this in mind, I collect stories and produce a narrative that constructs an informed story for a written dissertation. In reciprocity for their participation in my research, I will produce for the breeders a video with aesthetic elements.

Ethics such as reciprocity and validity play a central role throughout and beyond this research. Thus the research product must be valuable to the Sardo-Modicana breeders while it benefits my academic pursuits. The ultimate validation comes from the research participants themselves, who have the opportunity to review this dissertation and the final video deliverable(s) to ensure the content accurately reflects what they have shared. This understanding of validation is clearly described in the Human Subject Consent forms signed by each person participating in this research (See IRB application in the appendix). This study as well as all of my prior work is dependent upon mutual cooperation with those people willing to participate with me. In no way do my methods of data collection detract from or offend the people of Seneghe or their affinities to livestock.

### 3.3 Methodology: Approaches Guiding this Ethnographic Study in Narrative Inquiry

One of the challenges for researchers and practitioners in rural development is getting

at propositional or unconscious knowledge so that it can be made conscious and represented through language. Karl Polanyi characterizes this knowledge that cannot be easily articulated as tacit knowledge, yet can be understood as the space in which one "feels" how to do something. It is personal; more specifically, it is the backdrop against which all understanding is distinguished. Polanyi intentionally does not make a distinction between tacit and explicit knowledge (or the mind-body dichotomy). Instead, this tacitness is the precondition for focal knowledge or the practices that exists in peoples' hands and in their actions. Polanyi is particularly important to this project which seeks to know the dynamics of knowledge communicated among Sardo-Modicana breeders. Polanyi privileges the human/animal relationship and foregrounds the this relationship as a focal practice against a natural territorial backdrop. Transfer of tacit knowledge from one individual to another can thus only take place through demonstration and direct interaction (Polanyi, Malmberg and Maskell). Therefore, one way a field practitioner in ethnography can collect tacit knowledge is by documenting with visual methods the work of the Sardo-Modicana breeder as they are involved with the beast.

My dissertation will contribute to the growing literature addressing how visual data can be used in narrative inquiry. Vision is central to my work; it is my life force. Visual perception affords me the art of writing and grasping perspectival reality of myself and others for the purpose of meaning making. I devised a set of questions that served as a basic framework for "seeing" during fieldwork. Because I was looking for cultural processes of knowing within the practices of the Sardo-Modicana breeders, I focused my attention on:

- What are people doing?
- What are people making?
- What are people interacting with?
- Who are people interacting with?

As a documentary artist using both visual and language research methods, and as a writer

who will use this research to enlarge conversations on farming and food in our field, it makes sense to want to show and tell, to use all the available means I have, to compose a scholarly text. As a documentary photographer, I developed a sophisticated embodied approach to visual research methods. I used a hand-held Leica camera as an extension of me: "a human as instrument" (Lincoln and Guba 1985). Essentially the camera and I, as characterized by Polanyi, acted as "a probe in the search for something" (136). Yet as Polanyi says:

> we may not know exactly what. Yet we nonetheless trust that the how of our knowing, our form, which is our reliance on the probe among other things, will yield results. And our form of knowing will, of course, shape what we come to know. Polanyi goes so far as to claim that we make the probe or stick "parts of ourselves for reaching beyond them. (qtd. in Newman 14)

Polanyi explains the notion that "the camera augments my perceptual awareness by literally extending my being into the space of another's being. In a holistic integrated mind with body movement I reach beyond myself" (1966). When I extend myself with the camera, it is an intentional act therefore distinctly different from looking from a distance. For me it is a learned practice and body technique in which I have specifically trained my eyes to see, and my ears to hear.

Following Merleau-Ponty's notion of intercorporality, my perception of another human being is not as an object but rather as a locus of meaning due the primordial intersubjective bond between bodies replying and responding by way of a "perceptual consciousness" (qtd. in Crossley 2007). The extending of myself is an intentional act motivated by empathy and therefore an emotional involvement that allows me to "interrogate and read my environment" (Meleau-Ponty 1962). For my body technique to fully function, I learned that vision and movement of my being are necessarily deeply intertwined. My camera leads me into the world. Merleau-Ponty accommodates this understanding in The

Primacy of Perception:

> Everything I see is in principle within my reach, at least within reach of my sight, and is marked upon the map of the "I can." Each of the two maps is complete. The visible world and the world of my motor projects are each total parts of the same Being (162).

Focusing through the lens of my camera directs my attention to tacit knowledge or specifically, "the practices that exists in people's hands and in their actions" (Polanyi 1966). Polanyi understands knowledge that cannot be easily articulated as tacit knowledge or the space in which one "feels" how to do something. Polanyi intentionally does not make a distinction between tacit and explicit knowledge (or the mind-body dichotomy) but rather suggests a personal space that is a backdrop from which all understanding is distinguished. For Polanyi all objects have meaning for human beings and form the focal points around which all activities are organized. In the case of the Sardo-Modicana breeders, their focal point is the beast. It is important to underscore my application of Polanyi as an intentional act towards reducing dualistic language or mechanistic interpretations, as well as following Collins who builds on Polanyi to understand that "tacit knowledge is cultural knowledge that is not made explicit in rules and procedures" (qtd. in Sauer 142).

I use the video camera to collect data generated from interviews and observations. This tool produces language text and visual text. With my camera, I interact and participate in the forms of videotaped interviews and videotaped observations. With the video camera, the interview is perceived as a significant and structured event by the project subjects. My first focused face-to-face encounter with each individual served as a rapport-making process. I loved the interviews: for me they were a highly personal and intimate experience that allowed me to get a feel for the humanity of each person I encountered. Equally my objective was to convey my researcher stance or ethos during the "give and take" in the first interview

conversation. The first interview can make or break all future encounters with the research subjects: therefore I carried a concern for fidelity and authenticity. Consequently I aimed to create a safe space where 'good' denotative utterances but also 'good' prescriptive and 'good' evaluative utterances" are expressed (Lyotard 18). Interviews are a form of "social invention" that provides a "raw data" for the interpretive analytical process, the composition of impressionistic written text and the video narrative storyline.

The function of the hand held video camera during video-taped observations led me or drew me into the space where breeders and cheesemakers were constructing different modes of knowledge expressed orally, visually or kinesthetically. Looking through a lens heightened my sensory perceptions for embodied seeing and hearing. My body actually felt like it was seeing and hearing as it moved with or followed, for example, an animal or a human. The camera was a focusing device to experience the sensual world before me as well as "see" details I may not readily have noticed without the camera in front of my eyes. Equally significant but not fully realized until this project was the necessary deep exploration and reflection ignited when I revisited the visual data: a mental exercise completely different from the process of collecting the observed realities. This understanding is detailed in chapter 5. Moreover, I discovered the vast distinction between defining scenes for a documentary video and for an ethnographic film. An ethnographic approach forces one to slow down, which produces not only a different visual frame to work with in editing but also creates a material object for repetitive viewing that deepens my emotional and empathetic senses as the basis for writing an ethnographic narrative text.

As a scholar outside of the academy, I experienced, unfortunately, an academic ambivalence to image-based text, particularly among anthropologists and action researchers in the natural sciences. My formal training in documentary photography and self-taught learning in ethnographically-based documentary video has refined my skills to "see" and more im-

portantly the academic freedom within rhetoric and writing has solidified a coherently anthropological approach toward filmmaking and scholarship. My documentary mode draws from Bill Nichols 2001 text, *Introduction to Documentary*. The mode I work in is a blended observational-performative mode. This mode can be expressed as using digital hand-held commercial video cameras that are less obtrusive and have the ability to operate in low-light conditions, which makes it easier to access and document the life unfolding in front of the camera. My intent was always to capture the voices as spoken by the project participants and therefore keep the content alive with emotion and subjective points of view. I do not expect to represent reality nor provide absolute truths from this project; however, I will construct a written visual narrative that creates a sense of place filled with characters living out the drama of their lives. The ethical foundation for this approach aims at decentering the "notion of "reason" that has characterized rhetoric in the West from Plato to Perelman" (Conquergood 1992).

This ethical position of an ethnographic researcher lends to my goal of composing a clear and precise account of the lived experiences of the people I have come to know as well as represents their viewpoints and voices in written scholarship. I find narrative inquiry useful in my role as an ethnographer who moves between Self and Other for two reasons: (1) it is impossible to position myself outside of my personal history and (2) it subverts dualistic thinking. My use of narrative inquiry underscores my hope to destabilize the metanarratives of positivist science and hegemonic structure by focusing on the communication practices of Sardo-Modicana breeders. In particular, this work shares with Sauer a "postmodern and feminist awareness that existing communication practices within industries (agriculture and economic development) are shaped and constrained by political and economic assumptions that may inadvertently silence or render invisible the kinds of information that decision-makers need to assess and manage" place-based livelihoods (5). Indeed Sauer is responding to vari-

ous feminist critiques that argue for the validity of knowledge gained from the lived experience (Brodo, Harding) and would [likely] agree there are real, not imagined, gender differences in experiences of, responsibilities for, and interests in "nature" and environments (Zimmerer 2006). The conceptual framework offered by feminist political ecology (Bordo, Butler, Merchant, and Rose) is particularly helpful in challenging positivist science which tends to separate the mind from the body and the body from the environment.

It is evident that my personal journey is linked to my research or as Marja-Lissa Swantz explains, "I do not separate my scientific inquiry from my life" (qtd. in Reason 15). I have chosen Italy because I am an Italian-American, and as part of my personal journey I wished to cultivate the Italian language for professional purposes and for personal satisfaction. I am inextricably intertwined with this narrative as an Italian-American, single female with vibrant relationships with my extended family in Italy. I have practiced self-reflectivity with my "self as a researcher", a "student", and an "instructor" from a land grant college by addressing validity and bias concerns as they pertain to my influence on the study. Without hesitation I am an advocate for small-scale placed-based food and farming practices. As an advocate and long-time practitioner who has participated in communities to produce documentary video, I have had to learn and research their issues. In chapter 1 I traced over some of my knowledge base that has currency among the breeders. I developed a level of trust with research participants because I can talk with authority and compassion about their work, their relationship to livestock, and challenges they face as traditional breeders in a modern global world. Furthermore, my Italian cousins are involved in similar local and place-based food production, exposing me to Italian ways of knowing, which has been an added currency as I created rapport with and gained acceptance into the community.

For these reasons, it is not possible to objectively separate myself in the narrative from the breeders. However, during my stay in Seneghe, I did make every effort to leave be-

hind my understanding of the American way of doing small-scale agriculture so I could stay open and curious to what I was learning from the breeders. During the first three months, I also hesitated to sit in bars and talk about the Sardo-Modicana with just anyone. Until I had an initial interview with the breeders, it was my intent to position myself as a learner in relation to my own predisposition, which as I explained earlier is to honor the first interview with each research participant. From the breeders themselves, I learned the nature of their lives. Because this work is largely inductive, I wanted to leave my curious mind fresh for the individual participants in the project. This was not a comfortable precaution but a necessary one. My past knowledge was acting like an impatient and precocious child frequently keeping me awake at night if I lost control of the noise it was making in my head. I continued to remind that impatient voice that the ultimate goal, as Malinowski once put it, is "to grasp the native's point of view, his relation to life, to realize his vision of his world" (qtd. in Geertz 25).

### 3.4 The Study Plan

The people in this study all reside in the village of Seneghe, situated in the Montiferru territory where this case study takes place. In this study, I will introduce:

- The Gatekeeper: Salvatore (Tore) Porcheddu
- The Breeders (See chapter 1.4 for details): Celestino Illotti and his mother Jusipina, Giovanni Mastinu and his mother Rita, Antonicu Ponti, his brother Emelio and his sister-inlaw, Maddelana, Cecu Cubbeddu, Paulo Serru, and Rita and Pinuccia Cubbeda.
- The Outliers (a person residing outside the case study): Antonio Maria Cubbedu, a breeder and public health veterinarian; and Loredana Muscas, a breeder and agriculturalist working with the Sardinian Region of Agriculture.
- The Host family: Maddalena Denti and her daughters Titi and Rose.
- The Data Collected: seven videotaped interviews and thirteen hours of videotaped observations with hand written notes, and the written document "a "code of practice" for

raising the Sardo-Modicana.

- The Instruments for Data Collection: Sony VX 2000 with 1) an omnidirectional and 2) a lavaliere microphone.
- The Dates in the Field: September 2009, April-December 2010, February-March 2011.

The labels "gatekeeper," "breeders," and "outliers" are not my original labels but are commonly used within their respective sites of disciplinary or cultural practices. I characterize a "gatekeeper" as someone who provides initial access to the community of individuals to be studied. In the case of the Sardo-Modicana breeders, Salvatore Porceddu was the secretary of the Consortium and a contact person whose phone number was available through documents I found on the Internet. During my cursory research, I found his name and phone number, which began a process of diplomacy and patience for the purpose of identifying the individuals involved in this study. The individuals participating in this study are identified as breeders. The label breeders is applied to the group of individuals in this study because it is the appropriate name for a subgroup of farmers that breed and raise livestock.

Another important relationship I developed in this study was with outliers, individuals who lay outside the main group of breeders who make up this study. Two individuals who could have been included in the main group of breeders are Antonio Maria Cubbedu and Loredana Muscus. Both are Sardo-Modicana breeders and have advanced degrees. Antonio Maria Cubbedu is a veterinarian and Loredana has a PhD in Agroecology. It is because of their formal educational experience that I chose to separate them out from the main group and instead utilized their knowledge and experiences to verify the data I found in the field. You will introduce both Loredana and Antonio Maria in the conclusion of this story where it will be evident how their roles at outliers serve this study. For now, I can distinguish these two individuals as wearing multiple "hats" in the sociotechnical complex in which this story unfolds. It can be said that Loredana wears the hat of a breeder, schooled expert and govern-

ment official, while Antonio Maria wears the hat of a breeder, schooled expert and medical official. Their worldviews are significantly different than the breeders in this research as well as their motives.

### 3.4.1 Tools and Approaches for the Study Plan

For this research, the tool I utilized to collect visual data was a high end commercial video-camera, Sony VX 2000 with an omnidirectional microphone. My video camera served two purposes: (1) it was the primary tool for collecting qualitative data, and (2) looking through a camera lens heightened my observation skills. My observations produced visual and written data of husbandry practices and modes of cheese-making. I observed the work activities of the breeders when they hand-milked the cows, when they fed the cows, when they tattooed the ears of the cows, and when they vaccinated the cows. I observed the work activities of the women who transformed the milk into cheese. These objectives helped me accomplish two goals: to make visible 1) the human condition, and 2) fields of actionable knowledge. I generated fifteen hours of video data with complementary written data.

I set up semi-structured video-taped interviews that were about sixty minutes in length. When it was possible, I interviewed individuals in their own setting. When it was not possible, I turned my host's veranda into a naturally lit recording studio with green plants and ambient sound. In all cases, I continued to use my tool of choice, the Sony VX2000, but added a lavaliere microphone typically used for interviews and a tripod to stabilize the camera while I conducted the interviews. The following initial interview questions provided qualitative data that revealed significant insights into the breeder's communicative practices of knowing and generated six one-hour interviews:

1) What is your name?

2) Where do you live?

3) What is your first memory of the 'red cow'?

4) Please tell me a little about your farming practices.

5) Please tell me about the tools and technology you have utilized over time.

6) Who do you turn to for information before you make a major decision?

Questions one and two uncover the identity and social situation of the breeder. From their answers and subsequent prompts, I hoped to learn about their genealogy, ethnicity, race, class, and sometimes gender preference. These two questions support objectives in Feminist Political Ecology (FPE) by characterizing the nuclear family of the farmstead, while placing the family in a social and historical construct. Question three reveals with whom and in what situation the breeder established his or her relationship with the beast. The responses are varied and serve as an origin story. (The responses triangulate with question 6.) Narrative inquiry in rhetoric and professional communications (RPC) informs this question. Questions four and five reveal expertise in situated practices regarding animal husbandry protocol and farm management protocol. This question affords triangulation between FPE and RPC. Question six makes affordances for the communicative and knowledge-sharing practices of the breeders. Consequently this question is prompted by FPE and RPC. All of these questions inform where I might be able to insinuate myself into the lives of the project participants to document their everyday activities.

I trusted the process of asking open-ended questions which I knew would elicit personal stories grounded in lived experiences around events, situations, successes and failures. As I listened, I asked further questions that emerged through the interview process. My objective was to uncover stories telling of a life lived in the past so that I could accomplish two goals:

- Record reflection-in-action or knowing characterized as “tacit, spontaneous and often delivered without taking thought” (Schon 1983).
- Record the power of each individual’s voice, knowing I would reveal metaphors, proto-

types and analogies to guide me through the theory-building process.

### 3.4.2 Summary of the Study Plan

My study design is as follows:

- I chose open-ended video recorded interviews that allowed for dialogue and extended inquiry so that I might understand how the breeders and cheese-makers give meaning to their situation.
- I chose observations of breeders working with their livestock so I could examine the social meaning of the Sardo-Modicana, an important predictor of the social behaviors of the breeders. Throughout my observations I watched for communicative practices among breeders and between breeders and experts. I looked for cultural knowledge and embodied practices mediated by action, enactment or performance. During my observational experiences, I continuously followed a mental shooting script guided by the research questions: What are people doing? What are people making? What are people interacting with? Who are people interacting with?
- I collected texts and ultimately traced the code of practice as a means for examining the breeder's behavior and their meaning-making in relation to conditions that govern the shared meanings of practices.
- I collected video data as a secondary mode for accurately recording what I observed and what I heard.

This section contextualizes my activities in the field. I will begin by summarizing the years 2010 and 2011, followed by a narrative representing the critical work of setting up a project and my enculturation to the project site (see Table 1).

| Timeline for Field Study | | | | |
|---|---|---|---|---|
| YEAR | JAN-MAR | APR-JUNE | JULY-SEPT | OCT-DEC |
| 2009<br>September 1-13 | | | | |
| 2010<br>May 12 December 10 | | | | |
| 2011<br>February 26-March 10 | | | | |

*Table 1: Field Study Timeline*

In 2010 and 2011, I made two significant fieldwork trips: the first for seven months from May-December 2010 and the second from mid-February to mid-March 2011. During both trips, I gathered data by totally immersing myself in whatever happened during observations or conversations. I recorded a running description of these events with my video camera or with my pen in a field notebook. In a separate notebook, I journaled my reflections on the events I observed or participated in. During both cycles, I transcribed and coded each interview, during which I translated from Italian into English. Each interview and contextual video footage was archived in Quicktime files. I used a Sony video Walkman to transfer all data from the master mini-DV tape cassettes. I made broad codings of the video footage, marking scenes that would be useful for a narrative video and scenes I wanted to show the breeders. With a pen in hand, I wrote fieldnotes of experiences leading up to the moment I transferred my pen to camera and then camera to pen for inscribing the world I was observing. The written observations were later transcribed into Word documents along with written reflections while immersed in the translation. During the transcribing and coding process, I frequently found myself jotting down ideas or notes of forgotten episodes that should be accounted for or specific things I wanted to look for in future observations or interactions with specific people.

During the first cycle, I spent the first three months observing and allowing myself to become socially integrated, well-informed and linguistically competent with life lived in Seneghe. During the month of August, all of Italy takes a holiday, and frankly it is too hot to find pleasure in any kind of work. Like all of my social acquaintances, I went to the beach as often as possible. At the end of the first seven months, I had acquired seven videotaped interviews and thirteen hours of videotaped observations, most of which were collected from September-December 2010.

Between the first and second data-gathering cycle (from mid-December 2010 to mid-February 2011), I compiled all of the verbal narrative data into a twenty-page memo that responded to the question "What do I know?", I weaved existing scholarship with the stories of the breeders in that memo. From this exercise I was able to construct an understanding of the observed phenomena I observed during the first phase of research. In the process of composing early drafts of  an ethnographic text, a new question emerged which guided my inquiry throughout the second data gathering cycle: "Why aren't breeders fattening their cows?"

With this new line of inquiry, my conversations felt ever more dialectical as I pressed participants to explain more explicitly and through specific examples their understanding of the finishing process for fattening cows. a more intentional yet subjective meaning-making mindset. I was reminded of Hammmersley and Atkinson who said,"there is no such thing as pure data, free from potential bias of the interviewer and or the researched" (102). During this time of fieldwork I took extensive field notes, and from these field notes I wrote another fifteen page memo following the heuristic question, "How do I know what I know?"

### 3.5 Entry Into the Project Site and Enculturalation

This study draws from ethnographic methods and practices which will help me grasp and then render the knowledge dynamics of the Sardo-Modicana breeders in the village of Seneghe. My access was provided by Salvatore (Tore) Porceddu, who at that time was the

consortium's secretary. Identifying a gatekeeper for this study was not as difficult as tracking down the identified gatekeeper, Tore Porceddu. I made contact with Tore while a summer intern at FAO and we meet in September, 2009.

Identifying Tore was effortless, tracking him down and finding him was a challenge. Slowfood Presideo, the arm of Slowfood International in defense of small landholders, had several publications in PDF available on the Internet, and within an hour I found contact information for a person who represented the Sardo-Modicana. I called that person, and he provided me with the email address for the secretary of "Il Bue Rosso." I made an email query written in Italian, and within 24 hours I had heard from Tore Porceddu. He encouraged me to visit the Montiferru region during the Setembre dei Poeti celebration scheduled for the first weekend in September. I was excited and knew, in spite of the time which overlapped with my teaching assistant responsibilities at MSU, I had to take a leap of faith and return a week after fall classes began. Visiting Seneghe during a public event would allow me to meet more people than I could in a short weekend visit; furthermore, Tore would gain a certain public image by introducing me to his community. I consulted with my advisor, Dr. Grabill, and he agreed my decision was sound but made it clear I should promptly return to the states once my objectives were met.

Tore suggested I call him when I arrived in Seneghe. While that was my plan, I decided to drive into Seneghe with a rented car I hired at the Cagliari airport. From the airport it was a 90 minute drive on the "autostrada" (super highway). I was feeling a little smug as I made my way to Santu Lussurgiu, the town where Antonio Gramsci went to school and one of the villages recognized for raising the Sardo-Modicana. I walked around the city and made several unsuccessful phone calls to Tore. He had suggested he would help me find a B&B in Seneghe, but as 5PM approached and I was still not able to reach him, I began looking for a room in Santu Lussurgiu. I set out on foot over cobble stone streets for a hotel that was indi-

cated by signage on a medieval wall. I walked what felt like a labyrinth of narrow streets that barely allowed a small car to pass through. It was getting late, and, although I was not disconcerted, I had seen few restaurants or signs of hotels since I left the autostrada, and I was determined to eat the typical food before I left Sardinia. I finally gave in to my hunger pangs and asked a woman in a flower shop for directions to the hotel "Sas Benas." Ahead, then right, then up the steps and to your left. It all made sense, but the scale was distorted with all the streets lined with continuous walls of residential buildings. Doors and gates of homes emptied out into the streets: no porches, no lawns, and no people. Climbing what would be the last hill, I could see the widening street spill into a blacktop road. On my left was the hotel. I was charmed by the room, the meal, and the proprietor of the hotel and suggest any visitor stay there someday. Leaving out the details is necessary, but after having a perfect meal from the two products of the Sardo-Modicana, a plate of sliced beef topped with arugula, shredded casizolu cheese and olive oil, I proceeded to call Tore. By 9PM I was getting anxious. I had a mission to accomplish and Jeff's voice echoed in my head: "Get back as soon as you can!" I called Tore once, then twice, then a third time all within five minutes. I was feeling like an obsessive-compulsive weirdo, but I was determined. Finally, on the fifth try, Tore answered the phone and responded with enthusiasm and hospitality. We made plans to meet the next day in Seneghe at 11AM.

When Tore and I met on the next day, the first programs for the three day annual music and poetry event "Septembre die Poeti" was underway. Later that day, he and I went to see a herd of Sardo-Modicana with the breeder Cecu Cubbedu, who was to become one of the project's participants. Because the rooms in Seneghe were booked, I remained in Santu Lussurgiu where I met several families, both cheese-makers and breeders who welcomed me and invited me to find them on my return visit.

My first encounter with the people of Seneghe was in September 2009. I was invited

by the project gatekeeper to attend the village's annual "Septembre di Poeti" event held during the first weekend in September. My gatekeeper was the secretary at that time of the "Association for the Preservation of the Sardo-Modicana Breed Il Bue Rosso." My gatekeeper, Salvatore Porcheddu, strategically introduced me to community members throughout the weekend. I returned to Seneghe on May 20, 2010 staying until December 10, 2010 and returning for three weeks in March 2011. Originally I expected to select a cross-section of households and individuals from the 44 members of Il Bue Rosso. This plan was soon dismissed when, after setting up my living arrangements in Seneghe, I discovered each village has retained certain agrarian practices over generations. Referring back to the significance of the Sardinian dialect, the language representing animal husbandry practices differ from village to village. Furthermore, I was informed the protocol for hand-milking is different from village to village, specifically between Seneghe and Santu Lussurgiu. By residing in Seneghe I was able to maintain a more locally-lived experience and be publicly visible to the people participating in this study.

I chose to live with a woman who had in her house an empty bedroom to lease out. While we were brought together by my gatekeeper and we understood when I arrived my stay may be temporary, we promptly found we were compatible. Furthermore, living with Maddalena was an added currency towards community acceptance. With Maddalena, I became a church goer, a daughter, a sister with her two children, a morning walking companion, a neighbor, and ultimately a missionary for the Sardo-Modicana.

For some researchers, moving in this social world and taking on the various roles I took on during field work might cause one to feel annoyed, but as an Italo-American I welcomed the opportunity to animate my heritage. Furthermore, I do not have sisters, and my grandmother is no longer with me, so through these women I was able to learn how to carry myself as an Italian woman. For me, both walking and going to church was a social and aes-

thetic opportunity I looked forward to.

Originally I wanted to include breeders from villages throughout the Montiferru region, but as I explained earlier in this chapter, I realized a case study of breeders in only one village would sharpen the holistic in-depth investigation I was aiming for. Tore introduced me to various breeders or suggested people I might consider as participants in this project to include Celestino Illotti and his mother, Giovanni Mastinu and his mother, and Antonio Maria, who ultimately validated field results and introduced me to outliers Paulo Serru and his wife. In the end, Antonio Maria assessed the credibility of what I learned from the project participants and added additional nuanced dimensions to my learning. Additionally, I fully respected Paolo's candidness which was key to helping me reconfigure my direction to ask "Why the farmers can't fatten their cows?" during the second cycle of field research. Maddalena, my host, introduced me to Antonio Ponti and brother Emelio and his wife, Maddelena. While Tore suggested the sisters Rita and Pinnucia, it was I who made the first introduction while passing them in their jeep on the road to "su monte." It was not difficult to identify the only two women working outside of the domestic norm. This research generated seven videotaped interviews and thirteen hours of videotaped observations.

My focus on building relationships is contextualized under section 3.1 of this chapter; however, I will encapsulate by underscoring that I built relationships by living in the community and participating in events such as church services; festivals; religious processions; making friends and having diners and picnics with them; and harvesting olives, almonds, and chestnuts. I also built relationships by doing all the mundane but essential activities of living like the Seneghese, activities like posting letters and buying bus tickets, and going to the bank, the bread/ pastry store, the flower shop, the vegetable shop, the cooperative grocery store, the butcher, the hardware store, the police station, the pharmacy, the doctor and health clinic, and the auto mechanic. Maddalena made it her mission to take me around and intro-

duce me to people as well as insisting that I conform to the rules of the street. Living with Maddelana was a recognizable currency; at 82 years of age she was a well-respected person in her community and known for her love of reading and passion for the arts. With common interests, we established a reciprocal bond of admiration that was evident in public. In many ways, I was her apprentice as she showed me the life worlds and the cultural ways of the people in Seneghe.

In Seneghe there are no newspapers. If one wishes to know what is going on in town, people simply go out into the street and start walking. One is likely to cross the paths of a neighbor or the doorway of a house where someone is sitting on the front steps spilling into the street. A salutation is mandatory. It is considered disrespectful to pass someone in the street without cordially acknowledging with "buona giornata," "boun pomerigoio," or "buona sera." Without these cordial salutations, a person was considered an "asino." At any chance, one can ask about the pending city council elections or the time a city council or library enrichment event might begin. For the first three months, from May-July of 2010, it was my assignment to be visible and journal personal impressions and feelings as I constructed my life in Seneghe. While I never stopped having informal conversations, the real work of executing the study was from September-December 2010. Before discussing the study, I will discuss my procedures for the preparation of data for analysis and, lastly, analysis and interpretation.

### 3.6 Preparation of Data for Analysis and Interpretation

In narrative inquiry, Polkinghorne explains, "The goal of analysis is to uncover common themes or plots in the data" (177). My choice in narrative inquiry made sense: within and across the storied voices, I knew I would uncover underlying patterns from which interpretations could be developed, diagramed and delineated. Narrative inquiry more importantly privileges analysis grounded in data. I began with the data and developed my analytical categories by moving back and forth between the data and the thesis that motivated this study.

Above all, these categories are not tight definitions nor are they meant to essentialize the perspectival reality of the breeders. These terms are meant to act as a heuristic that was culturally constituted and to be applied as a vocabulary for discussion in the following chapters. These are as Burke asserts in *A Grammer of Motives*: "Conceptual categories always contain a rhetoric of attitude and rhetoric of motives. There is no way to do intellectual work without adapting a language that simultaneously defines, describes, evaluates and acts towards the phenomena in question" (1969). My hope is to understand the knowledge communication tension of the Sardo-Modicana breeders and cheese makers by learning about their world and deriving meaning from interacting with them as well as making visible my assumptions or ideas.

### 3.6.1 Accounting for Themes: First Level Coding Categories

The process of analysis is not linear. In a highly recursive manner, I derived themes from the data, sorted the themes into categories, reorganized the categories into some form of meaning, and justified the categories through both the data trail and found articles from relevant literature. The process of analysis is not only recursive but necessarily inductive, and in this project the first step I took to account for themes was heuristically driven by the question "What do I know?" The inductive exercise fully convinced me that I was the source of knowing. Although I finally believed as the researcher I was the source of knowing, I was still having difficulty making sense of what I knew because I did not fully understand what I meant by the following found themes: History, Husbandry, Terroir, Industrial Technology, Medical technology, Socio-technology, Science, Lifestyle, Experiential Learning, Formal education, Professional Development, Market, Food, and Gender.

The diagram above shows that the first analytical pass left me with a number of themes, some themes showing a closer relationship to other themes while other themes still stood outside of those relationships. Instinctively, I knew Terroir, or the place (Terroir) where

people (Gender) animated the remaining categories, were central to making meaning of gendered perspectives on land use, but I was yet not able make an interconnection to those categories; furthermore, nothing cohered as a "plot" or a story. Unable to find a narrative structure led me to realize my understanding of the thematic coding system was still too vague. I also was confused about how to code the different types of data, specifically the interviews of words and the sequences of images. With Dr. Grabill's advice, I went back and coded the interviews line by line. I have used this procedure in former oral history projects. Without language, the visual sequences were a different challenge.

Let me underscore what I mean. Typically once I have transferred video data to an archival QuickTime file, I code for content that is identified by timecodes. As I mentioned earlier, I broadly coded in the field and was attentive to content that would serve for a video product, not for this dissertation. Before I could account for themes, I had to swim in the visual sea of data to inscribe a detailed representation of what I observed. The minutiae of the video data I was able to see now and from a distance produced a written text of what I call "thick descriptions." By looking at the data of the actual observations, I was able to see details I had noted in the field through my act of recording them., However, had I not visually recorded the minutia of the details, I would have been lost in the abstract world. The combination of distancing and reflecting back on what had become an embodied experience is what informed the vivid representation in words—now written words that precisely informed my understanding of the themes I was trying to uncover. Finally, I was making sense of what I knew, and I could get down to a purposeful process.

### 3.6.2 Accounting for Themes: Second Level Coding Categories

To reach the second level categories, I counted the occurrences of the fifteen themes across seven interviews and associated video-recorded observations as well as the "code of practice" document. (Hand written observations proved to be rich in reflective data and more

useful in bridging the narrative interpretation of data; therefore they were not included in the second level of coding.) I followed a refined understanding of the original fifteen first level coding categories: History, Husbandry, Terroir, Industrial Technology, Medical technology, Sociotechnology, Science, Lifestyle, Experiential Learning, Formal education, Professional Development, Market, Food, and Gender. These refined categories resulted:

- History was folded into Terroir or placed in a separate Personal History Category;
- Lifestyle was revised as Livelihood;
- Education, Learning and Professional Development were revised as Experiential Learning, Formal Learning and Informal Learning;
- Governance was separated out from Market
- Industrial Technology, Medical Technology, Socio-technology, and Science were revised to Agriculture Science and Technology Complex, Agricultural Machinery and Technology Complex, Food Science and Technology Complex and Veterinary Medicine Complex.

In part, the work of refined understanding included placing the categories in a numerical hierarchy (see Table 2).

At the same time that I ranked the categories, I paused to reflect upon my understanding of the language I chose while seeking meaning from outside sources, dictionaries, Internet sources, and scholarship. I was convinced to use the theme Terroir after much consternation. This term has grown from a specific understanding for and discussion about wine, but has been enlarged among food study scholars who recognize the "quality turn" for place-based food production. The quality-turn in food production compels human beings to utilize their sensory perceptions of taste, smell, and texture or pressure, all of which will be experienced in the following ethnographic text. I have taken care to cite well-known scholars for this purpose. The codes of governance, market, and food science and technology are related

| Second Level Categories | frequency |
|---|---|
| Animal Husbandry | 394 |
| Terroir | 133 |
| Food Science and Technology | 92 |
| Livelihood | 91 |
| Veterinary Medicine | 89 |
| Agriculture Machinery and Technology | 80 |
| Experiential Learning | 76 |
| Governance | 68 |
| Food | 40 |
| Market | 40 |
| Personal Genealogy | 28 |
| Agriculture Science And Technology | 20 |
| Informal Learning | 11 |
| Formal Learning | 10 |
| Gender | 2 females and 5 males |

*Table 2: Numeric hierarchy of second level coding categories*

to terroir, which adds to the complexity of animal husbandry practices, but has been more relative to the role of the cheese-makers over time. Now, with the code of practice, the entanglement of these new social structures have posed constraints on the breeders' fundamental understanding of their animal husbandry practices and their concern for the well-being of their animals.

Another code, lifestyle-became-livelihood, through reason. To me, lifestyle represents more than making a living and, in fact, as an adjective is associated with making an appeal to a consumer by association through advertising. In the case of the Sardo-Modicana breeders, I was looking for a term that had meaning within development studies while taking account of

a person's assets and skills. For this purpose I have drawn from and cited Chambers as a major scholar from development studies.

Several categories grow out of both the formal and informal conversations I had with the breeders. For the breeders, within the context of their animal husbandry practices, they have re-negotiated or co-created new social structures over time, where knowledge is produced. Consider in the least complicated of activities, the breeder, engaged in his animal husbandry practices, will be interacting with the beast positioned on the land. The breeder can decide on a variety of approaches to feeding his animal. He or she might decide to move the animals into a circumscribed field that is surrounded by electric fences. Without much effort, the animals eat the pastured grasses and without much effort the animals defecate, dropping rich nutrients on the earth that fertilize the soil and consequently fixes nitrogen at a microscopic level for the purpose of growing a stand of pasture grasses. This is how breeders have raised their animals for centuries and how they have transformed the environment for the production of meat or the cultivation of plants. Therefore animal husbandry practices can be understood as part of a larger agricultural science and technology system. The one I described could be considered an appropriate technology system. It is a system that does not necessarily impact the land with chemical fertilizers and heavy mechanical equipment. If the breeder decided to bring out additional feed, perhaps when the pastures are not sufficiently providing nutrients for the beast, he or she might haul out hay with a pitch fork or with a tractor. By adding the tractor into the mix, it could be said that the breeder, in their animal husbandry practices, was also adapting to some components of an agricultural machinery and technology complex. Because the breeders want their animals well, they will choose to add to their husbandry practices the veterinary medicine complex. Understanding what the breeders do in each of these categories and how these categories interact is useful to me as a writer trying to make meaning of what I see so I can produce a clear understanding of the breeders'

life-worlds and, more importantly, the motives behind their decision-making process.

Another group of categories I chose to identify are those that compile what I call "adult social learning." As I have elaborated, the breeders have know-how that is passed on over generations. Their know-how is based on empirical observations and hands-on experience that calls upon all of their senses to discern the multitude of stimuli of their focal experience. The breeders, through experiential learning, acquire knowledge through relationships that produce tacit knowledge. On the other hand, they might take continuing education classes taught by an agricultural expert or agriculturalist trained to teach individuals in a classroom setting. I call this "formal learning" and the process in which most schooled agriculturalists learn. On the other hand, a more socially-geared form of learning that frequently takes place on the farmer's land is a more situated learning experience that might involve multiple ways of communication knowledge. These codes of learning are important for understanding how knowledge is shared among breeders and how breeders enact what they know.

Following is a refined understanding of each of the second level coding categories:

Agricultural Science and Technology (AST): descriptions of transforming the environment for the production of animals and plants for human use.

Agriculture Machinery and Technology (AMT): descriptions of agricultural change due to mechanization of agriculture.

Animal Husbandry (AH): descriptions of the agricultural practice of breeding and raising livestock.

Experiential Learning (EL): descriptions of knowledge acquired from relationships and life experiences that produce tacit knowledge.

Food (reference to) (F): in the case of the Sardo-Modicana, cheese and meat.

Food Science and Technology (FST): descriptions of technical aspects from har-

vest and/or slaughter to processing and/or production for consumption of a food substance.

Formal Learning (FL): descriptions of learning that takes place in a classroom with an instructor or person who is trained to teach.

Gender (Gf/m): descriptions of social or cultural characteristics distinguishing between male/masculinity and female/femininity.

Governance (G): descriptions of mechanisms for governing agri-food regulations: actors and processes exercising influence over production and consumption (Stoker).

Informal Learning (IL): descriptions of learning that takes place through reading, writing, listening and dialogue in contexts or opportunities situated in practice for career or personal development.

Livelihood (L): descriptions of the tangible and intangible assets in which people construct and contrive a living using physical labor, skills, knowledge or creativity within the farm-household system (Chambers and Conway).

Market (M): descriptions of the systems, institutions, procedures, social relations and infrastructures for the exchange of goods and services.

Personal Genealogy (PG): descriptions of the personal information tracing lines of descent and kinship relations.

Terroir (T): descriptions of the geographic location characterized by a complexity of interactions impacting the commercial, aesthetic, and ethical qualities of making food (Nossiter and Traeger).

Veterinary Medicine Complex (VMC): descriptions of the science and technology applying therapeutic principles to animals.

The above Second Level Coding Categories finally led me to finding a relationship

among everyone while placing gender centrally among the remaining 14 categories. What might have been evident to others finally became evident to me. Once I situated human beings in the center of complex knowledge systems, I could inscribe a story constructed by their voices. My hope, as a professional communicator is to amplify the voices of the Sardo-Modicana breeder's in a way that has never been heard before. Before we move on, I want to underscore the necessary personal emic process discussed in this chapter, and how it helps me achieve this goal.

In section 3.2 I quoted Malinowski's concept of emic categories which involve a process of classification according to the way in which members of a society perceive and classify their own world" (Franklin 1996). Malinowski asserts, one can "grasp the native's point of view, his relation to life, to realize his vision of his world" (qtd. in Geertz 25). Emic categories can be said to represent cultural perceptions, rather than objective reality or external systems of meaning. With a hand held video camera my attention was focused on grasping the point of view and a vision of the breeder's world. Recording the breeder's empirical world with digital media afforded me the space to reflect and revisit data--all the raw material of impressions and sensations generated from the phenomenal world of the Sardo-Modicana breeders--at a distance from the actual field experience. By adding this additional cognitive step of reviewing the visual data, I was able to relive the field experience and draw upon my own embodied understanding of the breeder's world. Reviewing the data, did work in two ways: (1) it triggered my memory arousing emotions that fed my inventive process therefore enabling me to reside in a personal creative space where (2) I found the best possible language from which I could then represent the breeder's world. I will say this in another way: without the visual data, I would not have been able to feel what I was seeing—a (newly discovered and personal) phenomenon that allows me to uncover the language most faithful to what I perceived. As I viewed the data, I transcribed what I was seeing into words that ex-

tended into sentences. To fully appreciate what I mean, imagine a radio sports announcer describing a soccer match: I was creating language as the action was taking place, in front of my eyes. For me this is a necessary imposing step that (1) obliged me to scrutinize my own understanding of the language I will use to interpret and represent the lives lived by others, and (2) gave me the needed confidence to proceed with the coding and categorizing analyses. In the end, one can never be too sure of the meaning they are making of another's world, yet this process of translation from one symbolic system to another within grounded analysis makes available a shared language for the purpose of communicating and reaching diverse audiences. Consequently, with a shared language between the breeders and myself, it is possible for me to describe, evaluate, interpret and act towards the phenomena of the breeders' embodied sensory knowledge. As Richardson explains (2003), "we craft characters and write lives". With visual data and the process of grounded analysis I can make choices regarding what is significant and what is trivial as I work towards deep fidelity of the participants in this project, as I account for their lives in an impressionistic text. In conclusion, qualitative research methods adhering to an ethnographic approach are especially suited for investigating complex and interdependent social processes. In an attempt to adhere to this approach, I provide in the following chapter my understanding of the Sardo-Modicana breeder's "here and now" reality as it is played out among characters participating in repertoire of social invention.

# CHAPTER 4

*Communication Dynamics of the Sardo-Modicana Breeder's Knowledge*

## 4.1 Getting My Feet Back on the Ground

Sardinia's weather conditions are not as hostile as those found in nearby desert climates of Africa, but at times they are severe and unpredictable, altering activities at a moment's notice. Agricultural practices are constrained by climate and those whose livelihood depend on agriculture are sensitive to the smallest fluctuations in the physical forces of the natural world. Not until I began to actively listen to farmers did I take much interest in the weather. During fieldwork, my host Maddelena who knew the mercurial weather patterns of Montiferru, would make a point of reminding me to take an umbrella or put on a heavier overcoat and lastly always to carry something to cover my head.

My first visit to see a herd of Sardo-Modicana was in June 2010. The day was brilliant with blue skies. Together with Antonicu Ponti and his brother Emilio, we climbed to the highest point on Antonicu's piece of land and from here we could see as far south as Phoenician ruins of Tharros. Finally, I was on the mountain or "su monte" as it is called in the Sardinian language. We drove from the village where the air was calm, but as we arrived on the mountaintop, the wind was blowing particles of dust everywhere. As we made our way to the barn, Antonicu lamented this and insisted we not get out of the truck until he had opened the door of the barn so he could drive us into the stall where we would be protected. He commented that this kind of day is not a good day for cutting hay, and in-fact the harsh winds would likely force him to postpone any plans for working in the elevated fields.

The winds were intense: it was difficult to hold my hand-held video camera with gusty winds shaking my whole body. The wind was a mistral, coming from the northwest and it chilled the sunlit air. My ability to stabilize myself was also confounded by the presence of

rocks under my feet. Rocks? My foot! What I was struggling with were unseen boulders covered by grasses as high as my waist. I had to first pause with each step and use the tip of my shoe to negotiate a protruding surface to rest my foot, as Antonicu held my hand. I heard Celestino's voice in my head as I became a part of this landscape: "This race remains here because intensive agriculture in particular is not possible. There is not water for irrigation, the terrain is rocky and for this it is not permitted to make a big production, but allows us to raise this animal." Celestino, like all of the Sardo-Modicana breeders, has learned to adapt to this harsh rocky terrain. It is a landscape that does not accept the mechanization or intensification of agriculture. The tall thriving grasses remind me of the breeder's strong will to adapt to environmental; their adaptation to this harsh terrain and ability yet to enhance their livelihood. "Su monte" (the mountain) represents a cultural landscape that is constructed through the livelihoods of men and women who create and contrive a living using physical labor, skills, and knowledge within the farm household system. It is here where the breeding and raising of the Sardo-Modicana takes place.

Once I was stabilized on the northwest side of "Su monte" I could take in the Sardinian Sea, for the first time, and the territory of Seneghe which nearly reaches to the western coastline of the island. For a moment I tried to imagine what it would take for a Phoenician sailor or an indigenous shepherd to walk over this treacherous terrain and how long it would take them. It is a twenty-minute passage by car. What was possible to imagine is that in spite of her protected location, Seneghe could have experienced outside influences throughout time.

### 4.2 When Text Disrupts Stable Knowledge Systems

This chapter takes up the central tension of my project, namely, "why can't the breeders fatten their cows?" From the point of view of the agricultural experts, there is a problem. They will say, "the breeders can't fatten their cows." The breeders disagree, they have been

fattening their herds for nearly 150 years within their unique ecosystem located in the territory of Montiferru. What the breeders were struggling with is not how to fatten their animals but rather how to standardize the feed and protocol for fattening their animals to comply with new disciplines directed through a written document instituted by the consortium, Il Bue Rosso. The document "The Discipline of Production for the Protected Geographic Indicator (I.G.P.) "Bue Rosso Del Montiferru" directs in writing, how the animal is to live, what the animal will eat until the time of slaughter, the ideal weight for slaughter, as well has how the carcass is to be conserved and the type of cuts in which the meat must to be prepared for sale by designated butchers in a communicative network that is driven by a consumer the breeders never see. (In 4:4 I will go into full detail on what this document is and what it does.)

It is much easier to sell an animal on hoof, for a living price, when the breed was still a popular source of traction. Now the breeders are selling their product as a high-quality meat that flows through an extended food supply chain. Before the establishment of the consortium, "Il Bue Rosso," the beast was slaughtered locally and sold in butcher shops that prepared traditional cuts of meat to be cooked according to time-honored recipes. The breeders simply took the animal to the slaughterhouse when it was fat, in the spring, after it had grazed on open pastures. Now the breeders are learning to adapt to a process of fattening often referred to as "finishing" where the beast remains sedentary in a stall and fed cereal grains to fatten them just before slaughter, in the last months of the animals life. (I will interchange the terms fattening and finishing in this chapter.) Furthermore, the breeder no longer is in control of making the decision as to when to take the animal to the slaughterhouse. The decision is now in the authority of an agronomist or expert, but never a breeder. The person who has direct contact with the consumer is the butcher and it is ultimately the butcher's marketing performance that will influence the choices of the consumer. Without direct contact with the consumer, profits first go to the butcher, the slaughterhouse and then finally to the breeder.

Before we take a closer look into the worldviews shaping this particular discourse, "Why can't the breeders fatten their cows?" I should make it clear that I have no intentions of arriving at certain truths, but rather I will make meaning by exploring a mosaic of cultural fragments that should help us understand the dialogic relationship between different ways of knowing and different ways of communicating. In this chapter I will emphasize the voices of project participants Celestino Illoti and his mother Geuseppina, Giovanni Mastinu, Antonicu and Emilio Ponti, Cecu Cubbedu, Paolo Serru, and Rita and Penuccia Cubbeda and outliers, Antonio Maria and Loredana Muscas.

### 4.3 How Breeders "Know How" is Communicated

The Sardo-Modicana breeders have a long history with this breed of cattle and therefore have developed useful knowledge about the breed. Before the Sardo-Modicana existed, the Sardo, a small indigenous breed provided milk for household use and was bred for its rustic and maternal qualities. With the onset of the booming durum wheat industry, the breeders applied their animal husbandry knowledge and sought out a bull with robust qualities, the Modicana from Sicily, to make the most of a global phenomenon. Therefore, the existence of the very breed itself is a function of local farmer knowledge. Furthermore, you will learn, the knowledge practices communicated by the Sardo-Modicana breeder emphasize the social production of landscape and nature. In chapter 3:3, I developed distinct domains of knowledge about agriculture as represented in my data. In this section I will discuss the breeders communication of knowledge within their livelihood and animal husbandry practices. Before I move on, I am providing you with an understanding for the following domains I will reference in this chapter:

- Agriculture Machinery and Technology Complex (AMT): descriptions of agricultural change due to mechanization of agriculture.

- Agricultural Science and Technology Complex (AST): descriptions of transforming the environment for the production of animals and plants for human use.
- Experiential Learning (EL): descriptions of knowledge acquired from relationships and life experiences that produce tacit knowledge.
- Terroir (T): descriptions of the geographic location characterized a complexity of interactions impacting the commercial, aesthetic, and ethical qualities of making food (Nossiter and Traeger)

In chapter 2.6 the teleological moment for the Sardo-Modicana is discussed. As I walked with the breeders, I asked questions with hopes of jogging their memory about the role of the Sardo-Modicana in constructing a very distinct agricultural science and technology complex beginning in the 1880s. Antonicu, one of the first breeders to travel to Sicily to purchase a Modicana bull reveals his animal husbandry acumen, "It was I who always went to bring the bull from Sicily…I was younger than 30 years old. I went with the breeders from Santu Lussurgiu and Bonarcado up until the 70s and 80s."

Anthropologist, Carolyn Counihan describes in her dissertation "Bread as World" that wheat production was a major crop along with subsistence agriculture and pastoralism until the 1960s. It was the Sardo-Modicana that transformed the soil for the production of wheat for human use and it was the breeders of the indigenous Sardo who responded to an economic opportunity and crossed the Sardo with the Modicana. Antonicu astutely explains, First we selected for work, for aerating the land to seed. The breeders applied their "know-how" in a network of relations that included large land-owners and land-less peasants. It can be said that the Sardo-Modicana represented an era of prosperity and well-being throughout Sardinia. Both men and women worked in the fields and helping hands arrived from distant villages to reap the wheat harvest. With each season, there was a need to haul and transport things, from people to products. Antonicu continues, "Even the females we chose for pulling

and carrying. I lived with it. I knew it well." Obviously the breeders raising the Sardo-Modicana gained in wealth, sometimes through the exchange of currency and often through trade or a form of lending out the animal for short periods of time. Antonicu explains, "When there was a good provision of grain everyone was calm…had a piece of mind…there was money." Rita underscores and elaborates on Antonicu's story, "We gave the animal for plowing the land, we give the ox...for loaning...only for the time of working the land...When the work was done, the animal was returned. Also for the cart we ported the grain. We went to Oristano, 25 km from here and take to sell things to the stores." In the case of the Sardo-Modicana breeders it is evident they are not adverse to innovation or taking the necessary "common sense" steps to create new or reconfigure existing social relations to meet market demands.

Even when the Italian government encouraged the mechanization and capitalization of agriculture, specifically between the 1950s to the 1970s, the breeders continued to maintain healthy livelihood practices while modernizing (Counihan). In fact, the breeders improved their livelihood when the Italian government facilitated production and dissemination of tractors and fertilizer: the introduction of tractors, hay bailers, trucks and trailers has reduced manual labor, and that is a good thing. Rita showed me an old sickle and three-pronged wooden fork they once used to cut the grasses and bag the hay, while she explained, "we do this work, maybe with a little help. I use the tractor when the land is good. It is like driving car. You might need a hand, but it is much lighter work now. Not like before when there was so much work and in the sun...the hay was work..." Indeed by 1966 the number of beasts had decreased to about 33,000.

Celestino underscores how farmer know-how is passed on, "When there is a problem (with one of the animals), before calling the vet, there is always a friend nearby who comes to lend a hand. Often it is this person who, through their own past experiences, transfers their knowledge. This is (often) how one gains experience; thanks to family, village friends or

business colleagues. Those who have lived the longest, those who know how to birth or slaughter, they are the ones who pass on the experiences The experience here never ends. In our sector...the experience never goes alone."

Celestino continues, "it is a tradition of the familiar, or the family or friends or colleague. Experiential learning begins in the family where individuals are "socialized and acculturated to specific microenvironments" within the farm household (Netting). Rita explains her work in relation to her sister, Pinuccia, "we work together. We are two sisters, we are always together." Giovanni the youngest of the breeders, makes most of his business decisions himself, never-the- less he may seek out his immediate household relations such as his mother or he may speak with Cecu who is his Godfather. As Giovanni explains his learning relationship with Cecu, "we always work together and often I seek out the help of others." I have seen knowledge imparted from one generation to the next when watching Cecu and Giovanni interact.

Following is an example of knowledge sharing while inoculating Cecu's herd. Giovanni and his brother were involved in rounding up the cattle and situating them for Antonio Maria to run through a 2-3 minute procedure. It is brief but annoying for the cows that are given two and/or three injections. On one occasion I watched Giovanni place the horns of a cow in his hands. The cow had already been roped and harnessed. Cecu who was also working with the cow and Giovanni's brother give a hand. Cecu tried to place a plastic identification tag in her ear and she resisted. Even with the help of Antonio Maria, they were not able to get the tag punched into the cow's ear. With all of her weight the cow resisted. Finally Cecu had an idea and led the cow to a tree where he tied her head close to the trunk. Between the four men they were finally able to place the tag, but not until Cecu told Giovanni to place the crown of the cows head against the tree trunk with the horns straddling each side of the trunk. This notion did not occur to Giovanni, but in a moment of breeder interaction the task

was completed. Drawing upon personal skills of perception, such as listening, speaking and mirroring feedback of others, breeder "know-how" is diffused. The next time Giovanni has a reason to stabilize the head of a cow he might consider this technique that draws on the affordances of a tree trunk.

Selecting an animal, perpetuating a genetic strain, or domesticating a breed is as much an art as it is a science. Regardless, it is knowledge-intensive work. The art is in the "seeing." The science is in the "knowing" the "what" and the "how." Rita explains her intergenerational circumstances that trained her to see, "I finished school and I started this work...When I was a child, when my father and my uncle did not use the car. I went when I was 18, 20 years to Abbastanta and we sold the cow there…in the "fieri" (market) for a price "a vista" (a seen or looking price).Not only has Rita developed the art of seeing, she has developed the affective art of "knowing." Rita continues, "We have affection for this animal because if you don't love this animal, you can't work with this animal. I help from the time of their birth. I want them well (means I love them.) If you do not want the animals well, you cannot work with them. You want them well the moment they are born. You begin when they are born and then you follow until the end...to the moment of the slaughtering...we say. The nurturing (raising of the animal) continues like this…if you don't want the animal well, you cannot do this work."

On of the critiques of open range grazing of beef cattle in large continents such as the United States or Australia is the lack of human animal contact. For the Sardo-Modicana limited marginal land and small pieces of land used for grazing informs the domestification of the livestock. It is a custom for the breeders to see their animals daily. Giovanni explains, "I need about one to two hours to work the animals in the morning. I see the animals everyday when I feed them. The animals are fed hay when the grasses have died down and until they are abundant enough for them to catch the tender greens between their teeth. From about

June through December the animals feed on dry hay. During the rainy season and when there is an abundance of grasses the cows are fat, full, and calving. Hence, the breeders are checking in on the cows and gathering excess milk."

For the breeders, their livelihood is constructed through their animal husbandry practices. One of their interests is to annually select cows and breed them for the best milk production. Each breeder has learned this from the generation that came before them. Celestino explains, "It is not work for this animal to produce milk, (the cow) produces a calf that needs the milk. When she produces more milk then is needed, there is enough to make cheese. For this a calf is born every year." Only the fresh, chlorophyll rich grasses will produce enough milk to make cheese. Moreover, the breeder basically has to move the cow from one piece of land to another for the cow to graze and as Celestino explains, "they consume what is available. If in May and June the grasses are abundant they fatten up more. If the grasses are scarce it is necessary to integrate forage to hold in a good state. Also with this animal if it is treated well, it is absolutely fit for the autumn when the grasses are scarce."

Celestino is describing a type of rotational grazing which in his mind is not a new practice or modern technology. Livestock grazing in an open environment are constantly moving: the calories they consume never have time to accumulate as fat cells in the adipose tissue. This form of animal husbandry impacts the taste of the meat and cheese as well as the texture and color. It could be said their role today is to maintain the grasses and add nutrients to the Montiferro ecosystem. The Sardo-Modicana has an ability to conserve its energy for long periods of time adapting to the rustic Montiferru conditions. CeCu underscores the attributes of the Sardo-Modicana to be valued while revealing a knowledge about the Montiferru ecosystem, "For fortuna (luck), the animal is robust. There is more concern for wolves or wild pigs." Rita characterizes the territory, "Not all of the places are irrigated or workable, some are dry. With this animal it is possible to have land that is less workable...the land is

good with this animal." For Rita her affinity to Montiferru is understood through her personal relationship with the Sardo-Modicana, "the land is good with this animal." In ecology, reading the landscape refers to an analysis of natural dynamics to reveal distinctive interrelationships in space and time. Reading the landscape is not just about identifying landscape patterns; more importantly it is an interactive process that involves humans and nature (Wessels 21). Paolo underscores the value of this breed, "There is no other animal that can live in this country (Montiferru). The pastures are marginal and this race is adapted to these pastures here...with little they have survived. Other races cannot survive here." The interactive process between humans and nature can never be underestimated, especially when the object of nature is a living creature such as the Sardo-Modicana. A breeder's attitude and human attention towards their herd has been found to increase milk production and impact animal temperament (Bertenshaw and Rowlinson 2009).

Bina Agarwal puts forth the idea that a relationship between women and nature is constructed in certain contexts...a consciousness and sensitivity is "rooted in their material reality, in their specific forms of interaction with the environment" (Agarwal 126). She makes this argument to counter the eco-feminist assertion that women have an innate intrinsic intimacy with nature. In the case of the Sardo-Modicana, both men and women have a relationship to their environment, vis-a-vis their affection for this breed. Paolo asserts, "I am in love with this race. There are races more important, but I have no interest." The most distinct human attention is displayed by Antonicu and Rita who have names for each animal in their herd: both cows and bulls. Antonicu, when milking his cows will call each one by name in Sardo. They are affectionate and funny, such as "graziso." The human animal relationship found among the Sardo-Modicana breeders does not exist in the commercial livestock industry. Consequently, the human nature relationship takes on greater meaning when the flavor of the meat depends on the pastures the animal feeds upon.

The work of Celestino, managing his herd, and the work of his mother, Geuseppina, making cheese, intersect at the place of taste derived from the grasses the animals eat. Both understand the grasses of "su monte" provide a distinctive flavor to the meat and the cheese. Here is where the age-old understanding of terroir is understood by the breeders and cheese-makers. Celestino explains, "The animal lives on the grass and outside of the stall. The flavor and the characteristics of this meat comes from the grasses, truly from the grasses." Celestino's mother, Geuseppina, underscores the notion of terroir, "The taste is diverse. My mother could tell when the cows were near Narbolia, because there was a taste of Mirto. The taste changes from pasture to pasture and the rennin changes from pasture to pasture."

At this point I want to pause and retrace the analysis exercise I discussed in chapter Three. I have shown that the livelihood practices of the breeders and the cheesemakers is situated within the categorical theme, terroir. In this section, I make evident the social production of landscape and nature through the knowledge practices communicated by the Sardo-Modicana breeder families. In other words, I have made clear how the breeders interrogate and read their environment in particular ways and that, from their perspective, they are communicating both descriptive and prescriptive knowledge (Lyotard). It can also be said that the animal does not need to be become fat to survive, it has adapted to a harsh arid climate, yet it is evident that the breeders know when their animals are fat, how their animals grow fat, why their animals grow fat and for what purposes they grow fat. To summarize, the breeders have shaped a particular agricultural science and technology complex in the Montiferru territory as well as adapted to the mechanization of agriculture when they participated in Italy's modernization project or the agriculture machinery and technology complex. Growing from over 110 decades of animal husbandry practices, the breeders "know-how" today characterizes the complexity of interactions impacting the commercial, aesthetic, and ethical qualities of producing or making a food product. In the next section I will show you how the breeders use

their “know-how” to construct and communicate within (1) new market institutions and infrastructures for the exchange of goods and services, (2) actors and processes governing agro-food relations as well as exercising influence over production and consumption, and (3) the technical aspects impacting the slaughter and processing of meat for consumption.

### 4.4 Knowledge Does Work

“Schooled knowledge” characterizes technical or scientific experts who have acquired through formal learning the necessary technical knowledge to share with “end users.” In the case of the Sardo-Modicana, the “end users” are the breeders, who once were leading in the socially constructed stable knowledge system, as well as shaping an important agricultural science and technology complex through their “know-how.” Now, in a paradigm shift, in order to adapt to changing market complexes, the breeders are the receivers of “schooled knowledge” from the scientific experts, specifically a standardized cereal-legume feed for fattening the beasts to sell to an unknown consumer. As paradigms shift, so does stable knowledge give way.

In chapter 2 we were in “Piazza dei Balle” while taking in the morning sun and watching people gather in their traditional dress to begin the carnival celebration. Today we are standing in the same piazza. Four different one-lane cobbled-stone streets spill into the public square that is lined with a few commercial buildings to include the local cooperative grocery store and the butcher shop dedicated to the sales of “Il Bue Rosso.” There also are a few houses, most occupied. Next to the butcher shop is one large old home with a “for sale sign” on the front door. I arrived in the piazza by foot at about 8:45AM and with an umbrella opened to protect my camera from random rain drops. I stood across from the office where the veterinarian and the agronomist go every Tuesday to address the needs of the Sardo-Modicana breeders. The office where the breeders find the experts is located above the butcher

shop. As I waited, a couple of breeders arrived in their vehicles and parked in the piazza near the butcher shop.

The agronomist and the veterinarian showed up at 9AM. Before entering the office the two experts talked to each other near the back end of their car, and as they talked, I approached them. I introduced myself and the agronomist named Maurizio respond with familiarity and invited me up to the office. He recalled we had a prior conversation in December about my family who are vintners in Piemonte. Maurizio and his wife (Celestino's sister) produce a wine that they are marketing on the continent, and during one food fair, they presented next to my cousin, who is making beer. This "small world" connection is a valuable currency here. The veterinarian and the agronomist are key actors representing what I am calling "schooled knowledge" and more particularly the forms of scientific expertise associated with the food sciences. Both men have acquired through formal learning the necessary technical knowledge to guide those breeders who seek to comply with a standard of production according to the "code of practice."

In chapter 2, section 2.7, I explained "the European protection scheme for Geographical Indications such as "the protected designations of origin (PDO) and the protected geographical indications (PGI)" seems to fulfill the goal to conserve and to support traditional resources and their sustainable exploitation. The legal framework of (EC) no 510/06 is an authorized body that created the exigency for "The Discipline of Production for the Protected Geographic Indicator (I.G.P.) "Bue Rosso Del Montiferru:" a formal discipline specifying new fattening procedures instituted by the consortium "Il Bue Rosso." The "code of practice" prescribes (1) how the animal is to live, (2) what the animal will eat until the time of slaughter, (3) the ideal weight for slaughter, as well as (4) how the carcass is to be conserved, and (5) the type of cuts in which the meat must to be prepared for sale by designated butchers. This document acts as a network of communication that makes affordances for both "farmer

know-how" and the "schooled knowledge" by technical or scientific experts. The "code of practice" is by no means fixed, and is an example of what Sauer (1998) would call "a living document." Indeed it is in the performance of the "code of practice" that creates tensions and conflicts when animal husbandry practices collide with the governance of the food science and technology complex and market complex. The veterinarian addresses the nutritional and health principles for the Sardo-Modicana and the agronomist controls or grades the size of the animals in the finishing phase prescribed above as 1-3.

In theory the veterinarian and the agronomist are managing the mechanisms for governing agri-food regulations in the food science and technology complex. On the ground they are exercising influence over the production and sale of a meat product. The breeders are accustomed to interacting with experts from the "schooled sciences." Cecu speaks for all of the breeders, "I talk with an agronomist and vet with the breeders association...they come every week to control the fattening process and control the food the animals eat." Cecu is talking about the finishing process I characterized above. While the Sardo-Modicana is in its last three to four months of their lives they are placed in a confined area, a stall, where they remain sedentary and are feed cereal grains that transforms the once lean meat into a marbled juicy meat. The finishing process is a new feeding procedure the breeders are learning about and adapting into their animal husbandry practices. Here is where the tension lies: between compliance and noncompliance. Before I move on with this story, lets take a closer look into the worldviews shaping this particular discourse. Celestino will tell you, "it was easier 25 or 30 years ago to feed the animal on pasture and then sell it and not think more about it." Celestino is referring to a time when the animal was raised for traction and sold as live weight within the agricultural science and technology complex, as I explained in the section 3 of this chapter. Giovanni underscores Celestino's thoughts, "…in the last twenty or thirty years…the race (has) been sought after for meat." He continues to explain that without much interven-

tion by the breeders, “We never fattened the animals; never. We sold in the first of May when they were fat from eating the grasses.”

Giovanni is inferring that the animals naturally gain weight in the early spring as a result of eating a wide variety and abundance of grasses that had sprouted during the November rainfall. With the creation of “Il Buo Rosso” the consortium and the “code of practice” the breeders have taken steps to adopt new feeding protocols and to this Cecu peels away another layer to their reality, “The culture for fattening the meat was never before...the grain it has not been our habit...Cecu like all the breeders now are confronted with adapting “schooled knowledge” into their known animal husbandry practices.” Now the breeders are confronted with the fattening their livestock with a cereal-corn feed called “mangimi” which is fed to the animal while it is stationary in the stall. Let’s now go back to our story.

I climbed up a narrow staircase with steps in marble. It was dark and at the top of the stairs. In the dim light I could see a long corridor leading into the back part of the house. To the left was an entrance that led into a large room that was partitioned off to create a small office in the front of the house where there was a window overlooking the piazza. In this room were 4-5 chairs, a cabinet, a desk, and a copy machine. The desk was used by the secretary of the consortium who attends to the business of the consortium one day a week. I took a chair near the desk where the secretary was sitting. Maurizio took a chair across from me and the vet stood near the window. We made casual conversation as we waited for the breeders to arrive. Eventually a young man, probably in his thirties, came in with a concern for his livestock, and in particular for a cow that was showing signs of bloat. As he explained in Italian, I listened and understood the condition he was describing. The animals were getting sick. They were no longer standing because they were uncomfortable in their lower stomachs. This is a common concern and one that occurs when a cow eats too much of any one thing or eats the wrong food. It is dangerous. The animals can die. It was determined that the agronomist

would have a look at his herd and this cow after he took a look at another breeder's bulls who were finished out for slaughtering. The three of us climb into a 4x4 vehicle and headed out to the first farm that is off the main road heading out of town towards Oristano and the Compidiano plains. As we drove, I explained my fieldwork to Maurizio and my interests in knowing how the breeders communicate with the experts and how the animal is fattened. Maurizio listened and he underscored how the breeders communicate with the experts, the transmission of knowledge is oral. As we drove through a fine mist of rain, I recalled how and from whom I had learned about the communicative practices between the breeders and experts.

Generally the Sardo-Modicana breeders have readily accepted innovations coming from outside the Montiferru region. One example is the prevention of disease. The prevention of tuberculosis is a perfect example of this practice. The breeders also willingly took on a new routine within their daily habits, an adaptation that has transformed the livelihood of the breeders and the well-being of their animals. For some there is a vivid memory of a time when tuberculosis spread across the region and weakened the herds leaving those that survived lame and limited not only as a draft animal, but also as a generative species. Today the public vet yearly attends to this disease, and the breeders do not take much concern for this particular stress to the animal. CeCu reflects, "Now fortunately we do not have illness. The public vet, Antonio Maria comes once a year to control...above all we are satisfied when the animal is well. If they don't eat, I don't eat." Paolo also recalls when he first acquired his original herd in the late 1970s or early 1980s, "The ranches in the valley had them (sickness) more...in the first years there were 4,5,6 heads that were sick. It is obligatory now to have vaccinations...now there are no illnesses."

The current generation of breeders like Giovanni are too young to have a memory of a time before the inoculation for tuberculosis. To him this is a normal procedure and not one he considers an innovation. At my suggestions that this was an example of expert-driven innova-

tion, he shrugged his shoulder in an unruffled manner, “The vaccination of the animals is something that has been around for about 30 years so for me it is not an innovation, it is something I have always done.” The obligatory vaccination of the animal has proven to be a valued procedure which the breeders do not find problematic, and as for the youngest breeder, Giovanni, who is 37, it is routine. The breeders realize and appreciate the relationship between practicing good science and health. As Rita, explains, “Antonio Maria, the public vet, takes samples of blood to check for parasites...our territory is healthy. One time a year you have to do this control and in these times there are no sicknesses.” This example is one instance of many innovations that have readily been communicated to local breeders and adopted by Sardo-Modicana breeders into their animal husbandry practice. Willingly and with satisfaction the breeders have entered into the veterinary medical complex: they are participating and continuously constructing the complex through their narratives.”

Our trek to examine the sick cows continued. We had arrived at the gate of the farm where a cement shelter stood and many smaller shelters attached to the larger structure. There was a very muddy lane leading to the structure where we found three bulls confined to a stall. The landscape was strewn with debris of all sorts: old tractors, old car parts, a pile of fresh bones, mangled pieces of metal, barrels and various plastic objects. It was an utter eyesore. I was embarrassed for the farmer, and when I looked at Maurizio, I could tell he was disgusted as well. We made our way through the sloppy mud and reached the opening of the structure that protected the bulls from the elements. The owner was feeding the animals hay, and when we approached, I put out my hand to shake his, but he gave me his arm, indicating his hands were dirty. We exchanged names and Maurizio explained why I was tagging along.

Maurizio looked at the animals, and while he examined them, he explained his objectives. Facing the broad side of the beast, he looked along the spine for horizontal line from the head to the pelvic bones. The back should not be concave especially in the rear area and

the upper back should not show signs of the pelvic bones. From the side he then moved to the rear of the animal and looked at the buttocks and thighs. These muscles should be full and rotund. When looking at the hind end of a beast the stomach should not enter the line of vision: when the rear is filled out it blocks the view of the stomach bulging from the middle section of the beast. Maurizio took notes, jotting down the number from the ear tag of every animal, setting the date, and estimating the weight. He pointed to one animal and commented that it was "piu bella" (more beautiful) than the others. That animal was closer to the ideal weight than the others. The ideal weight is about 280kg to 340kg. There is a range between 40-60kg for error. I asked the breeder and Maurizio if they ever argued about the exact weight of the animals, and they proceeded to tell me they often would disagree. In reality they would debate the weight as a way of demonstrating their particular perspective of knowledge-making or the difference between scientific and technical expert's "schooled knowledge" vs breeder "know-how."

Making salutations, we turned towards the 4x4 to leave as two full-grown hogs were ambling over mounds of dirt and across the debris-covered landscape. Maurizio was exasperated and asked the breeder "what was all this stuff." He then looked at me in a befuddled glance and I nodded my head in agreement. This farm was an eyesore: it looked like a junkyard and was by no means a Bella Figura. We headed out or rather deeper into the hinterland of the territory over a poorly paved road that eventually became a highly rutted and mucky trail that only a 4x4 could pass. The sides of the trail were at times lined with stones covered in thick bramble and shrubs creating a sense of adventure. In the fields beyond, the walls were covered in fresh green chlorophyll filled grasses and wild flowers. I could see daffodils and a white trumpet shaped flower as well as the lethal plant horses are never to eat. A few lone almond trees were blooming, but the full heralding of spring was still to unfold. Maurizio asked me in which discipline was I situated. I explained our field as a study of commu-

nicative practices, and it was for that reason that I was interested in the traditional knowledge and the transmission of innovative knowledge over generations and among breeders and with experts. Finally, we arrived at a grass covered “prato” (lawn) that was circumscribed with rocks and at certain points intersected with smaller rock partitions. Situated in the back-ground of the 180-degree expanse was the barn, a cement structure with a lane leading to it. We followed the lane and arrived at the barn and as we left the truck I could see bobbing horns above of the cement walls of the stall where the animals were finishing.

Earlier in this section I explained the “code of practice” prescribes (1) how the animal is to live, (2) what the animal will eat until the time of slaughter. Cecu summarized specific communicative interactions between the breeders “know-how” and the scientific experts “schooled knowledge, ‘the agronomist come(s) every week to control the fattening process and control the food the animals eat.” Cecu is talking about the finishing process I character-ized above. In its last three to four months of their lives, the Sardo-Modicana is placed in a confined area, a stall, where they remain sedentary and are “mangimi” (cereal-legume feed) that transforms the once lean meat into a marbled fat juicy meat. The finishing process is a new feeding procedure the breeders are learning about and integrating into their animal hus-bandry practices.

We entered the structure where the Sardo-Modinca was held in a stall. In front of me were a 25-foot wall of hay, and two big bags of grain suspended from the ceiling and hanging down to a container where the mangimi-cereal grain feed could be parceled out and fed to the animals. The breeder went over to the grain, and Maurizio followed, as the breeder took a container and showed him the cereal mix. Maurizio and the breeder conversed, and in the end I heard Maurizio say “orzo”-(barley) and “maize”-(corn), but “no pulpa”- (no sugar beet pulp). Give the bull “proteine” (beans or peas). When the breeder showed little response Maurizio underscored that “pulpa”- sugar beet pulp was good for lactating ewes and even

cows who need quick release energy, but not for bulking up a steer. I was feeling embarrassed for the breeder who might have felt stupid in front of me and made a comment to him, "there is always something new to learn in agriculture." The breeder, the nephew of Rita and Pinunccia appeared to agree in a kinesthetic gesture. The breeder was at a loss for words, so he used his body to communicate his response.

Knowledge does serious work. In the case of this breeder it is evident that he had not fully adapted to the new strategies for fattening his cows. He did not understand that "pulpa"-sugar beet pulp is like feeding an animal pure sugar for instant energy rather than feeding the animals complex protein legumes which is like feeding an animal pasta that is converted into fat when the animal is sedentary. I couldn't help but wonder why Rita and Pinuccia's nephew was feeding his animals the "pulpa"-sugar beet pulp for fattening his animals.

Questions raced through my head like boxcars on a train track. Was he stubborn? Was he resisting "expert" knowledge? Why didn't he consult his aunts Rita and Pinucci about mangimi...certainly his aunts would know this feed was best utilized by lactating cows? Once my mind relaxed and I sorted through former conversations I had with Rita, I began to think she might have told her nephew to call the vet. Rita once explained the reciprocity among family members when sharing experiential knowledge, "If my nephew needs help, I help him. If I need help, he helps me." Perhaps once Rita knew her nephew's cow was ill, she urged him to call the vet whom she relies upon for "schooled knowledge," "The vet from the consortium, Dr. Buso, comes when I need a health check or when I need to control the fattening (of the animal)…I call him."

Clearly Maurizio had explained to the breeder that "orzo," "maize," "proteine," was the standard legumes used for fatten cows. I was there, I heard him. Suddenly the voices of all the breeders flooded my head, but it is Celestino's voice who commanded my attention. For Celestino there are cultural practices from the past that enlarge the contributions of

breeder's "know-how" to both the veterinary medical complex and the food science and technology complex. Furthermore, Celestino intersects his understanding of two contemporary communicative complexes when he refers to experiential learning he has acquired from his vast array of livelihood experiences and specific animal husbandry practices. Celestino prides himself in knowing botanical remedies that help heal an animal's wound. His knowing grows out of experiential learning specifically with his mother Geuseppina, "If I make an unusual treatment that maintains the animal with medicine, the experience is not only traditional but innovative." As I explained earlier, the breeders want their animals well, thus blending knowledge from the past with formal "schooled" knowledge makes sense to Celestino. Moreover, he is contributing to the contribution of a hybrid knowledge structure, "To give certain feed in a certain period to help the animal in the ultimate phase of fattening before taking to the butcher...all of this experience you acquire through, thankfully, dialogue and work done, not only within the ranch but with the rest of the community." Celestino is explaining what has become a common routine in his animal husbandry practices: fattening the meat of the Sardo-Modicana for a modern-day food consumer. Rita's version of the fattening process aligns with Celestino's, "In the modified stall the animal grows much more but is not treated in the same mode. The animal of the consortium, we must use the mangimi without GMO during the last period of fattening. When it is ready, a controller comes to pass the animal to the butcher. The controller is from ARA...the regional breeders association. A technico."

All the breeders want their animals well and to maintain a well-cared for animal the breeders strive to abstain from using feed that has been chemically treated or genetically modified. The only pharmaceutical treatments the animals receive are preventative, for death causing diseases. They would never fatten their animals with hormones. When the breeders express a desire to improve the meat as I now summarize, the breeders are specifically improving the meat for a modern-day food consumer. Rita continues, "The food is natural that

is why we say it is better. There are no pharmaceutical treatments." Not only does a modern-day meat eater desire a cut of pink meat marbled with fat, free of antibiotics and hormones, but they are also looking for convenience. Nor does the modern day consumer know the traditional recipes or classic Sardinian cooking.

Let's reflect upon what we know. Originally, the Sardo-Modicana was never slaughtered for commercial consumption. Only in the last twenty or thirty years has the race been sought after for meat and only in the last four or five years has the meat undergone a fattening process. The structure of the meat is poor, explains Cecu. "I could say for about ten years we have thought about fattening, because we could not sell the animal. There was slogan...we have a product of quality, but who can sell it? The culture of fattening the meat was never before...the grain has not been our habit. It was born among us you could say." Giovanni underscores, "We never fattened the animals. Yet to make a profit and for the animals to earn their keep something had to be done." Cecu reluctantly told me, "everyone has this problem with fattening. There are other animals that fatten easier or better...but we need the money. Everyone lives by making more money."

The knowledge held by these three breeders was made by human communicative action between the breeders and the experts with "schooled knowledge" likely under the same conditions: on their farm within the context of their animal husbandry practices. Slowly the "schooled expert"-driven innovation has motivated new behaviors in Celestino, Rita, and Pinuccia and hopefully eventually their nephew. If knowledge does things, then rhetoric is close behind to form a task. In the case of these three breeders who have embodied the "schooled expert"-driven knowledge, their practices have changed to show that "fattening" has taken on new meaning and values which are found in the structure of their discourses. As asserted by Bitzer, "In short, rhetoric is a mode of altering reality, not by the direct application of energy to objects, but by the creation of discourse which changes reality through the

mediation of thought and action" (1-14). I know innovation in a well maintained farm system can be difficult and stressful when a breeder must change their way of thinking and thus animal husbandry practices, yet I have not heard a note of lament coming from Celestino, Rita, and Pinuccia. Celestino is pragmatic, "This is a change that we have to make, it is obligatory."

## 4.5 Conclusion

For much of the twentieth century scholars understanding the role of local knowledge in sustainable agriculture and rural development will refer to Robert Chambers and colleagues who assert, "The farmer must educate outsiders; the poor must ring outsiders down to earth" (Chambers 201). In this concluding section I will reflect on how the Sardo-Modicana breeders might share their "know-how" with traditional agricultural specialists, such as agronomists, plant pathologists, dairy scientists, and agro-forestry practitioners according to different ways the breeders see themselves fattening their beasts. In this concluding section, I will look back so that I can reflect on what this study might mean for the research community and the Sardo-Modicana breeders. First I will discuss the issue of fattening as change in communicative practices and modes of learning. Then I will speculate on the future needs for the breeders, agricultural specialists, and the consumer as a vision for the cultural heritage of a territory.

### 4.5.1 Changing Communicative Practices and Modes of Learning

Clearly the breeders know how to fatten their cows within their unique ecosystem located in the Montiferru territory. What the breeders were struggling with is not how to fatten their animals but rather how to standardize the feed and finishing of their animals to comply with the regulations of the food science and technology complex that is driven by a consumer they never see. The breeder's struggle is complex and began when the code of practice was composed. Ideally, the text was created to reduce a level of risk in times of uncertainty in the

global food system. But beyond that, as many researchers in professional and technical communications have demonstrated, "Producing text carries with it the potential for both modifying and maintaining cultural patterns" (Law 1994). Rita's voice grabs my attention, "Change...we have not changed anything. For us it is the same. There are journals, but here in Sardinia, nothing changes." Slowly I was beginning to understand. While she does not say it, Rita is implying that the necessary knowledge needed to raise and nurture the Sardo-Modicana is stable. What is changing is how the breeders communicate what they know and from who and how they take in new knowledge. Winsor helped me grasp this point while observing organizations in which knowledge is unstable and by illuminating that when learning takes place on a daily basis, it is synonymous with change. Moreover, Winsor asserts,

> learning is accomplished not just by mental activity but also by physical and social experience, or what she calls distributed cognition. Let's first take a closer look at the breeders who are maintaining cultural patterns and then those who are modifying cultural patterns.

The Sardo-Modicana owned by breeders who have not complied with the code of practice will be found feeding on green pastures in the winter/spring months and sun burnt fields where hay is put out in the summer/fall months. The breeders will go to the open pastures or forest in search of the beast. Exploiting their visual perception, the breeders will cast their gaze upon the open landscape with anticipation of seeing the beast move across the land. Several of the breeders you have met have decided not to enter the consortium, Loredona Muscas is one of four. After listening to the experts such as the sociologist who created the code of production, the scholars from the academy, other livestock breeders from Tuscany, the advocates from Slowfood International and even the cooperation from the GAL intervention, Loredana declined. No doubt she took into consideration her herd and moreover her father's legacy. Dr. Muscas wrote his dissertation on the Sardo-Modicana breed when a

student at the University of Sassari in the 1940s and then devoted his career to the beast. Loredana's father was a veterinarian in the Montiferru region and the primary doctor for all the Sardo-Modicana herds in the area. Consequently, Loredana knew well enough that changing the feed of the animals would ultimately change their metabolism and possibly impact their disposition. For Loredana fattening the animals according to the code of practice, made no sense.

From Loredana's perspective, while the code of practice was written to serve the breeders who are the designated user of the document, it does not fully take into account all the time honored knowledge of the breeder's animal husbandry practices. For professional and technical communicators, and particularly those working towards narrowing the gap between the two worlds of humanity, such as Doheny-Farina, Killingsworth and Steffens, Winsor, Blythe, Grabill and Riley, Propen and Schuster, Teston, Rivers, and Sauer who embrace humanistic reform, the code of practice is a challenging text to understand. As I mentioned in chapter 2, the code of practice was written by the sociologist, Dr. Caredda, for the purpose of acquiring a Geographic Indication for Protection (GI) of and reward for indigenous knowledge. The text clearly draws from historical documents, breeder's knowledge, butcher's knowledge, and consumer's tastes as a means to protect cultural practices that maintain local eco-system land management. This study builds upon Killingsworth and Steffens concern on environmental impact statements which looks at documents written by a team of bureaucratic writers that reduce the language talking about human resources to the productive functions of human-beings. The code of practice written by Dr. Caredda shows the reemergence of a narrative social text and in that sense, the document can be understood to represent the intended audience with language that displays an environmental ethos. "Following the text" as both Doheny-Farina, Killingsworth and Steffens have, has proven useful in particular to understanding the "action forcing interpretation" of the code of practice by the Sardo-Modicana

breeders. For Loredana, the code of practice did not take into account the well-being of the beast. Therefore, from Loredana's perspective, one can assume the code of practice was a failure.

Another breeder, Paolo Serru, entered into the consortium, but after a few years stopped complying because he asserts, "The consortium doesn't give a structure...(or) search for a line to follow." Antonicu has reluctantly followed the code of practice but he laments, "You need to spend an enormous amount (of money) to prepare for slaughter (to fatten)." In the beginning, the breeders calculated they could budget in the costs of additional feed with a subsidy the EU Agriculture Policy provided for farmers and breeders making a shift to more sustainable practices, but for Antonicu, "It costs more to spend than to profit." He is not exaggerating: the grain is an off farm expense that seems to annually escalate in price. Giovanni on the other hand is optimistic, yet after 4-5 years of trying to fatten his herd, he gave the work of fattening to Cecu. That is not to say Giovanni lacks ambition or vision, "I always try to search out a more profitable market. At one time I had hogs and donkeys. Now I have olive oil and Sardo-Modicana." Giovanni concludes, "The breed Sardo-Modicana is still a "cantiere aperto" (an open case). This race is fairly young. We need to see where we are going. We need to be more scientific about our decisions. The consortium should decide what they wish to research."

My observations of the tensions expressed by Giovanni, Cecu, Antonicu, and Paolo represent the extent of deliberation the breeders are compelled to consider when shifting from a stable knowledge system to adapt to new practices represented in the food science and technology complex. Killingsworth and Steffens aligned with Teston raised the question, "How can a genred set of generalized, standardized guidelines bridge the gap between personal experiences and professional expectations" (345). This same question rings true in this study. The breeders take pride in their profession for the very fact that their animal husbandry prac-

tices are based upon a stable knowledge system, handed down over generations and centered on treating the animal well. Winsor's notion of knowledge work in terms of distributed cognition helps us understand this tension and to see the cultural practices of knowing. As Winsor asserts:

> ...distributed cognition is the rule rather than the exception in human activity. Therefore, thinking is not treated as an action that takes place wholly inside an individual's head but rather as an activity that is distributed among the individual, other people, the physical environment, and the tools the person uses including language and text. (6)

For Celestino, Rita, and Cecu their words have become deeds and their practices are tracing out new cultural patterns. They are complying with the code of practice and consequently their communicative practices have engaged in a learning of a different kind. The most recognizable difference between those breeders who are observing the guidelines for fattening and finishing the beast, as well as timely slaughtering, is their relationship with a technical advisor and veterinarian. The prescribed practice for finishing the animals calls for a new feeding protocol, one that necessitates that the breeders adjust the kind of feed and the amount of feed the beast consumes. Celestino is the most emphatic among all the breeders, "The feed is simple grains...this provides the consumer with a meat that is more tender and more red. Otherwise the meat is more tough and darker. This is a change that we have to make, it is obligatory." Celestino has demonstrated a high level of compliance by completely adapting his farm system to the new feeding practices mandated by the code of practice. Moreover, by modifying his traditional feeding practices, he has been compelled to learn and he implies, "Study, read, and ask others to understand. This is normal for any other product. The market obliges one to move in that mode."

The complying breeders move their animals from their natural habitat of open pastures and forest, placing them within a sheltered cement structure that may be completely enclosed or partially exposed to the elements. The movement of the beast is further restricted either by a rope that is attached to their horns and tethered to a wall or by binding their front legs together just above their hoofs. The beast's activities are limited for 3-4 months before they are taken to the slaughterhouse.

Limiting the Sardo-Modicana's activities creates a new focal point of activity between the breeder and the beast and consequently, a new communicative space is created where the breeder weekly interacts with a technical controller who is making observations on the weight gain of the animal. Cecu and Rita explain how they routinely interact with agriculturalists. Rita begins, "the animal of the consortium, we must use the cereal without GMO during the last period of fattening." Cecu echoes Rita, "I talk with an agronomist and vet with the breeders association...they come every week to control the fattening process and control the food the animals eat." In the end Rita concludes, "When it is ready, a controller comes to pass the animal to the butcher. When the animal is good prepared, we take it to the butcher."

Following Winsor and her words of wisdom, as professional and technical communicators working in the public sphere we are compelled to take heed by slowing down to "see the cultural practices of knowing." For this study, I identified that the breeder's way of knowing was acquired through experiential learning, formal learning, and informal learning. Winsor, in her workplace study explained in "[L]earning to do knowledge work in systems of distributed cognition" loosely determined four categories where learning was observed to include: formal training, mentoring, hands-on learning, and "fiddling around" (349).

The complying breeder is learning to feed the animal with a new cereal mix that requires a disruption in the tried and true feeding practices they were taught through hands-on learning. Now the breeder is taking in new knowledge that is informally situated in a shel-

tered holding pin and imparted by a "schooled expert" who has had a formal classroom education. The communication between the two is a complex symbolic interaction that includes verbal talk as well as non-verbal talk with gestures. The breeder and "schooled expert" are in a comfortable communicative space that includes focusing on the beast and/or the feed. The sensory perceptions exploited are touch, the visual, and the oral. The controller is looking for rapid weight gain. Together the breeder and the controller size up the animal from behind, along its backbone and head-on. The conversation is dialogic: each offering an estimate of the weight and subsequent slaughter date. The controller carries a clipboard and document that he inscribes with a pencil the projected time the beast will be completely finished. It everything goes well with the beast's metabolism the doctor will likely not be called in for consultation. But sometimes things don't go as planned, especially when stable knowledge systems are being "played with." Cecu knows, "The culture of fattening the meat was never before...the grain has not been our habit." But here is the rub: how does one make a decent living while engaged in a seemingly costly learning curve? As Celestino reflects, "it was easier 25 or 30 years ago to feed the animal on the pasture and then sell and not think more about it." Indeed Celestino's reflection rings true, but as Cecu continues "Everyone has this problem with fattening. There are other animals that fattening is easier or better...but we need more money...everyone lives for making more money." It becomes evermore evident: Rita and Pinuccia's nephew, the breeder we meet earlier who was feeding his cows sugar beet pulp (pulpa), was trying to cut costs. Sugar-beet pulp is cheap, but ineffective and dangerous.

Now it all makes sense: In exasperation Antonio Maria revealed some of his conversations with the breeders. Antonio Maria speaks both languages, that of "breeder" talk and that of "specialist" talk, yet he is not always able to successfully communicate with the breeders who have participated in this project. Interestingly he has told the breeders over and over to write down their numbers: do a "feed analysis" or a "cost analysis." They tend to feed

the animals in the cheapest way they can and like many farmers I have spoken to, they cannot be bothered with paperwork. In conclusion, Antonio Maria added, “if you want to talk to a breeder who has put pen to paper, talk to Rita and Pinuccia, they write everything down.” Antonio Maria had no idea what he was suggesting to a researcher in professional and technical communication! Rita and Pinuccia’s use of external props or aids, such as pen and paper, was structuring a cognitive niche where “the iterated process of externalizing and re-perceiving is integral” to their specific problem-solving and decision-making process (Rivers 416).

As I imagined the breeders taking a pen to paper to account for the lives of the Sardo-Modicana with numbers, Rita’s voice responded to my contemplation, “You begin when they are born and then you follow until the end...to the moment of the slaughtering...we say. The nurturing (raising of the animal) continues like this. If you don’t want the animal well, you cannot do this work.”

### 4.5.2 Cultural Heritage of the Territory

In chapter 2 I laid out the forces and influences shaping Sardo-Modicana breeders at a time of extreme despair: they had a quality product but could not sell it to a modern-day meat consumer. In the beginning, when communicative activities between Slowfood International, Montiferru GAL and cattle breeders from Tuscany took place, there was enthusiasm to spend the extra time and money for marketing specific cuts of meat prepared according to traditional culinary arts. Now, with the responsibility of marketing the meat in the hands of the butcher, sales by default are focused on easy-to-prepare cuts, such as steaks.

Selling a product takes marketing patience and verbal talent, both of which characteristically are not a strength of pastoral peoples. The Sardo-Modicana breeders are experts in animal husbandry practices and while there was some training provided by the EU CAP support for marketing, the technical guidance by Montiferru GAL left the region in the middle of the breeder’s learning curve. Moreover, had the academic specialists hovering around the re-

gion spent more time involved in emic functions with the Sardo-Modicana breeders they might have discovered embodied cultural practices that have proven to be difficult to alter. If you recall, Cecu lamented, "The culture of fattening the meat was never before...the grain has not been our habit."

All the scholars in professional and technical communication mentioned above manifest their commitment to humanistic reform vis-a-vis in situ research interests. This approach makes affordances for work in the public sphere which requires extended presence in the site of activity so that the researcher grows to understand, by participation and observation, rhetoric in action. In particular, Grabill, Propen and Schuster, Saur, and Winsor have wrestled with what it takes to be human by assigning agency to the material world of nature, technology, and other material tools, including texts. By taking a firm and extended emic stance, we as professional and technical communicators have a very important role to play in development research. This is a role we can not underestimate when our work involves the use of portable digital video technology with sync sound recording to understand the embodied experiences of others. Following Saur and Winsor, I have moved away from the orthodoxy of observational practices to add a new tool, digital video, for extending my personal observational style. My body, as an instrument is literally involved in the actual flow of the cultural life I am participating in. The world of the Sardo-Modicana breeders is not "out there," but rather I am situated in the mix of cultural activities unfolding.

In chapter 2, section 2.6, I drew from the research of Guarino who successfully recovered the actors and reconstructed a concrete network of social relations that ultimately produced a discourse leading to the creation of "Il Bue Rosso." Unfortunately for the Sardo-Modicana breeders "the phenomenological challenge-discursive moments that confront the existing social relations of knowledge and their dialogue of trust and truth-were not fully realized" (Carolan and Bell). To put it more simply: had the various representatives

constructing through dialogue the emerging food science and technology complex, placed more weight on the breeder's knowledge, a different finishing protocol might have been considered. Had dialogue been sustained to uncover all relative knowledge perspectives and had conversations deliberated longer around the history of the Montiferru territory, the creators of the bourgeoning Food Science and Technology Complex might have taken into account that the common cereal grain used to fatten cows, corn, has never been cultivated in Sardinia. Historically, legumes have been cultivated in Sardinia, such as chickpeas, broad beans, fava beans, peas and a variety of lentils, all of which are rich in protein and used specifically to build up poor soils such as those found in the nutrient poor Mediterranean Territories. Legumes or beans are some of the first foods found preserved in archeological sites; known as the poor people's food and used for "green manure" and forage for livestock. Ask any Sheneghese in their eighties or a Sardinian researcher specialized in food insecurity, and they will tell you the common everyday food was made from legumes.

It is not my intent to fault sociologist, their role in field-based research has been limited to making social connections among actors in food, agriculture, and natural resource development studies, rather than the performance nature of agriculture. Scholars in the social sciences for agricultural development are beginning to agree: "analyzing agriculture as a situated action is useful for making farmers' skills, behaviors, and innovations empirically researchable" (Crane 180). As I explained above, adding a media toolbox provides one mechanism for deepening the empirical experience as well as assisting in analysis grounded in the reality of the peoples involved in situated actions, such as agriculture. Propen and Schuster with Blythe, Grabill and Riley recognize the value of a grounded theory approach that "involves a general method of comparative analysis and an analytical procedure of constant analysis" (Propen and Schuster). These scholars observed and participated in verbal exchange as well as examined and analyzed documents written in the workplace or public

sphere with the intent of faithfully representing the complex nature of patient care or public health concerns. In both cases these researchers were seeking out human motivation and behavior from a communicative perspective that lead to culturally specific recommendations to research participants for the purpose of increasing their understanding of each other and opening up dialogue motivated by an ethos of trust. As I have explained and provided evidence that the visual data acquired through my research methods has added another layer of text to consult beside the observational notes and written documents collected from the field. For me the empirical evidence found in visual text discloses cultural knowledge embedded in sensory experience and non-verbal relationships that without any doubt elevates my human visual-spatial sense-making capabilities" during the inventional activities of analysis (Whittemore 2008). It is this kind of knowledge, that exists in time and place, that the emic approach seeks out. It is this kind of "research that seeks to describe and produce more intelligent behavior on the part of individuals and organizations," that I suggest for professional and technical communicators (Rivers 417).

I wonder if any of the experts considered what I am considering. If we extrapolate that the legumes were always the likely available forage fed to the Sardo-Modicana shouldn't we interpret the breeder's historical and cultural practices as a moral argument? If cultural practices had been carefully taken into consideration, might not someone suggested the reintroduction of the traditional legume producing forage from which the meat gains its savory taste? How many new farmers could make a decent living while keeping the land in agricultural production? Imagine an argument for sustainable development action that takes a holistic interdisciplinary approach and includes careful deliberation on the civic knowledge of a territory.

# CHAPTER 5

*Media in the Medium:*

*Reflections on Learning to See Embodied Sensory Knowledge*

## 5.1 My Body as a Research Instrument

In this chapter I reflect upon the usefulness of representing ethnography from a visual perspective. As documentary photographer and seasoned visual researcher it is my intention to advance visual perception in our discipline in rhetoric and writing. Indeed, in my experience within the Rhetoric and Writing program at MSU, the larger critique has focused on surveillance (Foucault 1973) or the colonization of peoples and places (Pratt 1992). As I asserted earlier I do not work from an "objectifying outsider gaze" (Oakley 2001); visual perception is an embodied skill. In chapter 3 I detailed my fieldwork position, underscoring my body as a research instrument. It is in this extension of my human-being(ness) to "overreach" that I make myself "vulnerable to the minutiae of others' experience and life contexts." By being there, in the field and with my camera, I am able to open my heart in "empathetic participation:" there is nothing mechanical about the way I engage in the life-worlds of the people I am filming or photographing (104). Correspondingly, the embodied act and heightened experience of seeing and moving "as one" with my video camera substantiates a modified grounded theory approach when analyzing tacit knowledge or the modes of non-verbal communication. Referring to Merlau-Ponty (1962, 1963) is useful for my purpose, who asserts that the body is the condition and context through which one is able to have a relation to objects. Thus "the continuity of skilled practices is a function of the coordination of perception and action" (Ingold 2000). I follow visual anthropologist, David MacDougall, who recognizes images require an intuitive interpretation of the complex array of visual, kinetic, gravitational, proximic, aural, haptic, and tactile occurrences that can be read (McGill 391) in "a

discourse of knowledge that is located beyond the limits of the written text" (qtd. Carta 16). For this we must in Rhetoric and Professional Communication continue to argue for the visual text in defense of scholarship.

## 5.2 Video Out-takes of a Rhetorical Activity: Caring for Cows and Cheese-Making

Women are not typically seen working with the Sardo-Modicana in the fields: Rita and her sister are an exception. The females generally dwell in the home spaces where they manage ways of doing life and doing work in the family owned farm business: it is in the domestic domain where cheese is made. Echoes from the not so distance past, when men and women complemented each others work in the wheat fields, can be heard and seen today. Men hand-milk the cows from mid-February through May and women take the freshly extracted milk to process into cheese. The separate domains of work are shaped by their purpose, made vivid by their farmer "know-how" and through their meaningful actions that have been modified by embracing "schooled knowledge." For the breeders, in the work of making a living, "the Sardo-Modicana represents a singular locus of creative growth within a continually unfolding field of relationships" (Ingold). In this chapter I invite you into the world of the Sardo-Modicana breeders and cheese-makers through the lens of my camera. My hope is for you to experience three different rhetorical situations representing the breeders relationship with each other and with their beasts, the Sardo-Modicana.

## 5.3 Language as a Link in Human Activity

In this section I will support my position  argue that a media toolbox affords me the understanding that language is "embedded in social situations" and in the case of the Sardo-Modicana, my presence during the cultural practice of cheese-making invited the following utterances. My representation of this situation does two things. First, it allows you to see the situation from my point of view, which I hope underscores my body as instrument and my intention to see the multitude of stimuli in Piera's operating environment. Second, this video

*Figure 9: A successful cure*

representation affords us the understanding that language functions as a link in concerted human activity. I have maintained time-codes to indicate my first level of textual representation created from the "raw visual/aural data."

> 00:00-00:28: Piera points to a blue plastic bowl that is filled with a clear liquid and a floating egg. The liquid is salt water. At the bottom of the plastic container is rock salt. The water will be used to cure the cheese once it has been formed. The floating egg indicates that there is a sufficient measurement of salt for a successful cure.
>
> 00:29-1:21:I make a medium frame of Piera. She has a brown bowl in her hand in which there is a large round piece of cheese about 4 inches thick and 12 inches in diameter. She is pouring off water from the bowl into a bucket. She then sets the bowl on a chair that is placed next to her sink and adjacent counter. The chair is covered with a white cloth of cotton or linen. She takes a large sharp and pointed knife and cuts across the round white foamy cheese and places half of the round on a metal platter on the counter. I hold my frame while I hold my breath to stabilize the frame, and at 00:47 I zoom in, to her hands. She wears a gold wedding ring on her left hand. She is a widow. With the knife she slivers off pieces from

the other half of the round of cheese. She explains while looking at me, “I make cheese most every evening during this period, the season when the cows are lactating.”

*Figure 10: “Cosi va bene (Things go well)”*

1:21-2:14: I make a medium frame of Piera who has a piece of cheese in her hand and a tool from the fireplace that looks like a pancake flipper. The frame takes in only her hands, the tools, and the small fire warming the kitchen. The tool is heating over the fire. I pull back to take in Piera who is sitting on a low chair, at arms length from the fire. She then pulls the tool away from the fire and takes the small piece of cheese and presses it onto the flat surface of the “iron coal flipper.” As she does this a hissing sound is heard and the remaining moisture in the cheese is released as smoke. She presses the cheese flat. with her index finger and then middle finger. It looks like dough or white putty. She then raises her tool and as she raises it, she pulls up on the cheese that elongates into a long thread. She affirms, “you see it.” Piera is indicating what she knows: the one long string of cheese is ready to be worked into a ball of cheese. She adds with confidence gained from repeating this behavior since she was child, “cosi va bene (it goes well).”

2:15-6:53 I make a medium frame of Piera who is pouring boiling hot water she has scooped with an aluminum saucepan from a larger container on the stove into the bowl with the slivers of cheese. As she continues to pour water, she separates the slivers so the water covers all sides of all pieces. At 2:45 Piera starts to work the cheese with a wooden spoon. She abruptly drops the spoon and in a sacred gesture, crosses herself. The only sound comes from the water that moves with every downward pressure Piera makes with the side of her spoon. Piera maintains her focused practice. Is it the rhythm of the work? Is it the feel of hot water? Is it the ritual of the practice? Or is it my presence? Without my prompting, Piera begins her story, "I did this as a child because I liked to do it. My sister did not. I did this work with my mother who would give me a little piece as she worked the larger piece of cheese in the boiling water." I continue to frame her hand working the cheese. The once puckered and pockmarked slices of cheese were being transformed into a round smooth circle of cheese. At 4:14 I make a close-up frame of the wooden spoon resting on the cheese with steam rising from the water. Strands of Piera's confessional thoughts are articulated above the steam…"in the country everyone looks out for the other." The cheese continues to be worked like bread dough in the boiling water. The goal is to remove all of the water from between the fibers of the cheese as it is pressed into a ball of cheese called "casizolu."
6:54-8:18: I make a medium frame of Piera who is now pulling the cheese up rom the bowl into a long thread. It is about a meter long and she wraps it as if she was wrapping skeins of wool. She takes the cheese in her left hand and with her right hand folds the cheese around and around her left hand, all the while with her right hand stretching the cheese to release the water. As the last strand is placed on the mass of cheese in her left hand, she lowers that hand into the boiling water and

both hands continue to press the cheese. At this point her hands are literally kneading the cheese and they are nearly violet in color. From my unskilled eyes I could believe she had dough in the bowl. At 7:35 We both are delighted: I know this because we make eye contact and laugh out loud.

*Figure 11: "Vedi (You see)"*

The casizolu form is taking shape. In this frame what we know as casizolu, is emerging: between Piera's two strong hands is a rotund shape growing from the bottom and as her fingers message the roundness there is an excess growing above the top of her hands. Eventually she has a large mass that looks like a flower in full bloom. She cuts this with a knife and raises the final product: a plump ball of cheese. With a smile she concluded, "vedi."

Bronislaw Malinowski refers to a similar situation in his discussion of fishermen in the Trobriand Islands, "a word of command is passed here and there, a technical expression or explanation which serves to harmonize their behavior towards other men. In its primitive uses, language functions as a link in concerted human activity, as a piece of human behavior. It is a mode of action" (cited in Bitzer). I will add in the case of making cheese, knowledge is seen in deeds, detailed and concrete, while it is transmitted by touch and pressure through the

hands.

## 5.4 Learning to See Anthropologically

As the second phase of research was coming to a close, Celestino and I began discussing content for a short video narrative I would create for him and each project participant. We sat together with my Sony video walkman and I scrolled through various scenes of him hand-milking his cows while waiting for his response. He did not like my shots: the wide, medium and close-up shots! They were short and choppy. He was not able to "see" the action he was engaged in—his animal husbandry practices. Let me explain my training, so you can appreciate what Celestino wanted to see and more specifically how he taught me to see anthropologically.

I learned how to edit in the camera, close-up, medium, and long shots. In the field I developed a habit of holding my body still, as firm as a tripod. After pressing the "on" button, the camera would record the movement in front of me. I would count 5 seconds, 10 seconds, but rarely 15 seconds knowing the average frame selected in the editing process is 4-5 seconds. I was told to be prudent in using zoom, rather I was trained to move into a scene by panning horizontally across that scene. Zooming is frequently associated with untrained videographers. My discipline required steady, clear and well illuminated hand held shots. Typically any shots I record that shake or distort what is viewed in the frame, I discard. When I log video for the purpose of producing a visual narrative, I am attentive to the shot. My discernment to the nature of the frame: is it a medium, close-up, or wide image? My objective is to assemble these frames so information tastefully and seamlessly flows on the viewing screen. Coding involves language in the form of global and abstract utterances of the visual content as well as notes on the lighting or if the image is a "beauty shot." The best way for me to describe the language I have been trained to use can be characterized as words that are objective, austere, or reductive.

At first I was upset and fretting when Celestino dismissed the visual narrative I presented him. I had a task to accomplish, but now that my experienced way of documenting reality was being dismissed by the "end user" I had to quickly resolve this dilemma and devise a new way to shoot and edit short video narratives for each breeder, and as a whole story for the consortium! I began to see anthropologically out of default. It was Celestino who, through our collaborative efforts, inadvertently set me up for this transformation.

Handling livestock, especially cattle, can pose a serious occupational hazard: such animals can be unpredictable and very dangerous (Wilkie 54). The Sardo-Modicana breeder is an experienced stockman and skilled at handling livestock. Celestino was very instructive on how I was to act around his animals. He explained that I must move slowly and quietly, and in one instance he positioned me where my ability to illuminate the scene was less than ideal. I was frustrated most of the time because my technique was compromised. He did not want me to move about in the circumscribed milking space. His cows were not familiar with my scent. Furthermore, while Celestino was teaching his cows to milk, any quick body movement or potential sounds I might make could frighten the animals and cause them to bolt.

Surprisingly, he did like the frames where I placed myself at a distance and in a wide-framed scene, zoomed into an action space where Celestino was working. From my assigned vantage point, I framed him performing his work activities of milking cows and training the new calves and first year cows how to suck. While I was seeing, I maintained my camera in a wide shot so I could capture all of the action in front of my eyes. I sat on the ground and used my knees as a stabilizing object for my elbows to rest upon: my body was a human tripod. I learned to be patient and allow the action to unfold in front of me. I was sure I had video footage he would be happy with and with a few "special effects" and dissolves, I could produce an aesthetically pleasing video narrative. Through the lens of my camera I watched Celestino use his bodily-kinesthetic capacities to process and respond to haptic information. I

made a visual record of his corporeal knowledge:

A calf enters the frame from the left of the frame. It has been released from the nursery and is looking for it's mother. The calf's front and hind feet on the left side are bound by a rope. This is called "hobbling" and is intended to slow down a spirited animal. Celestino does this while he is training the calves to milk. Once the calf has found its mother and begins sucking, Celestino lassos the rope around the cows horns and secures it around the snout of the cow. He then begins to pull the sucking calf away from the cow's teats. This calf is persistent and moves back from Celestino to approach the teats from the other side of the cow. Celestino, with one hand holding the rope halter, moves to the other side of the cow. Celestino takes the loop of the rope and harnesses the calf while pushing its body towards the head of the cow and binds their heads close to each other. Once he is done milking, Celestino removes the "hobbling" from the calf's legs by cutting the rope circling one hoof and then the other. My reflective notes on this scene indicate that I am seeing anthropologically! I am watching at a distance, but making zooms to see a close up of Celestino severing the rope "hobbling" the calf's hind leg and fore leg together.

*Figure 12: Celestino teaching a cow and her first calf how to milk*

Celestino was happy with my performance in the field which strengthened our rapport. This was the kind of visual data Celestino was looking for. I was made certain of this as Celestino produced layers of reflective comments as we viewed my visual data. Together, we watched the video of Celestino milking and all the while he made affirmative utterances in response to footage that appealed to him. He also was prompted to remember how he was trained at a young age to work with the animals. Drawing from his memory or (encoded perception) Celestino explained, "At the age of 12 or 14 I would go with my father and my uncle when they milked. I would be placed in the nursery and my task was to harness the muzzle of the calves as they waited their turn to be released and find their mother to be milked and to feed."

Celestino made evident the traces of his learning are still practiced today. As Celestino viewed the moving images, his reactions addressed his animal husbandry practices. In some scenes it was evident that he was working for the camera: he had set up a calf with the cow to milk and had situated them in front of me. Just as he was settling into milking, another cow passed in front of the lens and he tried to move it out of the way. His working for the camera was to demonstrate his "know-how," not to show off. One of the oldest calves of the group and the one he took me to see just after it was born in the fall, was a testy beast. He was muzzled, dragging the rope behind him which gave Celestino the edge to seamlessly tie the little guy up to his mother without a lot of fussing. Celestino likes to be calm and efficient during this early morning ritual. Furthermore, this year he had about five out of 14 cows who were "prima partita" (the first year with calves). Each new mother and all their calves have to learn to be milked and it is Celestino's job to teach them how, once he understands each individual animal's disposition.

As we moved through the visual data, Celestino pointed out one maneuver to keep the cow from moving. He tied the horns and then tied the loose end of the rope to a ring so the

cow and calf would not "travel," while the calf was bound to her head. We discussed the "sensory knowing" that Celestino experienced when he sunk his forehead into the belly of the cow while he milked. He explained he could feel every muscle and every movement of the animal: should she tense up he knows to hold onto the bucket. As a rule, once a seasoned cow is stabilized with her calf, the two can hold a stance for the duration of the milking which takes about 5 minutes once Celestino is hunkered down and manipulating each udder with his strong hands. As we watched together, Celestino's two boys, Guetano and Davide, stood by and added comments to the video narrative. Davide, the youngest, is inclined to farm and his parents suggest he study veterinary science. As he watched the visual data, Davide narrated the scene by noting his experiences when he visited the herd and observed his father working with the livestock the week before.

### 5.5 A Bodily-Kinesthetic Visually-Spatial Relationship

In both of the former rhetorical situations I observed two simple scenarios; the first inviting discourse and the second needing discourse. I will represent in this rhetorical situation the veterinary medical complex. My representation of this situation does two things. First it illuminates the controlling exigence that created this innovation: the urgency to control diseases impacting the health and life of the Sardo-Modicana. In the following situation we will experience farmer "know-how" blended with fitting responses to bring about significant modification to this exigence by incorporating new procedures drawn from the "schooled knowledge." In the last section we saw Celestino lassoing the beasts to extract milk from the cows. Alone, he trained the calves to suck followed by hand-milking the cows. Here we will see breeders lassoing animals so therapeutic principles can be applied, by Antonio Maria, the public health veterinarian.

The second thing this representation does is to show how, after learning to see anthropologically, my "body as instrument" responds to a rhetorical situation. I must also note, this

is a complex and chaotic space that afforded me to completely use my body as instrument. Indeed, I was pleased! As I did above with Piera, I have maintained time-codes to indicate the first level of textual representation created from the raw visual/aural data. Intentionally, I will let you wander with me through this section with hopes that you will "have a feel" for the action space where breeders perform their livelihood practices.

> 00:01: The vet, Antonio Maria, walks from the right to the left of my frame. An older man with a walking stick is holding a black umbrella. It is open and protecting him and something sitting on the folding chair from a light mist of rain. Antonio Maria drops something from his hand on the chair and picks up a clipboard and begins to flip through pages of paper. I pan from a wide shot to a medium shot. There are cows moving about in the frame and they are bellowing.
>
> 00:27: I make a wide frame of Antonio Maria, Celestino, and one other person who are working a cow. There are cows blocking my vision in the foreground but they eventually part, allowing me to focus on the action so I can pan into it. As the movement of the cows swirls around the focal point of action, I zoom in. What enters the frame are three heads rising above a river of cows. From over their backs and in the background of the sea of red cows are three men interacting and talking while they are going about the business of the day: inoculation of the Sardo-Modicana for respiratory diseases that once afflicted this breed.
>
> 00:54: I situate myself in a different position and move in closer to the three men who are still interacting and conversing as they go about their unreflected activities. For Celestino, who has practiced animal husbandry since he was in his teens, the movement of his actions are seamless. For Antonio Maria who has been trained at the University of Sassari and the University of Padova, as well as raising Sardo-Modicana himself, the conversations are hardly a distraction from the pro-

*Figure 13: Inoculation of the Sardo-Modicana for respiratory diseases*

cedures he must do. The young man, a nephew of Celestino, moves with ease as he coordinates his movements with Celestino. The frame ends when a cow passes in front of me.

1:00-1:41: I frame Celestino who has wrapped his rope in a full circle. The gathered circled rope rests on his shoulder and extends to the ground. The rope is heavy, more than a half-inch thick. He is looking to the right of the frame. He grabs the circle of the rope that rests on his right shoulder in his right hand. He grabs in his left hand the long trail of rope. I pan Celestino as he moves, keeping him in my frame. The cows are circling in front and moving towards me. Celestino finds the cow. He enters into a continuous and seamless movement which begins at a molecular level originating in his neurosystem and extends throughout the rope he has projected towards the horns of the cow. Without interruption, Celestino takes the cow that is out of my frame, but it is made evident, with the tension the rope takes, and change in Celestino's body position. While he was in the movement of taking the cow, his body was in a forward inclination. When he felt

the pull of the cow responding to the rope tightening around her horns, his body responded by moving into a backward position, creating tension that secured the rope on her horns and provided him with taunt rope that he carefully began to reel in by extending one arm in front of the other and grasping a length of rope with every extension of a limb until he reached the head of the animal. I hold my frame and follow him until he reaches the cow's nose. In continuous motion, Celestino makes a harness and muzzles the cow. She is moving backwards, yet Celestino works with the cow allowing her to lead him as he proceeds to tighten the harness. At his point, his nephew moves into the action space and places the nostril clamps on the cow. This takes precisely 41 seconds.

*Figure 14: Celestino's body responded by moving into a backward position*

1:42-2:39: I reposition my frame. Antonio Maria is already at the hind end of the animal, lifting her tail to take a blood sample for parasites. The cow bellows, but holds still. Antonio Maria is able to proceed with the 1, 2, 3, 4 protocol: shave, inoculation one and inoculation two, ended with a check for ID on the ear tag. I shift my position keeping the three men and animal in may frame. I move into the

space of activity. Celestino's back is to the camera and Antonio Maria is facing the camera. He is talking, but his hands are not visible. I continue this frame and move slowly behind Celestino to place myself on his right side so I can frame his right shoulder which is covered in mud. Through this frame I can see Antonio Maria who has just finished shaving a perfect 3 inch square of hair where the exposed hide will take the two injections. I hold this frame until Celestino and his nephew release their hold on the cow. It took just under one minute from the time Antonio Maria made the first injection and the release of the animal.

I want to pause at this point to underscore my movement and my body as an instrument in action. Movement is key to my understanding the visual world I am perceiving or more precisely and in accord with Held and Hein, "The self-actuated movement is necessary in order to develop the normal visual perception with depth. Our movement in the world, the movement from here to there or there to here, gives the dimension of depth to mere visual sensations. Movement is the key to understanding the vision" (872-876).

2:40-3:07: I make a medium frame of Celestino. He is facing the right of the frame with his right shoulder facing me. The rope is over his shoulder which is covered in mud. The strength of the rope is visible and I now notice there is a metal ring taped to the rope. I wonder if it is duct tape. It is wrapped along about six inches of the rope. The rope passes through the ring which is the operative device maintaining the kinesthetic relationship between syringes in his hands. He moves to the beast's hind end, lifts the tail and inserts the needle at the base of the tail. He moves towards the front of the cow and takes out his clippers that buzz the hair away and exposes a red hide that is then injected with two syringes. Celestino identifies the next cow he will take and makes another seamless catch. He quickly makes a harness and muzzles the cow as his nephew moves in placing the nose

clamps which make a clicking sound. This takes 23 seconds.

3:08-4:13: I continue to hold this frame and pull out to create a wide shot. Antonio Maria enters the frame from the left with syringes. I have changed my position to take in this activity. It is a good clear frame. The cow moves twice as she is being shaved and the vaccinations are being injected. All three men "travel" with the cow until the task is completed. This takes 1 minute and 5 seconds.

4:14-5:02: I frame the three men and a cow. Antonio Maria has his back to the camera and has lifted the tail of the next cow to take a blood sample. The medical intervention begins. I hold my frame and move into the action to frame a closeup of Antonio Maria who is conversing with the two other men. I continue to pan Antonio Maria as he turns to record the animals ID on the clipboard the elderly man is holding across the work area. This took 48 seconds.

5:15-5:47: I have my frame on Antonio Maria who arrived at the place where he inscribes his medical documents. Celestino has entered the frame from the right and is looking for the next cow to vaccinate. The frame is wide now and Celestino circles to the left and a group of cows hold together on the right. One or two are looking at Celestino. He has his eye on one beast. Celesstino holds his gaze on this animal and their eyes are locked. The other cows are not paying attention to Celestino. It is as if the cow knows she is next. She is still acting neutral even as Celestino makes an embodied decision: raising his rope and leaning into his intentions. It is when the cow feels the rope on her head that she pulls back. Celestino, a seasoned breeder, has knowingly placed the rope around a horn and intuitively pulls back, but more precisely pulls back while following the movement of the cow's head so that the rope is not pulled off the horn. Celestino makes the catch. The rope is now taunt and Celestino moves towards the cow. They both disappear

in a sea of swirling red cows and my vision is obstructed as Celestino's nephew moves in to insert the nose clamps.

I must pause again to address the notion of agency. The result of the breeders' agency speaks to an enacted informed spontaneity or what sociologists call creative improvisation. What we are experiencing through my lens is a social-technical process; the blending of what were two separate worlds; animal husbandry and veterinary medial complex. Together they can be seen as a socio-technical process, a rhetorical situation where embodied knowledge is performed. Scholars in the social sciences for agricultural development are only now beginning to agree with me: "analyzing agriculture as a situated action is useful for making farmers' skills, behaviors, and innovations empirically researchable" (Crane 2011 180).

9:35-10:02: I make a close-up frame of Celestino holding a cow's horn with his left hand and the rope of the harnessed muzzle with his right hand. Both hands are covered in mud and the cuticles of his fingernails on his left hand are outlined in mud. At 9:41 I pull back the frame to make a medium shot. It is beautiful! The positions and colors are perfect. At 9:50 I hold the frame. Both Celestino and his nephew are gently vibrating the head of the cow to ease her discomfort. Antonio Maria's hands are in the right of my frame administering the intervention. At 10:02 the head of the cow is released and the movement is confirmed when the two metal prongs of the nose clamps, click together.

### 5.6 Liminal Spaces

In chapter 4, I shared with you discourses of the Sardo-Modicana breeders that I believe grew out of the lived experience of these action spaces or rhetorical situations. I have tried to represent in words what I observed and what I recorded through the lens of my camera. More importantly, I believe what I have recorded through the lens of my camera is closer to the empirical world I experienced. I have substantiated the breeders' bodily-kines-

thetic, visual-spatial, temporal-aural world. My media toolbox has provided me with affordances to move into the source of my embodied knowledge and into what Jay Ruby characterizes as "radical empiricism." To successfully arrive at a level of radical empiricism I had to dive into the swirling current of red cows to relive the sensory and aesthetic experience of the field. It was then and at a distance that I was able to draw out of myself the complexity of the breeders' embodied knowledge which I had recorded in the field. In other words, I drew from the sum of my own embodied knowledge, the language I used to represent the visual in each section of this chapter and in chapter 4.

Throughout this document I have explained my role as a researcher, a fully embodied human being that is not passively accepting the outside world, but rather a person involved in an inseparable process of observation, assessment, and re-observation. The phenomenology of an observer in the dynamics of an observation is heighten when I use my camera and is motivated by a sense of discovery grounded in empathy and compassion. I cannot prove this, but with this mindset, communication takes place through the nerves, the senses, the endocrine and immune pathways (Martinez 2001). The "gaze" a term inherited from the Cartesian mind-body model suggests a "god-like capacity of the universal glance" or "pure vision." It is impossible to have pure vision. Rather I reside in my cognitive, biological, and cultural history, while the camera extends my vision and my body moves into the space where the Sardo-Modicana dwell. It is this dimension of depth that distinguishes how I see the world. When I look through the lens of my camera, my perceptions for the sensorial world is radically stimulated with all of my sources for perceiving the world excited: particularly seeing, hearing, taste and smell. Foucault is useful for this last argument, "to see then is not to apprehend the world, but it is to initiate a knowledge practice" (1970). As I pick up my camera and place it in front of my eye, I am drawn into and become a part of the sensory world before me. The interaction of my flesh is open to participation with others which Mer-

leau-Ponty describes as “reversibilities”, “intertwinings” or “chaisms” (248).

When I press the shutter button on my camera I begin to collect that which is seeable. Afterwards, when I revisit the data collected, I “swim” in the data allowing myself to revisit the sensory emotional world I saw through the lens of my camera, and from an emic perspective, I begin to articulate what I saw. Or as Foucault might say, I have been implicated in a variety of seeing technologies, that define what is visible: “the seeable is that which is visible when the eye is placed in mechanic combination with discourses, knowledges and spaces” (Kearnes 2000). Without a doubt, we can agree the visual is not easy nor is it lacking in cerebral work. Moreover my learning and the learning of the breeders comes through movement and passing from one place to another while balancing the liminal spaces between rhetoric and performance. In conclusion, I can say, Deleuze (1986) speaks for what I now understand, “Knowledge is a practical assemblage, a ‘‘mechanism’’ of statements and visibilities” (51). To this end, I am involved in “the invention, not the representation, of cultures" (Clifford and Marcus 1986).

Like the breeders, I want the Sardo-Modicana well, so my research journey in Sardinia may never end. Like my grandmother, Pasqualina when I enter the Montiferru territory by car or by bus, my body is extended towards the landscape as I anticipate seeing the Sardo-Modicana seeking out fresh chlorophyll rich grasses.

*Figure 15: Celestino's cow with her first new born calf*

# APPENDIX

**APPENDIX: Explanation of Study and Informed Consent Form:**

THE RED COW OF SARDINIA:
Gendered Narratives of Place, Knowledge,
and the Work of Food Production

You are invited to participate in a research study about gender specific local knowledge and its relationship to knowledge creation in the rural community you are a part of. This project has two goals: 1) to understand how the documentation of local knowledge can facilitate communication in sustainable agriculture and rural development projects, 2) to understand knowledge dynamics in the gendered spaces of farm families. The project will last six months and will focus on the knowledge-making processes that lie behind the everyday practices of farmers.

As part of my research and as part of what I give back to this community for support of my research, I am also producing a documentary about local knowledge and community development. This documentary is one outcome of my project, along with a dissertation and other scholarly publications.

As part of your participation you may be asked to:

1. Allow the normal, everyday practices related to the work of food production that you engage in to be observed and videotaped. This will take no extra time outside of the regular requirements for these practices that are already part of the work you do.
2. Participate in a group interview at critical junctures of this project and at the culmination of the project to: 1) reflect on the content of video footage, 2) to reflect on what you have learned as a participant in this project, and 3) your help in verifying the message in the documentary video for Il Bue Rosso. The maximum amount time for each group interview will be 1 hour.
3. Participate in one to three semi-structured interviews, each to last about 1 hour.

This study involves minimal risk to you, but the interviews will require your time and attention. The benefit to participation is that we will be able to understand the role of local knowledge and communication in rural development projects.

Your privacy will be protected to the maximum extent allowable by law. Only the researchers associated with this project will have access to study data. All electronic data will be stored on a password-protected computer. All paper data and other media, such as black and white film negatives, audio, and video tapes, will be kept in a locked file cabinet. All data will be kept for a minimum of 3 years. In addition to using results to improve the study of the rhetoric of gendered knowledge and communicative dynamics in rural development, the results of this study will be used in research presentations, journal/magazine articles, in book chapters, and in a dissertation.

Your participation is voluntary. If you refuse to participate there will be no penalty to you. If you consent to participate in this research project, you are free to withdraw your consent and discontinue your participation at any time without penalty. You also have the right not to answer any particular question in any of the interviews, to ask that the taping of the interview be stopped, and to ask that any recording of your behavior for which you did give permission originally not be used in fact in the study–all without penalty. You can refuse to answer any

of these questions for any reason and may terminate the interview at any time for any reason. You should also understand that the investigators have the right to withdraw you from the research project at any time.

We are happy to answer any questions that you might wish to ask concerning the procedures used in this research at this time. Jeff Grabill may be reached at 517-353-9164, or by e-mail: grabill@msu.edu. Cynthia Vagnetti may be reached at (202) 680-2148, or by email: voices@msu.edu. If you have questions or concerns about your role and rights as a research participant, would like to obtain information or offer input, or would like to register a complaint about this study, you may contact, anonymously if you wish, the Michigan State University's Human Research Protection Program at 517-355-2180, Fax 517-432-4503, or e-mail irb@msu.edu or regular mail at 207 Olds Hall, MSU, East Lansing, MI 48824.

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ACKNOWLEDGMENT AND CONSENT

I, _____
(Full Name of Participant)

of _____
(Street address, City, Province, Country, Postal Code)

hereby consent to participate in this research project.

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As part of the reciprocity agreement with this project, a documentary film will be developed in Italian for the use of Il Bue Rosso. Master copies will be given to the association for their purposes. All participants in the film have the right to review the film and approve of the use of footage of themselves. The film is intended to be shown to public audiences. In addition, footage shot for the film may be used in scholarly publications.

ACKNOWLEDGMENT AND CONSENT

I, _____
(Full Name of Participant)

of _____
(Street address, City, Province, Country, Postal Code)

hereby give my permission for video and audio of myself to appear in video representations of the study.

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