AN ETHNOGRAPHIC STUDY OF TRANSLATORS AND TECHNOLOGY

A thesis submitted
to Kent State University in partial fulfillment of the requirements for the degree of Master of Arts

by
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NOTE ON CONFIDENTIALITY

In accordance with the Kent State University Institutional Review Board, all informants’ names have been changed to protect their identities. I have also chosen not to print the names or screen names of commenters from message boards to protect their anonymity.
CHAPTER 1

Introduction

The translation industry today is struggling with an identity crisis. The industry is rapidly changing. The changes are a result of the increased prevalence of computer technology, which threatens to redefine what translation is. This thesis aims to document and explain this struggle anthropologically and to assist the translation industry in understanding the current technological terrain.

The old model of pure human translation (human T) is being challenged by three new translation technologies. These new technologies embody new ways of conceptualizing work, community, and identity. Computer-assisted translation (CAT) has been the most welcomed of the new technologies, but in recent years, machine translation (MT) and crowdsourcing translation (CST) have become more popular as alternative strategies.

Although CAT relies heavily on human-computer interaction, all translation decisions are made by a single translator, distinguishing it from the other two technologies. In MT, a source text is fed into a computer program. That computer program then produces an output, or target text, in the target language (e.g., Google Translate). In a professional environment, the target text may then be given to a translator to fix mistakes in a process called postediting. Unlike MT, crowdsourcing relies on a large human network rather than a computer program, although these human networks
are dependent on internet-based communication technologies. Crowdsourcing transforms individual laborers into nodes in the network to process large amounts of information. Rather than being a mechanical technology made of silicon and wire, crowdsourcing is a social technology comprised of human knowledge that is leveraged to produce a product. Organizations that use crowdsourcing for translation will ask a community to translate certain texts. Normally these are communities of amateurs whose work is rewarded (if at all) with token compensation in the form of online recognition.

Professional translators have expressed mixed feelings about these new translation technologies, fearing that their professional foundation is being undermined. At present, MT and crowdsourcing are still in their infancy as professional tools, so the trajectories of these new technologies are still undetermined. Researchers and translators alike are beginning to ask what the future of translation will look like.

An anthropological perspective on these technologies may help to illuminate how attitudes about each technology are constructed and reinforced. At their core, all technologies are social systems created through human interaction, and thus, are open to being studied by social scientists.

**Statement of Purpose**

Several studies have examined the needs and attitudes of translators with regard to new translation technologies (e.g., Ahmad et al 1995; Dillon and Fraser 2006; Fulford 2001; Fulford et al. 1990; Smith and Tyldesley 1986), specifically focusing on CAT and MT. The two most recent studies (Dillon and Fraser 2006; Fulford 2001) have
demonstrated that while the translation industry is more accepting of CAT than MT, translators are ambivalent about new translation technologies as a whole. Notably, respondents in these studies cited fears of loss of creative power over the translation, clients discriminating against translators who did not use CAT, clients demanding discounts and shorter deadlines due to the use of CAT and MT, and the general degradation of the profession as reasons for not adopting the new translation technologies. Unfortunately, the studies fail to examine the reasoning behind these claims or how they are used in debates about the new translation technologies.

As for CST, research into this area has only recently caught on in translation studies. Of the handful of studies produced so far, most have focused on the historical development and techniques of this technology, or on its effectiveness. Currently, this area lacks an understanding of the relationship between professional translation and CST.

In recent years, translation studies has welcomed social critiques of the translation process. *Translation and Power* (Tymoczko and Gentzler 2002) examines how translation can embody power relations between communities, *Translating Cultures* (Rubel and Rosman 2003) discusses the issues of translation in anthropological work, and *Science in Translation* (Montgomery 2000) describes the effects of translation on the exchange of scientific knowledge. However, to my knowledge, there has been no ethnographic study of the translation process or the use of translation technologies.

This thesis is meant to provide an ethnographic account of translators and technology, thereby supplementing the data provided by the previous studies of translation technologies. I will show that professional translators utilize cultural models
to understand translation technology paradigms (i.e. CAT, MT, and CST), to maintain
group identity, and to negotiate their position in relation to other actors in the
development of these new technologies.

To accomplish this task, I will incorporate the theories that have developed from
the schools of thought of the anthropology of technology and cognitive anthropology.
These theories provide the theoretical framework for understanding the construction and
application of my informants’ models. In keeping with my goals, I will focus on models
that describe the dichotomies of “professional” versus “amateur,” “creative” versus
“mechanical,” and “human” versus “non-human.”

A secondary outcome of this thesis is the creation of an ethnographic case study
of technology adoption. Little research has been conducted by anthropologists focusing
on technology adoption and this thesis will add to that growing body of work.

**Structure of the Material**

This thesis is designed to examine the many aspects of translation and technology.
Here, I will provide a brief outline of what the reader should expect from the rest of this
thesis.

Chapter 2 will introduce the reader to the various schools of thought and
theoretical perspectives that comprise the anthropology of technology. These schools of
thought and theoretical perspectives will provide the basis from which to understand the
social relationships between translators and technologies. These schools of thought and
theoretical perspectives include cyborg anthropology, digital anthropology, actor-network
theory, the sociotechnical system, and the theories concerning the idea of a computer revolution. The chapter concludes with a discussion of how these theories will be used in this thesis.

Chapter 3 will examine the various translation technologies and their histories. It will also demonstrate how these histories have shaped the structure of current relationships. The chapter will begin by examining standard human translation. It will then move to the work processes involved in translation, and how these processes are augmented by the new technologies. The second half of the chapter will examine more closely the three main technologies: CAT, MT, and CST.

Chapter 4 will describe the methods I used in my research. It will also outline how I selected my informants and field sites as well as give a detailed description of one site: the 2013 ATA Annual Conference. It will then conclude with a discussion of my results from a survey that I conducted at the conference.

Chapter 5 is dedicated to examining the identity politics of the translation community. It begins with a description of the various identity issues that translators face in the industry. It then transitions to the presentation of two models that translators use to understand the new technologies. These models are outlined and defended with the data collected in this study.

Chapter 6 concludes this thesis. Here, the implications of the models are discussed, as well as the factors behind their creation and proliferation. The conversation then moves to the study’s contribution to the anthropology of technology. Part of this discussion includes possible new methods for studying technology adoption. Following
this, new areas and questions are proposed for future research. The chapter concludes with some final thoughts about the impact of this study on the translation industry.
CHAPTER 2

Anthropology of Technology

The anthropology of technology is a diverse field composed of various schools of thought and theoretical perspectives. This chapter surveys these schools of thought and theoretical perspectives to examine their strengths and weaknesses, concluding with a brief discussion of their contributions to this thesis.

Cyborg Anthropology

This thesis examines the relationship of translators to technology primarily through the school of thought of cyborg anthropology. Developed in the early 1990s, cyborg anthropology provides a distinctive manner for understanding human–machine relationships.

Cyborg Anthropology, as described by Downey et al. (1995), is the anthropological study of science and technology and how those fields produce and reproduce knowledge, technology, and subjectivity. In aligning itself with cyborg studies, cyborg anthropology examines the creation and maintenance of the human–machine boundary. Cyborg anthropology focuses on science and technology as cultural phenomena and recognizes that technologies are produced through the strategies of actors, within social relationships. Thus, they involve power, meaning, and ideology.
Cyborg anthropology affirms that non-human objects also have agency in constructing social relations.

Originally described by Manfred Clynes and Nathan Kline (1995:31), the cyborg (or cybernetic organism) “deliberately incorporates exogenous components extending the self-regulatory control function of the organism in order to adapt to new environments.” Clynes and Kline originally proposed hypothetical augmentations for future astronauts that ranged from induced hypothermia to nuclear-powered lungs. Never realized, the cyborg became more at home in science fiction than science fact. Cyborg images abound in popular culture from the heroic titular character of Robocop to the villainous Borg of Star Trek.

It was Donna Haraway’s (1991) “Cyborg Manifesto” that moved the cyborg into the social sciences. Haraway transformed the cyborg from a scientific possibility to a social reality that recognized the intimate relationship that humans share with technology, science, and machines and how those relationships reconfigured modern identities. This realization of the cyborg allowed the social sciences and humanities to enter into the conversation, ultimately forming the various fields of cyborg studies, including cyborg anthropology. Haraway (1997:211) understands the field as:

Cyborg anthropology attempts to refigure provocatively the border relations among specific humans, other organisms, and machines. The interface between specifically located people, other organisms and machines turns out to be an excellent field site for ethnographic inquiry into what counts as self-acting and as collective empowerment.

By referring to translators as cyborgs, I am not stating that they have augmented themselves with machine parts. I am instead following the example set by Haraway by
defining the cyborg as an interconnected system of objects and biologicals. To be true to Clynes and Kline’s original cyborg, the mechanical parts must be wholly integrated with the biological being. However, Haraway’s cyborg notes the symbiotic relationship between machines and biological beings, without physical integration.

The current trend in cyborg anthropology emphasizes how humans use machines to construct and revise personal and social identities. Similarly, I also view the cyborg as a political identity, which may be more in line with Haraway’s original meaning. In the “Cyborg Manifesto,” she declares:

By the late twentieth century, our time, a mythic time, we are all chimeras, theorized and fabricated hybrids of machine and organism; in short, we are cyborgs. The cyborg is our ontology; it gives us our politics. The cyborg is a condensed image of both imagination and material reality, the two joined centres structuring any possibility of historical transformation. In the traditions of ‘Western’ sciences and politics the relation between organism and machine has been a border war. The stakes in the border war have been the territories of production, reproduction, and imagination. [p. 150]

The full implication of cyborg politics on the translation industry will be discussed later in this thesis, but for now I would like to clarify some key points.

A discussion of cyborg politics must include an understanding of cybernetics. While most are familiar with this science as belonging to the fields of engineering and physics, cybernetics also has social implications. Norbert Wiener, mathematician and founder of the field of cybernetics, devoted an entire chapter of his introductory book *Cybernetics: or Control and Communication in the Animal and the Machine* (1961) to social formations and two chapters to cognition. His follow-up book, *The Human Use of Human Beings: Cybernetics and Society* (1950) is an expansion and elaboration of these chapters.
Cybernetics is primarily concerned with the exchange of information. As information is sent, it degrades due to noise, or random signals entering into the system. It is the job of the receiver to identify the original signal and carry out the instructions. For social animals, the ability to send and receive information effectively is not only necessary for the individual’s survival, but for the group’s as well. Wiener (1961:157-158) states, “the community extends only so far as there extends an effectual transmission of information.” Wiener goes on to propose that the autonomy of the group can be measured by comparing the number of decisions entering the group from outside with the number of decisions being produced by the group. The more the ratio favors the latter, the greater the group’s autonomy. In anthropological terms, this indicates that the group has more control than do outside forces over the production of culture and identity as well as other concerns such as economics and health.

Anthropologist Gregory Bateson (2000) is known for incorporating cybernetics into anthropology. His use of cybernetics puts the locus of action and perception in the human. He discounts the idea that action originates and is controlled in the conscious mind and instead favors an approach that looks toward feedback loops and human interaction with outside elements to explain action. His concept is best explained by the example of the lumberjack:

Consider a man felling a tree with an axe. Each stroke of the axe is modified or corrected, according to the shape of the cut face of the tree left by the previous stroke. This self-corrective (i.e., mental) process is brought about by a total system, tree-eyes-brain-muscles-axe-stroke-tree; and it is this total system that has the characteristic of immanent mind. [Bateson 2000:317]
Action, instead of being the product of conscious thought, emerges from the system. In asking where the self ends for a blind man with a cane, Bateson argues that the cane is as much a part of the blind man as the hand that holds it since it is responsible for transmitting information to the man. It is an extension of the sense of touch. Thus, objects can produce and convey information much like biological beings can.

The incorporation of machines outside of the human body into cyborg politics allows for competing information producers. In cyborg politics, the signals of humans and machines are constantly interacting and competing with one another. Information is continuously circulating through these systems, shaping future action.

Cyborg politics also acknowledges the importance of noise. Both the perceived and real information have drastic effects on the actions of individuals within the group. This will be further explored later. Suffice it to say, cyborg politics is about communication and the control thereof in the interest of promoting group autonomy.

At this point, the reader may be asking how the cyborg relates to translators. While language professionals are not directly integrated with machines, they interact and rely on computer technology on a daily basis. Translators distribute work and cognition to mechanical systems, and this is intensifying with the introduction of the new technologies. As translators become more reliant on computer technology, agency and identity become more diffuse. Defining boundaries between entities is the work of cyborg politics.
Digital Anthropology

A second school of thought started to coalesce around the same time as cyborg anthropology. This new field would eventually take the name “digital anthropology” and would follow the same general path as cyborg anthropology, but would still carve out its own niche within the general study of culture and technology.

Digital anthropology’s birth can be linked with Alberto Escobar’s (1994) article “Welcome to Cyberia” about the new field sites of cyberspace and cyberculture. Unlike cyborg anthropology, Escobar’s proposed approach took a more traditional path to studying technology. His concern was to focus on how social relations are maintained, negotiated, or constructed with the introduction of new technologies. These themes continue to recur in digital anthropology publications.

Today, digital anthropologists have abandoned many of the sites that Escobar and the cyborgists proposed. They prefer to limit themselves to studying humans in relation to digital technology. Horst and Miller (2012:3) define “digital” as “all that which can be ultimately reduced to binary code but which produces a further proliferation of particularity and difference.” They no longer concern themselves with technology in general (which would include biotechnology and nanotechnology) or with the study of scientific laboratories, but instead focus on electronic devices and the spaces they create. By narrowing their field site, digital anthropologists have been able to accumulate a considerable body of work for cross-cultural comparison. This has provided a rich environment for theory building.
Much of the focus in digital anthropology has been on the reproduction of social formations through digital technology. Landmark work conducted by Miller and Slater (2000) demonstrates that the Internet that appeared and is used in the Caribbean is culturally distinct from the Internet found elsewhere. Miller’s (2011) other research demonstrates how Trinidadians recreate “Trinidadianness” on Facebook. Other researchers have looked toward online-gaming worlds as potential sites. Boellstorff (2008) and Malaby (2009) have studied the culture of the Second Life video game and how cultural phenomena that exist in the physical world like property values and religious activity are played out in the virtual world.

Other researchers have chosen to focus on the social relationships that are created or reinforced by new digital technologies. Horst (2006) and Horst and Miller (2005, 2006) report that cellphone use in Jamaica illustrates how impoverished individuals use the phone as an economic tool. They do so by tapping into extant social relations and reinforcing bonds with individuals who may be half a world away. These people are more able to organize the distribution of remittances to ensure that they are received at critical times rather than en masse. Others have shown how the cellphone is used to reinforce ethnic identity (McIntosh 2010) or to empower women (Tenhunen 2008). Digital money has also become an object of study as new digital currencies like Bitcoin gain in popularity (Maurer et al. 2013).

Digital anthropology demonstrates that while new technologies open up new areas of interaction, it is a continuation of social practices rather than the invention of totally new ones. While new digital technologies may be exotic, once adopted, they are
quickly incorporated and turned into the mundane. Digital anthropology also notes the dialectical nature of digital technology as human and machine shape each other. The dialectical relationship extends to groups relying on the digital technology as relations change and remake one another. Rather than competing with cyborg anthropology, the digital and the cyborg complement each other as the digital sheds more light on the impact that technology has on culture and society.

**Actor-network Theory**

Actor-network theory (ANT) came into its own in the late 1980s in the field of science and technology studies (STS) as a new way of understanding the sociality of technology (Latour 2005). Its champions were Michel Callon, Bruno Latour, and John Law. The goal of the new theory was to reconfigure what was considered “social” by allowing non-humans the ability to act. According to Callon and Law (1997:168), “what we like to call ‘the social’ is materially heterogeneous.” What Callon and Law meant by “materially heterogeneous” was that social life was embedded in material items and that the totality of the social was composed of various material objects that interacted with humans. They further explain that while “everyone knows this” (p. 168), modern practice divides the human from the non-human.

Due to the ambiguity of words, some space will be given to explain what ANT means by *actor* and *network*. The term “actor” in actor-network theory refers to anything with agency. In ANT parlance, *agency* refers to both conscious action and causation. This
definition aligns the ANT notion of agency with the philosophic notion rather than the sociological notion of agency. As Latour (2005:51) argues:

If we call *metaphysics* the discipline inspired by the philosophical tradition that purports to define the basic structure of the world, then *empirical metaphysics* is what the controversies over agencies lead to since they ceaselessly populate the world with new drives and, as ceaselessly, contest the existence of others. The question then becomes how to explore the actors’ own metaphysics. Sociologists of the social have answered by abstaining from metaphysics altogether and by cutting all relations with philosophy, that fanciful and non empirical discipline . . .

By reducing the concepts of conscious action and causation to one term, ANT seeks to equalize humans and non-humans. Rather than belittle the contribution of human actors, ANT aims to recognize the importance of non-human actors. Following Law (1987), currents and wind patterns were just as powerful as sailors and kings in the development of Portuguese maritime technology. Any object or person that does not interact with another is excluded from an actor-network analysis.

The “network” part of actor-network theory is less straightforward. Latour (1996) warns against an engineering understanding of a network. This distinction is important because ANT analysis often deals with technological systems and the temptation to borrow the engineering concept does exist. A “network” in ANT is not a stable group of connections between nodes such as a sewer system or electric grid. The term originates from the French philosopher Diderot and was used in opposition to the Cartesian divide that separated the material from the mental (Latour 1996). Networks, in this sense, are series of connections among interrelated objects and essences as opposed to a total
separation of different phenomena. In this way, the ANT notion of network is a social network that incorporates both humans and non-human objects into their webs.

It should be noted that actor-networks do not limit themselves to material objects. An actor-network incorporates ideologies, texts, and abstract concepts as easily as artifacts and people. Similarly, actor-networks are not restricted by physical limits. Space, time, and size are irrelevant to an ANT analysis. For example, the ideology of New England Puritans and the Motion Picture Association of America's (MPAA) film-rating system can belong to the same network despite distance, time, and type of actor.

Finally, actor-networks are dynamic, not static. The connections between actors are defined through action. Inaction equates to no connection in an actor-network. To maintain connections, actors must continuously act on one another. Actors can enter or leave (a process described below), connections can strengthen or weaken, and new networks can appear and then disappear. While some networks may seem solid, all networks are in motion, changing or working to maintain connections.

It is to the benefit of an actor-network to become stable. A stable actor-network maintains strong connections between the actors who work together to resist dissociative forces. Returning to Law’s Portuguese navy, it was in the best interest of the actors that comprised the crew of the Portuguese galley for all the elements to maintain connection. In the case of the Vivaldi brothers, the actor-network failed to resist outside forces and “the galleys, emergent objects constituted by heterogeneous engineers, were dissociated into their component parts” (1987:235). The brothers never returned to port. The galleys were lost at sea, most likely because they were unable to resist the forces of waves,
winds, and currents. The Vivaldi brothers were unable to maintain a stable system, so the parts that comprised the galleys lost their physical connections to one another and the ships broke apart.

For an unstable or destabilized actor-network to gain stability, it must recruit new actors or cast off disruptive ones. Successfully integrating new actors into a network may drastically change the shape of the network, strengthening some connections while weakening others. Sometimes these new actors protect against dissociative forces, while other times the actors are forces that have been made to work in the network’s favor. Unfortunately, sometimes actors who are recruited into the network become dissociative forces in unexpected ways as they begin to interact with all the other actors. When a network becomes stable it is said to be black-boxed: the individual components are forgotten and the network becomes an artifact. Latour (1987) and Callon and Law (1997) note that before computers, bombers and electric cars were “things” they were collections of materials, theories, and people.

To perform an ANT analysis, one has to “follow the actors themselves” (Latour 2005:12), as the ANT slogan goes. Latour has advocated for an ethnographic approach to accomplish this (see Latour 1987 and Latour and Woolgar 1986). While his work has been criticized for failing to acknowledge anthropological concerns such as power and symbolic acts (Hess 1997), the principle is salvageable. Latour also prefers a textual approach. In Science in Action (1987), he stresses the importance of texts in the creation of “real” objects. Journals and papers are just as important for political and social action as labs and workshops. Callon and Law, tend to lean toward a historical analysis of
technology. In their work, they trace the historic progression of technology and the forces behind the designer’s decisions. For this thesis, I have chosen to implement both historical and textual analysis.

**Sociotechnical Systems**

Anthropologist Bryan Pfaffenberger focuses his analysis on the political construction of technology, which closely follows ANT. This makes his work a nice complement to ANT, which tends to ignore the political actions of human beings and the symbolic qualities of technology and science. This section will focus on Pfaffenberger’s theories that relate to his concept of the sociotechnical system.

Pfaffenberger’s primary work on this subject is his article “Social Anthropology of Technology” (1992) in which he argues for a new understanding of technology. According to Pfaffenberger, the discipline of anthropology has treated technology with an androcentric Standard View. Key parts that Pfaffenberger identifies in the Standard View of technology are:

Man decorates his tools and artifacts, but artifacts are adopted to the extent that their form shows a clear and rational relationship to the artifacts’ intended function . . . material culture is the primary means by which society effects its reproduction . . . one can directly perceive the challenges Man faced in the past, and how he met these challenges . . . technology is cumulative . . . technology was more authentic when we used tools, because we could control them. Machines, in contrast, control us . . . as the primacy of function over aesthetics rips through culture, we increasingly live in a homogenous world of functionally driven design coherence. [1992:494-495]

Pfaffenberger saw traditional scholarship representing technology as strictly utilitarian and teleological. Those scholars valued the artifact for what it could physically do and
ignored all other functions. Pfaffenberger also recognized the tendency of analysts to emphasize the alienation caused by complex machines and to treat them as categorically different from traditional tools. For instance, the assembly line robots in automobile manufacturing plants are not treated as tools in the same manner that pneumatic drills and welding torches are.

The sociotechnical system was proposed by Pfaffenberger to counter the Standard View. His understanding of sociotechnical systems has two parts. First, Pfaffenberger redefines *technique* to mean a system that includes materials, tools, skills, knowledge, and modes of work to produce an artifact. He considers this the more restrictive of the two parts. The second is the sociotechnical system itself. This refers directly to the activities of a technology generated from techniques, material culture, and labor. For example, the creation of bone and antler tools in the French Midi-Pyrénées during the Late Magdalenian required the collection of materials, the knowledge of how to make and repair the tools, and the organization of labor (Dobres 1995). Dobres also claims that these activities were done in the open and allowed social relations to infuse work processes. A fully social understanding of technology combines techniques, sociotechnical systems, and material culture.

Pfaffenberger’s understanding of the sociality of technology does not extend agency to the artifact in the way that ANT does. Instead, the actions performed by technology are symbolic actions and require the actions of humans to reinforce the symbolism (2001). Pfaffenberger, like ANT theorists, does reach the conclusion that the chosen system is just one of multiple possible systems that could be applied to the
problem. This means that the chosen system is not necessarily the most effective or most logical system, but one that provides a solution. Following his previous descriptions, the system may not be composed of physical objects, but is, nonetheless, a technology.

Unlike the ANT theorists, Pfaffenberger (2001) concerns himself with the political dimension of technology and technological change. Pfaffenberger views technological change as a series of statements and counterstatements he refers to as 

*technological drama*. In a technological drama, one group becomes marginalized by the technology and practices of the dominant group. The marginalized will then produce counterstatements and actions to subvert the power of the dominant group. This can be done in several ways. *Technological regularization* creates or modifies technologies for political ends. Often, these technologies are embedded in symbolism and myths resembling the Standard View. *Technological adjustment* is the subversive action of the marginalized communities who use their activities to compensate for their social loss. *Technological reconstitution* is a more overt maneuver where the marginalized try to invert the implicit symbolism of a technology in a process of *antisignification*. The political nature of the sociotechnical system is what gives it strength. By combining it with ANT, anthropology is given a robust tool with which to examine technological change.

**Computer Revolution**

This survey of the anthropology of technology has demonstrated the many ways that anthropologists have examined and criticized the modern concept of technology and proposed a more social and variable one. This survey will conclude with one more major
deconstruction. The final tower to fall in the modern construction of technology is the computer revolution.

The primary challengers to the computer revolution can be found in the area of the anthropology of computing and include scholars such as David Hakken and Bryan Pfaffenberger (discussed above). Their goal is to assess the validity of the computer revolution claim. The computer revolution claim states that advanced information technology (AIT) has fundamentally changed the social and economic structure of modern society, on scale with the agricultural and industrial revolutions.

To test this claim, Hakken (1999) proposed six questions that get at the heart of the computer revolution. He suggests that these questions can be applied to any new technology to judge its revolutionary properties. He refers to these new technologies as technology actor networks (TAN), borrowing the concept from actor-network theory. The questions are as follows:

1. Do the artifacts . . . actually have the capacity to do what they are conceptualized as doing?
2. Are the potentials for new forms of activity implicit in the new networks actually realized?
3. Is the new TAN associated with new forms of social agency?
4. Is it characterized by social alliances substantially different from its immediate predecessors?
5. Do groups and organizations with significant social power, whether new or preexisting, actually frame their activities as the concept embodied in the TAN?
6. Are the individual “systems” of the new TAN, and the TAN as a whole, stable? [Hakken 1999:24]

Hakken states that the technology becomes more hegemonic within the society as more questions are answered in the positive. The introduction of large-scale farming or the industrial factory would clearly satisfy these questions.
The rest of Hakken’s book *Cyborgs@cyberspace?* (1999) is a survey of case studies and theories pertaining to AIT that aims to answer these questions about computers. Hakken ultimately concludes that computers are not revolutionary, but instead intensify cultural properties that are already in place. Hakken does not discount the potential for a computer revolution though. He writes, “What we know about cyberspace so far does not *yet* empirically justify drawing a sharp boundary between its social dynamics and current type of social formation” (p. 312). The implication is that the computer revolution may be on the horizon, but has not come to fruition.

These ideas have been echoed by Pfaffenberger in his aptly titled article “The Social Meaning of the Personal Computer: Or, Why the Personal Computer Revolution was No Revolution” (1988). Pfaffenberger describes a period when the personal computer was entering the market. During this time, competing forces where determined to use the computer to change the world in their favor. Industrial forces wanted to regulate and standardize labor with the new computers, while subversive forces wanted to increase autonomy and freedom. The forces provided reciprocal checks and kept the computer from achieving any revolutionary status. Pfaffenberger (p. 46) states, “to be sure, the new technology may engender change, even radical change, but such change is not likely to occur in the terms envisioned by those who framed its original context of meaning.”

The outcome of these critiques of the computer revolution is a technological and social landscape that is familiar to anthropology. Technology can now be treated as an anthropological subject existing within familiar social structures. While these structures
are changing, they have not morphed so radically that anthropologists lack the context in which to study it.

**The Application of Theories**

The perspectives presented in this chapter transform modern technology into an object of anthropological interest. They have welcomed the machines into the social realm of human beings as equals. By restructuring technology in this way, anthropologists can apply familiar analytical strategies to non-human objects. Actor-Network theory and the sociotechnical system even provide new strategies to emphasize the social effects of technology.

This thesis contributes to the anthropology of technology by applying the approaches outlined above to the study of translation. From the history of translation technology to the political jockeying in the translation industry, actor-networks, sociotechnical systems, and cyborg politics will continue to resurface. In addition, the digital world will be visited as communities form online and the revolutionary nature of the new translation technologies will continue to be explored and occasionally challenged.
CHAPTER 3

Overview of Types of Translation

The world of translation is a complex network of actors that comprise a rich working culture. This chapter introduces the reader to the history and process of translation and the new technologies used to facilitate that process. It will first explain standard human translation and the steps involved in translation work. It will then explore each technology used and examine the respective histories and current structures of each.

Human Translation

Translation is an ancient occupation, established enough to have received its own patron saint, St. Jerome, himself a translator who lived in the Roman Empire. St. Jerome must have found favor with God, because the translation industry has flourished and is now estimated to be worth $33 billion (Kelly and Zetzsche 2012). For most of its history, from monasteries to skyscrapers, translation has relied on human labor. Translators today are a complex group of individuals. The following is a brief sketch of the translation landscape.

According to a survey conducted by the American Translators Association (2007b), women and internationals make up the majority of the translation industry, each representing approximately two-thirds of its respective group. Surveys circulated among translators in the UK agree with the female-heavy demography of the industry (Fulford...
2001, Fulford and Granell-Zafra 2005). A second survey conducted by the ATA (2007a) indicates that 80 percent of respondents work either part or full-time as independent contractors. Over 80 percent of respondents also held a bachelor’s degree or greater (ATA 2007b).

Statistics do not tell the full story of the translation industry. Many translators enter the industry as a second or third career choice. It is not uncommon for an individual to begin a translation career by translating company documents because he or she has a particular language set. LB describes her entrance into the translation industry.

One of my employers requested, knew that I spoke Spanish, and—very typical of employers who don't understand translation—said, "Well, you speak another language. Can you translate these documents?" And I was working at a financial services company. I was an account manager covering Latin America, Latin American accounts. So they were having me translate contracts, statements, client statements, and I found that I liked it. Even though it was off the side of my desk, sort of, so to speak. And it's the one activity that keeps my attention for extended periods of time. So, OK, there's something here. If I, you know, you get to the point where you don't want to drink, you don't think about going to the bathroom, you don't think about getting up. You're just working and for, you know, four or five hours at a time. It's like, "OK, I like this." [LB, interview]

While not formally trained in translation practices, these entrants bring with them a wealth of information regarding the structure, context, and vocabulary of a particular subject area. Often, translators entering from other industries hold degrees in those fields of study. Of the translators I interviewed, degrees represented ranged from theology to business to cancer biology and animal nutrition.

The second route for aspiring translators is to take the educational path. In the field of translation, this is a relatively new phenomenon. Before the 1980s, all university
trained language professionals came from world languages programs. For these students, the ability to translate was a secondary skill derived from the intensive study of a language. WG graduated from one of these programs. She states, “A lot of us were not trained as translators. If you major in a language, translation is sort of one of the logical things that you can do . . . And so, we were not trained as translators. It's something we would pick up for whatever reason. And frankly, we just did it.” Translation Studies programs started to develop in the late 1980s and early 1990s with the Monterey Institute, the sole exception, being founded in 1955. Today, there still remains only a handful of schools that offer higher degrees in translation.

When producing a translation, a translator will work with two languages. These languages are known as the source language, the language being translated from, and the target language, the language being translated into. Likewise, the texts provided and produced are termed the source text and the target text respectively.

The languages a translator works with are known as language pairs. Language pairs are composed of a source language and a target language with the direction of translation noted. An example of language pair would be French to English; it can be notated to as FR > EN. Common practice among translators is to use only one target language, which is the individual’s native tongue. Those translators who were raised in a multilingual environment or have had a prolonged exposure to another language (e.g., established immigrants) may be comfortable with having multiple target languages. For example, a French immigrant having lived in the US for several years may have a reciprocal language pair (FR< >EN). Because a translator is limited to one or two target
languages, a translator may not use all possible language pairs formed from his or her known languages. While a translator may translate from French and German into English, he or she may not back translate either pair or be able to translate from French into German or vice versa.

Translators work in specific areas of specialization. Because each field has its own jargon and knowledge set, it is unusual for a translator to be a generalist. Translators who specialize in financial documents are unlikely to translate scientific papers. At the same time, translators cannot be so specific about what they will translate as to limit their job opportunities. In finding a balance, translators become temporary specialists. When they start a project, translators will familiarize themselves with the topic of the text. The information may not be retained after the project has been completed. Some of my informants reported that they tend to forget facts about topics they have translated.

**Workflow**

“Translator” is primarily an occupational identity, and as such, this identity is dependent on doing work. The new technologies can also be defined by what work they do and how this work is done. Thus, to understand how the roles of the translator and technology intersect, we must first understand the translator’s work process and how these new technologies augment that process.

In the translation industry, the work processes of a translator are known as “workflow.” Workflow is an ambiguous term that covers all parts of the translation process. I will divide workflow into two parts. I will refer to the work processes concerned with the recruitment of labor and capital and the exchange of whole texts as
industrial workflow. Those processes concerned with the transformation of a text from one language to another will be referred to as translation workflow.

These workflows will be described below based on the information provided by my informants and supplemented where needed by professional and scholarly publications. We will begin by examining the workflow of standard human translation, and then how this workflow is augmented by the new technologies.

Following these two workflow processes, I will describe how various relevant technologies are incorporated into the workflow process. These include computer-assisted translation (CAT), machine translation (MT), and crowdsourced translation (CST), as well as the rudimentary technologies that underpin all translation activities.

*Industrial Workflow*

The industrial workflow begins when someone, somewhere decides that a text needs to be translated. Despite the extreme variation in the translation industry, all translation jobs require three elements: a source text, a target language, and someone to commission the work. Excluding literary translation where the translator is the one who starts the process, the commissioner is often not a language professional and requires the labor of others. Since most translation is done by freelance translators, the commissioner takes on the role of the client.

The client has two options when commissioning a translation. The client may either hire a translator directly, or hire a language service provider (LSP), also commonly referred to as an agency. If a client choses to hire a translator directly, it is often because he or she has done work for the client before. As was the case of one informant, the
translator may be a former employee of the client and has chosen to pursue translation professionally. It can be risky for a client to directly hire a translator if the client is unfamiliar with the translation process and instead may choose to work with an LSP.

When an LSP is contacted, a new level of process is added to the industrial workflow. The LSP begins its work by collecting as much information as possible from the client regarding the project. The LSP then assigns a project manager (PM). The PM coordinates the labor involved for a particular project and negotiates the parameters of the project with the client. Assignments are then sent out to one or more translators, depending on the size of the project, for acceptance or rejection. If accepted, then the translation workflow begins (discussed below). When the LSP receives the target text from the translator, it then may choose to employ editors and revisers to make corrections, fix any issues with the text layout, and produce a final product.

Whether the client hired a translator or an LSP, the process ends when the client receives the final product. At this point the industrial workflow is closed.

*Translation Workflow*

The translation workflow is a highly personal process due to the bulk of the work being done within the translator’s mind. Translators use a wide variety of methods and techniques during the translation process. There are some common features that many of my informants cited as being important to the process.

Many translators will begin the process with an initial read-through of the source text. During this stage, the translator may start to translate some parts of the text mentally
and to identify more difficult areas. WG, a literary translator, describes the initial mental translation and what type of cognitive activity she focuses on.

You know, to tell you the truth, I start translating it in my head as I'm reading it. And this is a secret we don't like to tell, but when material is really dry and boring, like I'm going through some stuff on the Indians who were in the Caribbean when Columbus came, oh BOR-ING! And I keep my eyes open by translating this stuff in my head. But a lot of times, it will start translating in my head as I'm reading the story. And I sort of mentally begin to take notes about what are some possible difficulties. "What does this term mean. I wonder if this has a double meaning." And what I found out is that with Caribbean French, often terms have double meanings because a word will change meanings in the Caribbean. It doesn't mean what it does in France. And some writers use that very much on purpose. [WG, interview]

Following this step, the translator may choose to conduct some research on the topic, depending on his or her knowledge base. This includes developing fundamental knowledge of the topic or comparing other texts in the topic field to build an appropriate vocabulary.

The identification and research stage is then followed by a production stage. At this point, the translator begins to produce drafts in the target language. Each draft goes through two phases: the production phase where the text is written, and the editing phase. Research may continue during this stage.

When the translator feels that he or she has produced a good translation, the final stage of the translation workflow may begin. During this stage, the document is prepared for submission. A final proofread is conducted to fix any typographical errors, and the formatting of the document is adjusted to meet the client’s specifications. This would include setting proper margins, font types, and spacing as well as adjusting for the
addition or subtraction of characters due to the change in languages. The translation workflow then ends when the document is submitted to the LSP or directly to the client.

**CAT Workflow**

There are three new technological advances in translation: computer-assisted translation (CAT), machine translation (MT), and crowdsourced translation (CST). Of the three, CAT is the least obtrusive to the workflow. It primarily augments the translation workflow by adding steps to the process. CAT still relies on most of the translation work being done by the human brain, but applies computer aids (as the name suggests) to that process.

CAT workflow begins with a new prepping stage. The source text must first be prepared before it can successfully be imported into the translation environment tool (TEnT), a specialized software that hosts CAT tools. To do this, the text must be converted to an electronic form if it is not already in one. This includes transcribing paper documents and converting PDFs to text files. Further prep work requires the removal of as much formatting as possible from the text files. Any non-basic formatting (e.g. italics, highlights, hyperlinks, etc.) will appear as tags in the TEnT and the reduction of these will help speed the translation. When the text is ready, it is loaded into a TEnT. At this point, the translator will choose which tools he or she will use for the project. Commonly used tools include translation memory (TM), term management, and dictionaries.

The actual translation process resembles the steps described in the translation workflow with a few notable exceptions. First, the text is divided into units and placed on the left of the screen (e.g., Figure 2.1). The right side of the screen contains input fields
Figure 2.1: Example of a translation environment tool
for the translator to type in the corresponding target text. Secondly, if the translator is using TM, then some text may already be translated. These translations must be accepted or rejected and replaced with an acceptable translation. When the translation is complete, the target text is then exported from the program as a text-based file (e.g., .doc, .txt, or .ppt) and the final stage is initiated.

**MT Workflow**

The implementation of a machine translation (MT) system has its greatest effects on the translation workflow. Unless a client is using an in-house MT program to translate just-for-information (where precision is not a priority), the industrial workflow receives minor alterations. Primarily, the client or PM will recruit a post-editor rather than a translator. As Koby (2001) has indicated, post-editors are also trained translators; therefore, the work being done remains in the translation community. The client or LSP may also submit the machine translated text to the post-editor without the source text for comparison.

Unlike other forms of translation, the bulk of the translation work in MT is carried out by a computer program. The translation workflow is simplified to the submission and retrieval of text from an MT program. An MT system also adds a new form of labor in post-editing, which includes its own workflow. In the post-editing workflow, the post-editor reviews the target text and repairs it for human consumption. If executed correctly, with a high enough quality translation, the post-editor will review the document for machine errors. It is in the post-editor’s interest to make minimal changes to the text. Unlike a translator, who would work on a series of drafts and revisions, the post-editor
only makes changes that are necessary for comprehension. After the post-editing is complete, the text may or may not be reviewed by others, depending on its final use.

**CST Workflows**

Of the three new technologies, crowdsourced translation (CST) has the most dramatic effect on workflow. CST completely changes the industrial workflow. Rather than submitting text to a translator or LSP, the client will post the content onto a website. Due to the nature of crowdsourcing, all CST projects are conducted online. It is on these sites that the translation occurs. After a translation is approved, it may or may not be reviewed by a professional editor before it is published.

While each client may use a different interface for CST, they will often follow the same formula. The following is based on the Facebook Translations application for facebook.com and the Twitter Translation Center found at translate.twitter.com. On these sites, an amateur translator is able choose between two activities related to the translation workflow: translate or vote. Of the two, the translate option is the most traditional. Words or short phrases in need of translation will be provided, along with a text box to input the target text. When the translator is satisfied with his or her translation, he or she will then submit it for a vote. During the voting period, all participants in the language pair may review the submissions for a given term or phrase and vote for the best translation. At the end of the voting period, the submission with the highest number of votes is published. An example of the Facebook Translation application is illustrated in Figure 2.2.
Figure 2.2: Facebook Translation application
Basic Technologies

No matter what type of translation is involved, a host of rudimentary technologies are utilized. Unlike the three new technologies discussed above, these basic technologies do not alter the traditional workflow. These technologies act as a continuation of older processes.

The first technology to mention is the word processor. In the past, translation was done via pen and paper and then moved to the typewriter. It should be no surprise to the reader that modern translators use word processing programs, the most common of which is Microsoft Word. Even those translators who refuse to use CAT or MT have mostly made the switch to computer based text production.

The second technology should also not surprise the reader. In the past, most translation documents were sent through the post office. Communication between translator and client was done through the exchange of physical documents. Today, most communication is sent using e-mail. Text is sent as attachments and questions can be sent and answered by the client concerning the documents more rapidly using this format.

The internet has also become a useful tool. The translator is able to access multiple online dictionaries and pose questions to a larger community. He or she also has access to more translations in the topic area and can quickly research difficult concepts. In addition, the internet has provided new means for clients to contact new translators or LSPs.

Together, these primary technologies intensify workflows. While they do not radically augment translation practices in the same manner as the new translation
technologies do, they are able to increase the speed and knowledge of the translator and open him or her up to new economic opportunities. While not revolutionary, these technologies are notable factors in the workflows of translators.

**Computer-Assisted Translation**

Computer-assisted (or -aided) translation (CAT) is regarded as the most successful of the new technologies, being quickly adopted by the translation industry. Although it is now the darling of the translation industry, it was once a contested network of theorists and programs. Today, the technology has not been fully black-boxed, as the system still is undergoing change and contestation.

One of the first propositions of CAT is attributed to Martin Kay’s article, “The Proper Place of Men and Machines in Language Translation.” It was based on research Kay conducted at the Xerox Palo Alto Research Center (PARC) and was first published in 1980. At the time, PARC was one of the leaders in technological development, having produced the computer mouse and graphical user interface which made popular computing possible. The focus of “The Proper Place” was to discuss how MT could ethically be implemented in human systems.

Kay recognized the trouble with contemporary MT systems and the philosophy behind their development, but he also recognized the building demand for more translation. Kay’s vision was to save the industry through what could be recognized as a cyborg relationship of computer to translator.

Properly used, it does not dehumanize by imposing its own Orwellian stamp on the products of the human spirit and the dignity of human labor but, by taking over what is mechanical and routine, it frees human beings
for what is essentially human. Translation is a fine and exacting art, but there is much about it that is mechanical and routine and, if this were given over to a machine, the productivity of the translator would not only be magnified but his work would become more rewarding, more exciting, more human. It is altogether right that we should look to the computer. Indeed, if the need for translation is as great as it is said to be, the computer is our only hope. [Kay 1997:3-4]

Kay’s position is quite clear: by incorporating computers into a uniquely human task, that task could become more human than it was before, and productivity would increase.

Many of Kay’s proposals would see their way into CAT tool programs. Innovations such as text alignment, terminology management, and predictive text (discussed below) now exist outside of “The Proper Place.” Ultimately though, Kay’s article was meant as a guide to slowly introduce translators to new computer technologies until MT could be fully employed. The CAT tools proposed in the article were supposed to be temporary solutions for the translation industry.

Seventeen years after “The Proper Place,” it “ha[d] hardly aged at all” (Melby 1997:29). In “Some Notes on The Proper Place of Men and Machine in Language Translation,” Melby (1997) was responding to the re-publication of “The Proper Place” in the journal Machine Translation. Surprisingly, little had changed in over a decade and half since Kay’s first publication. Regarding CAT tools, Melby laments, “strangely, human translators, by and large, still do not use the tools that are available and have been available for several years, other than the ubiquitous word processor” (p. 33). Melby places most of the blame on the clients who “often do not understand the need to supply to the translator resources beyond a marginally readable fax of the source text” (p. 33). While the programs themselves may have been stable artifacts that translators were
willing to work with, the clients’ lack of knowledge or willingness to be fully enrolled into the CAT tool network made many of Kay’s proposals nearly impossible to implement.

Over the next decade, more and more translators adopted CAT tools into their regular routine. While the vast majority of translators were still keeping track of terminology via paper and pencil or in simple word-processing files in 1997 (Melby 1997), by 2001 attitudes began to soften toward new tools. A survey of UK translators shows that only three percent of translators were already implementing terminology management tools and eight percent were using translation memory, but 60 percent were seriously considering using both tools (Fulford 2001). A similar survey conducted four years later showed growth in the industry with 24 percent of translators now using terminology management tools and 28 percent using CAT tools (Fulford and Granell-Zafra 2005). As of this writing, approximately 88 percent of translators are using CAT tools (Tabor 2013).

Fulford and Granell-Zafra (2005) see the increased use of CAT tools stemming from a greater shift in the population toward new, cheaper technology. The increased availability of personal computers and word processing programs allowed for freelancers to have access to new tools without relying on company mainframes. The internet also transformed the way in which texts were exchanged, moving away from fax and post toward e-mail. This was a significant step toward a more stable CAT tool network as more translators were receiving computer-friendly text.
Another significant change in CAT came a few years later. For the first half of its history, CAT tools directly interfaced with word processors like MS Word. These systems tended be buggy and would often crash on the translator. Switching from word processing-dependent programs to full blown software made CAT systems more stable. The term Translation Environment Tool (TEnT) has been attributed to Jost Zetzsche to describe these new programs. This switch to TEnTs spelled the death of word processing-dependent programs.

2007 was the last year in which MS Word still played any significant role in the TEnT translation process. With Trados already having moved away from Word as its preferred translation platform, Multitrans and Wordfast on their way to doing the same thing, and Metatexis hoping to do the same, there really aren't that many left hanging on to Word. [Zetzsche 2008]

This made CAT more easily adoptable since the programs themselves were more stable. The switch to TEnTs did mean learning a new program interface, which has been cited as one reason not to adopt the technology (Tabor 3013), but companies like SDL have been working to make their interfaces more user friendly. The newest version of SDL Trados 2014, showcased at the 2013 ATA Annual Conference, mimics the toolbars found in the MS Office suite.

CAT consists of various tools that are meant to assist translators. Of those, the three most noteworthy are text alignment, terminology management, and translation memory. Text alignment in its current form was proposed by Brian Harris in 1988 as “bi-text” (Hutchins 1998). This followed along the lines proposed by Kay (1997) to provide two text panes within one program for the source and target text. In its current form, aligned texts are situated side by side rather than top to bottom, allowing the translator to
easily see the relationship between texts. Text alignment works by separating the source text into smaller units, be they sentences, sentence sections (most often with legal translation), or paragraphs, and are displayed on the left side of the screen. Text boxes corresponding to each segment for the input of target text are displayed to the right.

While text alignment has limited benefits for a single translation project, it provides a necessary base for the other tools to build on by providing a manageable relationship between the source and target texts. Therefore, text alignment is a useful tool for multi-text or multi-translator projects.

Terminology management may be one of the oldest CAT tools. The act of building terminology databases (termbases or TBs) actually precedes computer-based translation. The process used to involve pencil and paper, but has moved to computer storage which makes larger TBs easier to manage and access. Termbases work by affixing terms in multiple languages to one concept. This means that a termbase may include multiple entries for one term with each entry linking the term to a single concept. This is opposed to lexicographic databases, such as dictionaries, that associate all known concepts with a term. A one term (per language) to one concept relationship is ideal and is meant to reduce ambiguity in specialized language. This is not always a perfect system since a language may lack a term for the given concept. Generally, a termbase consists of key words or phrases for the specific text or genre. In the case of difficult to translate terms, translators will use a variety of strategies to solve these problems including translator notes or the adoption of the source term into the target text, all of which can be documented in the termbase. When correctly used, terminology management tools can
boost consistency and accuracy in translation projects that involve multiple translators or text, or when working continuously with a client. A well-managed termbase will also improve productivity on large products by reducing the amount of redundant research conducted as terms are repeatedly encountered. This is very likely if the project persists over several years.

Translation memory (TM) is able to combine the two tools above to actively assist the translator. TM is, at its core, a type of machine translation system. TM is able to analyze texts that have been previously translated and identify strings of terms. Translators build databases of legacy texts, formally translated documents, over years of work which can be leveraged by the TM for future translations if the texts are properly aligned. When TM is used in an active translation project, it suggests translations either through predictive text (similar to the autocomplete feature found in cell phone texting applications) or by preemptively filling in text boxes. The translator can then choose to accept or change the translation. TM is also able to identify similar strings within a text and apply translations once one string has been manually translated. TMs can pull terms from termbases that are associated with the current translation project. Because TM is highly reliant on having corresponding translation units, bi-text alignment is a necessary prerequisite to use this tool.

Other minor tools have been added to the general CAT system. Online multilingual dictionaries have begun to replace physical ones in most translators’ libraries. The internet also provides a wealth of documents in both the source and target languages which can be used to verify terms and provide parallel documents, or texts that
cover the same general topic and can be used for reference. For a more complete review of the history of CAT tools, see John Hutchins’ “The Origins of the Translator's Workstation” (1998).

CAT tools have become the golden child for technology proponents in the translation field. Celebrated for once being a contested system, CAT foreshadows how the industry may one day accept other technologies. Not all translators have accepted CAT tools though. Latin American translators still consider the use of CAT to be bad form. They, instead, prefer to use the older methods of translation. If not all translators can accept CAT, what does that say for the future of the other new technologies?

**Machine Translation**

The concept of a thinking machine can be traced back to Alan Turing, the father of artificial intelligence, and his 1950 article “Computing Machinery and Intelligence.” Turing’s goal in the article was to explore the notion that a machine might “think” and how to identify this phenomenon. From this article came a theoretical game known today as the Turing Test. In the game, one person asks questions to a human and a digital computer via some mediation device that masks the interlocutors’ identities. The inquisitor must then determine which is human and which is machine. Turing hypothesized that a thinking machine would be able to pass as human.

Sixty years on, machine translation is still trying to pass this test. The ultimate goal of this technology is to produce what translators call Fully Automatic High-Quality Translation (FAHQT). Ideally, FAHQT would be indistinguishable from human translation. The first serious proposal for MT was found in the Weaver memo on
translation of July 1949 (Koby 2001). Like many mid-century scientists interested in the new digital computer, Weaver’s memo is infused with a reserved optimism born of hope for the new technology and untested possibilities.

“The suggestions of this memorandum will surely be incomplete and naïve, and may well be patently silly to an expert in the field – for the author is certainly not such” (Weaver 1949:1). Weaver was neither a linguist nor a computer scientist, but he did recognize the increasing need for translation. Weaver was, instead, a mathematician interested in communication systems and the new field of cybernetics (Hayles 1999). The Weaver memo is alternatingly extremely naïve and astoundingly prophetic. Weaver’s basis for machine translation comes from the use of the digital computer in code breaking during WWII. Cryptography is continuously mentioned throughout the document, including a story told to Weaver by an ex-German national referred to as “P.” Weaver believed that, at its deepest levels, all languages used the same elements, and that these elements could help decode other languages. “It is very tempting to say that a book written in Chinese is simply a book written in English which was coded into the ‘Chinese code’” (Weaver 1949:10). Weaver saw how basic principles of cryptography could decode foreign language messages without an actual speaker on the project and applied this to contemporary research in linguistics that was looking into common structures of languages. He particularly noted the works of Hans Reichenbach on the Turkish language.

Weaver originally attempted to enroll cyberneticist Norbert Wiener into his project due to his linguistic and computer expertise, but Wiener found the idea too
preposterous and turned down Weaver’s offer. Weaver instead turned to Andrew Booth for some assistance in developing his ideas. Booth was, at that time, working on mechanical dictionaries which could systematically look up words in the computer memory and find matches. If no match was found, the computer would begin to remove letters from the end, working backwards, until a match was found, thus negating the problem of suffixes. Weaver also noted projects based on word-for-word translation and their failures to produce coherent text.

Following these leads, Weaver proposed his own system. He noted that the biggest problem with all other attempts to mechanize translation lay in the ambiguity of words. For this, he suggested that a workable system would look at N number of words before and after the term in question. He later revised this to N number of nouns. He also suggested that the dictionaries in use should contain two-word terms as well. This principle is now used in terminology management, as linguists recognized that one semantic unit might stretch across multiple words. While this system may seem simplistic, it set the groundwork for looking at terms (instead of words) within their context for MT.

Weaver’s most interesting predictions may have related to the usability of the system. Weaver all but wrote off the use of MT for literature, stating, “so that again one must be pessimistic about the problem of literary translation. But insofar as written language is an expression of logical character, this theorem assures one that the problem is at least formally solvable” (1949:10). Weaver preferred to focus MT use on scientific and technical text, favoring mathematics the most and the social sciences the least. He
also realized that the purpose of MT was not to produce elegant text, but quick information. These patterns would continue in the field.

Koby (2001) has criticized the Weaver memo and other writings by the man for being too simplistic in their understanding of the translation process. In response to Weaver’s introduction to Locke and Booth’s (1995) book, The New Tower, Koby states, “certainly modern practice usually has the translation produced by a human translator proofread and edited (or revised) by a second and sometimes third person. Thus, the expectation that a machine should be able to translate in one pass without revision is unrealistic” (p. 3). Unfortunately, this unrealistic view of translation would continue for the next two decades after the Weaver memo, leading MT to the brink of annihilation.

The second most important document in the field of MT is the Automatic Language Processing Advisory Committee (ALPAC) report of 1966. ALPAC was set up by the Joint Automatic Language Processing Group (JALPG) which represented the US Department of Defense, the National Science Foundation, and the Central Intelligence Agency (Hutchins 1996). The goal of ALPAC was to advise these organizations on how much they should support MT. Hutchins (1996) points out that the original document pertained to computational linguistics, but most of the research in the field at that time was concerned with MT. He also notes that the report focused on government needs and Russian-to-English translation, ignoring all other MT applications.

ALPAC found several problems with MT systems. First, the committee members found MT to be superfluous for the needs of JALPG. In the sciences, they found that it would be easier for scientists to learn Russian than to rely on MT output, and that other
sectors had a surplus of human translators. They also exaggerated the inherent flaws within MT systems. Hutchins states:

There can be no doubt about the deficiencies and inadequacies of the translations illustrated but it was perhaps a major flaw of ALPAC’s methodology to compare unfavourably the results of general-purpose MT systems (some still experimental) working from unprepared input (i.e. with no dictionary updating) and the output of a small-scale demonstration system built exclusively to handle and produce a restricted set of sentences. [1996:11]

In other writings, Hutchins (1986) wonders at the omission of post-editing from their analysis. In all, the ALPAC report did not look favorably upon MT and instead advocated for machine-aided translation (now CAT).

Even though the ALPAC report had a very narrow focus, it had wide reaching implications for the MT community. Hutchins once again states:

Its effect was to bring to an end the substantial funding of MT research in the United States for some twenty years. More significantly, perhaps, was the clear message to the general public and the rest of the scientific community that MT was hopeless. For years afterwards, an interest in MT was something to keep quiet about; it was almost shameful. To this day, the “failure” of MT is still repeated by many as an indisputable fact. [1996:9]

Following the ALPAC report, research in MT died down. This has left an indelible mark on MT which had to struggle to redefine itself and come to terms with its negative impressions.

Today, MT has had a renaissance as new technologies and techniques become available to the industry. Many computer users may be familiar with such free MT software as Google Translate, Bing (Microsoft) Translator, and BabelFish. As of this writing, any internet user using the Google Chrome web browser has the option to
automatically translate foreign-language web pages, and Facebook offers translations for foreign language posts via Bing Translator. Translators still seem split in their opinions about MT. While some see it as a failure, others expect FAHQT to be realized in the next fifty years. Those more positive outlooks come from recent advances in field. LB states, “The reason they're [MT] bad now is because you feed the machines with bad translations, with bad data. So, garbage in, garbage out. But, there's more improvement and there's more of a focus on, and there is a need for large amounts of translations.” She explains that researchers have begun to recognize the importance of good quality translation to teach the machine. Rather than dumping in as much text as possible, computational linguists are now working with translators to train the systems with quality text.

This collaboration between computational linguists and translators is still relatively new and limited. Most translators are not taught how MT works or trained in post-editing skills. The two fields also remain divided among universities, with most MT research being conducted in universities like Carnegie Mellon, which lack translation programs.

Current trends in MT have favored statistics-based MT, which relies on a large database of text to produce translations. Google Translate and Bing Translator are examples of this type. They have gained popularity on the web, which supplies the texts for the database, since most consumers desire for-information text, rather than high quality text. Store-bought MT systems used by translators are much more powerful than these free versions and can be tuned to the translators’ needs. More and more, translators
are devising hybrid systems by combining MT software with local TMs to create synergy among the technologies and improve translation time (Lang 1998). This new use of MT may be what it takes to push the technology forward and become more welcomed in the translation community.

**Crowdsourced Translation**

Of the three new technologies, crowdsourced translation (CST) is by far the newest to the translation enterprise. This form of labor organization has only been viable since the introduction of Web 2.0. Web 2.0 refers to the websites or web tools that allow for user interaction. As opposed to static sites that only allow for information retrieval, Web 2.0 sites offer a broader range of activities. Most popular commercial web sites have now switched to a Web 2.0 platform with social media sites like Facebook and Twitter, or media sharing sites like YouTube and Instagram leading the way. It will be made clear below why CST is dependent on a Web 2.0 platform.

Crowdsourcing occupies a problematic place in the study of technology. Unlike the other technologies discussed in this thesis, crowdsourcing is composed of human labor rather than mechanical labor. This thesis takes the position that crowdsourcing is a technology that relies on social networks. Following Pfaffenberger’s (1992) definition of the sociotechnical system, technologies are combinations of labor, knowledge, and materials. Crowdsourcing represents one such system and the organization of labor used for crowdsourcing projects should justly be called a technology. It is telling that Amazon chose to name its crowdsourcing platform Amazon Mechanical Turk. Alluding to the Enlightenment-era chess-playing machine that was secretly controlled by a chess master,
Amazon Mechanical Turk allows individuals to complete simple tasks like identifying pictures for small rewards (Zaidan and Callison-Burch 2011). As will be shown, CST is itself a mechanical Turk that unites human labor with digital workspaces to produce a novel translation technology.

CST has its roots in user-generated content, and more specifically in user-generated translation (UGT). This term, coined by O’Hagan (2009:97) refers to “a wide range of Translation, carried out based on free user participation in digital media spaces where Translation is undertaken by unspecified self-selected individuals.” Some individuals in the translation industry may also be familiar with DePalma and Kelly’s (2008) term “CT³” which refers to the merging of community translation, collaborative technology and processes, and crowdsourcing. Community translation refers to translation projects that are commissioned and carried out by volunteer communities such as fandoms, whereas crowdsourcing is commissioned by a client and carried out by the crowd. When properly viewed within a larger actor-network, UGT and CT³ resemble Pfaffenberger’s (1992) technological drama, something that some implementations of CST have lost.

UGT’s first major success was in fan-translating Japanese media (O’Hagan 2009). Starting with Japanese animation, known as anime, and then moving into game translation, fan translation has grown in prominence in the fandom and has begun to challenge commercial translation practices. New developments in computer technology have greatly increased the distribution of fan translation while decreasing the cost and production time for each translation. Technological advancements have also allowed fan
translators to work collaboratively and to distribute the workload among several
volunteers.

Fan translation can be seen as a rebellion against the established translation
practices of Japanese media. Non-Japanese speaking fans of anime or manga (Japanese
comic books) have become marginalized consumers of the media as the industry focuses
on the market in Japan. UGT has developed among members of the marginalized group
as a response to poor or highly edited translations and delayed official translation
(O’Hagan 2009). Starting in the 1980’s fans began to produce subtitles for VHS tapes
called “fansubs” (O’Hagan 2009), and the practice continued into the digital era as
“digisubs,” a type of fansub that relies on digital technology. Fans have also produced
“scanlations,” translated manga that has been scanned into a computer.

Fan translation of video games follows the same motivations with the addition of
some games never being publicly released outside of Japan. The island nation is one of
the largest developers of video games, but it can take a year or more for a game available
in Japan to see an international release, if it ever does. Piled on top of this, early game
translation was notorious for its poor quality. One of the most well-known is the
translation of the 1991 game Zero Wing which contained the line “all your base are
belong to us” (a more accurate translation should have been “CATS [the antagonist] has
taken all of your bases”) (Kelly and Zetzsche 2012:185-184). Fan translators have been
able to use console emulators, software which allows console games to be played on PCs,
to access the text files of games and translate them in a process known as “translation
hacking” (O’Hagan 2009).
As the term “translation hacking” implies, it and the other strategies described stand on questionable legal grounds. Fan translation can be seen as a breach of copyright laws, but UGT enjoys a positive relationship with the content creators. The goal of fan translation is to increase accessibility to Japanese media by non-Japanese speakers, thus the fan translation community has aligned its goals with that of the original content providers. Fan translators have also gained favor since they do not receive money for their translations, and many translation groups (especially in video game translation) pledge to stop supporting a translation when an official version is released. In some cases, production companies are approaching well-respected groups to provide the official translations.

O’Hagan (2009) has noted some key aspects of UGT. Collaboration tools have allowed fans to form work groups that are comparable to professional production, allowing the groups to produce same-day translations for manga chapters and next-day translation for anime episodes. Fan translation provides considerable free publicity by allowing the product to reach a wider audience. All this work is willingly done for free by the fan translators who already have strong motivations. Finally, fans possess considerable domain-knowledge that a professional may lack. It is these characteristics that O’Hagan believes that companies wish to harness with the implementation of CST.

Crowdsourced translation is, at its core, a legitimimized version of UGT. It is based on a more general form of production known as crowdsourcing. This strategy centers on harnessing the knowledge and work power of the crowd. The crowd is composed of individuals willing to work on a project for little to no financial reimbursement. Each
member is given a small portion of the work which is later combined into the final product. Notable crowdsourced projects are the Linux operating system, Wikipedia, and Open Office. While this type of labor organization can appear to be chaotic and fluid at first glance, Sack et al. (2006) and Ratto (2005) have demonstrated that crowd communities can be highly organized and controlled. These studies have also demonstrated that crowdsourcing can work hand in hand with more conventional forms of labor to produce a quality product. CST is a form of crowdsourcing that calls on the crowd to translate certain texts.

As a production strategy, CST allows clients to translate a large amount of text into multiple languages quickly and at minimal cost. Non-profit organizations have learned to benefit from this model. One such non-profit is TED.com, the host site of the renowned TED (Technology, Entertainment, and Design) Talks lecture series. The TED Open Translation Project works by providing an official English transcript for each video and then asking users to provide a translation. Translators can work in groups or alone, but must have their work checked by a reviewer before it can be published. When the project was launched in 2009, it had amassed 300 translations in 40 launch languages and had enrolled over 200 volunteer translators (TED.com n.d.).

While the use of CST by non-profits resembles the rebellious form of other UGT strategies, following Pfaffenberger’s (1992) understanding of technological politics, the commercial application of crowdsourced translation can be viewed as a counter-enrollment that works to normalize the practice. The workflow process used by Facebook and Twitter described earlier works to circumvent standard translation practices in favor
of the crowd. O’Hagan notes that cost-saving is not the driving force for Facebook and the company has claimed that any money saved was spent in developing the translation platform. With over 100 non-English languages available, including varying dialects, and continuous updates for multiple platforms, CST offers the company a quick and knowledgeable alternative. The same is true for Twitter and other social networking sites. Through this platform, Facebook is able to reach underrepresented language groups that may otherwise be ignored. Current projects include Cherokee and Gaeilge (Irish Gaelic), and Breton and Tamil have been proposed for future translations.

Using the crowd can be risky. Fan translation and crowdsourcing projects rely on the devotion of a small group of participants to keep people honest. By opening up CST projects to the general public, companies like Facebook may be inviting trouble. Crowd collaboration on the internet has been notorious for producing unexpected results. This is why a humpback whale tagged by Greenpeace was named Mr. Splashy Pants (Greenpeace 2007) and the “Dub The Dew” campaign was shut down when “Hitler did nothing wrong” was ranked as the number one name for a new Mountain Dew flavor (Rosenfeld 2012). Mayhem did finally strike Facebook Translations, and it was in Turkish. Several common phrases on the site were given inappropriate translations. For example, “Your message could not be sent because the user is offline” was translated to “Mesajın gönderilmedi çünkü penisin çok küçük” [Your message could not be sent because you have a tiny penis] (Kelly and Zetzsche 2012:213). Further incidents have been avoided by implementing stricter controls and editors.
With the crowd being successfully enrolled into commercial CST, a new group was marginalized: professional translators. It was LinkedIn that brought crowdsourcing to the attention of translators. In an effort to create its own CST program in 2009, LinkedIn sent a message to members who were registered as translators asking if they were willing to participate and translate the site for free (Bennett 2009). In response, upset translators created a group on the website named “Translators against Crowdsourcing for Commercial Business” (O’Hagan 2009).

CST today remains the least known of the new technologies among translators. Approximately one-third of my informants were unfamiliar with CST, and only one has actively participated in a CST project. While age may be a factor in awareness, according O’Hagan, Translation Studies has only recently begun to examine UGT. CST is also quite limited in its application. As one informant put it, “it requires buy-in. It requires people being interested and wanting to do it. Facebook did it. Facebook has a huge user base that uses Facebook a lot. So, they were probably successful and probably did a pretty good job with it simply because people were interested in it.” The public must have an interest in the outcome of the translation for this type of labor organization to be effective. For this reason, it is unlikely for CST projects to succeed outside of entertainment or social interest groups.
CHAPTER 4

Methods and Results

Methods

This project lasted for five months, from June to November of 2013. The research combined ethnographic interviewing and participant observation. Ethnographic, or unstructured, interviewing is a type of interview strategy where the interviewer wields minimal control over the interviewee. As Bernard (2006:211) puts it, “the idea is to get people to open up and let them express themselves in their own terms, and at their own pace.” Each informant was interviewed at least once in a location of his or her choosing. Because of geographical distance, one informant was interviewed over Skype and another via telephone. Participant observation involves the observer taking part in the activities being observed, rather than observing them from the outside.

This project was also multi-sited. Multi-sited ethnography “centers attention on the construction of the ethnographic object” (Hine 2007:655) rather than an ethnographic area (see also Marcus 1995). I choose this method of ethnography because the translation industry is not centered on one location but is instead constructed through various modes of communication and interaction in several spaces. This ethnography was conducted at several field sites, both physical and virtual.

During the 2013 ATA Annual Conference, I tested how domains paired with technologies. To do this, I conducted a simple survey with 11 translators via convenience
sampling and asked each participant whether or not one of the three technologies could be used with one of the domains on my list. I repeated the question for every combination. My domain list contained 11 items: advertising/marketing, business, diplomatic, financial, journalism, legal, literature, medical, pharmaceutical, scientific, and technical. This set of domains was formed through free-listing terms with my key informants. The set also reflects areas of training in university translation programs as well as divisions of the ATA Annual Conference.

**Informant and Site Selection**

All informants were trained translators. Their participation within the translation industry varied greatly from full-time professional translators to translation studies students. Informants were recruited from two sites.

The first informants were recruited from the translation program at a Midwestern university. The participants were contacted via e-mail. Recruitment was quickly expanded to include former students of the program. Those who responded included professors, students, and alumni of the program. In total, I recruited seven informants and conducted approximately nine hours of interviews. This group constitutes my core set of informants.

The interviews were conducted in offices, libraries, and coffee shops. The interviews were recorded with a voice recording device if the informant gave permission to do so. Since these interviews were unstructured and exploratory in nature, I refrained from using a script of questions. Instead, I choose to focus the conversation on the usage of technology and the attitudes held by the informant.
The second group of informants was recruited at the 2013 American Translators Association (ATA) Annual Conference. Informants were selected through convenience sampling to take a short survey (see Appendix A). Eleven informants were recruited. The survey was structured to elicit the translator’s attitude toward different technologies and their applicability to the different areas of translation.

Following the advice of one informant, I observed the forums of two translation websites, ProZ.com and TranslatorsCafe.com. The sites cater to the translation industry and offer forums for translators to discuss matters of interest. While the true identity of those participating in the forums cannot be confirmed, I have confidence in their legitimacy since both sites are professional in nature and are used to attract potential clients.

Finally, following recommendations from Latour and Woolgar (1986) and Latour (1988), I utilized professional and academic publications. The studies conducted by Latour and Woolgar (1986) and Latour (1988) demonstrate that many important arguments and debates originate in academic publications and go on to influence the field as a whole. For this project, published material within the field of translation is another vital object of study.

My participant observation was primarily at the 2013 American Translators Association Annual Conference (see below for a more formal description of this field site). There, I attended several sessions concerned with the application and development of relevant technologies. I also had the opportunity to meet and discuss my study with several translators and interpreters. These discussions were casual conversations that
helped me direct the focus of my study. I was also able to convert some of these individuals into formal informants who participated in my survey. A second observation site was the classroom of a Midwestern university. I attended a graduate level class that taught students how to use computer-assisted translation tools.

**The American Translators Association Annual Conference**

The American Translators Association (ATA) Annual Conference is an annual event that was vital for this study. In November 2013, the American Translators Association held its 54th Annual Conference at the Marriott Riverside hotel in San Antonio, Texas. As part of my fieldwork, I attended the conference from Wednesday night to Sunday morning. The goal was to meet translators from around the country, understand their attitudes toward the new technologies, and observe sessions about translation technology.

After completing registration, I was surprised by the contents of my welcome bag. Besides the obligatory name card and holder, there was a bright pink ribbon that read “First Time Attendee.” If I were an experienced translator, I may have had ribbons that read “Certified,” “Speaker,” or even one of the positions of leadership. In fact, some of the longtime attendees sported long trains of ribbons running off the bottom of their card holders. It quickly became apparent that my pink ribbon was intended to welcome me into the community.

In general, translators are a friendly bunch. After being stuck behind computer screens for most of the year, they look forward to the Annual Conference to meet and catch-up with their peers. Always ready to welcome new members into their community,
the pink ribbons mark new potential friends and are instant ice breakers—something a young anthropologist could easily take advantage of. The theme of community and acceptance goes beyond ribbons. In a program called “Buddies Welcome Newbies,” veteran attendees volunteer to take first-timers under the wing and mentor them throughout the conference.

Besides developing personal relationships, translators attend the conference to work on professional ones. The ATA hosts several events geared towards creating business connections. Such events included “Speed Networking,” “Networking Breakfast,” “Résumé Exchange,” and “Business Practices Mixer.” Translators could also participate in language certification tests, which were another big draw for the conference. The social and business sides of the conference merged on the bulletin board (Figure 4.1) in the foyer, which contained messages ranging from roommate requests to
job listings, to city excursions. For these translators and interpreters, the business and personal spheres were interlinked.

For those who came to learn, the conference boasted a grand assortment of sessions focused on language groups or areas of specialization. When not in one of these sessions, translators also had the option to visit the exhibit hall. There, translators could meet representatives from universities, software companies, and agencies, or buy books and tools. One of the most prominent exhibitors was SDL, the leading producer of translation tools. SDL held hourly demonstrations of Trados 2014, its latest translation environment tool software, right in front of the exhibit doors.

The ATA Annual Conference was the one place where professional translators and interpreters could gather together with software developers and researchers to share experiences and exchange ideas. The most moving moment of the conference was during the closing ceremony when the ATA leadership displayed pictures and video taken throughout the week. A sense of community could be felt in the images of Newbies meeting their Buddies and translators dancing in Zumba. For translators, the ATA is not just a business convention, it is a theatre for them to maintain and reform their translatorness and to reinvigorate their community.

Survey Results and Discussion

While the small sample size of the survey makes it difficult to form generalizations within the translation industry, two notable patterns were revealed. The first pattern consists of translators reporting that all or almost all domains were
compatible with CAT tools (Figure 4.2). Forty-five percent of translators (five translators) followed this pattern, with two of them omitting literature from the list.

The second pattern to emerge consisted of translators declaring that no domains were compatible with MT (Figure 4.3). Thirty-six percent of translators (four translators) followed this. Eighteen percent (two translators) followed both patterns. To note, CST scores are low because 36 percent (four translators) abstained from answering that section due to a lack of familiarity with the technology.

Noticeably, highly creative domains like advertising, journalism and literature scored low in the survey with both CAT and MT. Those that scored well with CAT and MT are those domains that are seen to be highly structured and repetitive.

Interestingly, legal, medical, and pharmaceutical domains did not score at all in CST. Two reasons stated by the respondents were the need to maintain confidentiality, and the high risk involved in the fields. A mistranslation or misrepresentation in these areas can cause legal or physical damage to an individual.

<table>
<thead>
<tr>
<th>Translation Domains</th>
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<tbody>
<tr>
<td>Advertising</td>
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<tr>
<td>Business</td>
</tr>
<tr>
<td>Diplomatic</td>
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<tr>
<td>Financial</td>
</tr>
<tr>
<td>Journalism</td>
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<td>Legal</td>
</tr>
<tr>
<td>Literature</td>
</tr>
<tr>
<td>Medical</td>
</tr>
<tr>
<td>Pharmaceutical</td>
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<tr>
<td>Scientific</td>
</tr>
<tr>
<td>Technical</td>
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Table 4.1: Translation Domains
**Figure 4.2: Domain Compatibility with CAT**

**Figure 4.3: Domain Compatibility with MT**
Interestingly, legal, medical, and pharmaceutical domains did not score at all in CST. Two reasons stated by the respondents were the need to maintain confidentiality, and the high risk involved in the fields. A mistranslation or misrepresentation in these areas can cause legal or physical damage to an individual.

To determine overall compatibility for each technology and each translation domain, I averaged the scores all of the domains per technology and the scores of all the technologies per domain (Table 4.2). These averages I will refer to as the technology or domain’s compatibility score. A score of 11 is considered to be a perfect compatibility. Overall, the domains of science, technology and financial had the highest compatibility scores at 5.6. The lowest domain compatibility score belongs to literature which scored only 1.3, with advertising score the second lowest at 3.0. CAT’s compatibility score of
9.0 is approximately seven and a half times greater CST’s score of 1.3, the lowest of the technology compatibility scores. In all, CAT is the most compatible technology for the given domains, and science, technology, and financial are the most compatible domains.
CHAPTER 5

Defining Boundaries in Translation

This chapter examines the boundary politics of the translation industry. It begins by examining the current boundary disputes between translators and the public, and how notions of tradition play into boundary maintenance. It then examines two cognitive models used by translators to judge the value of each of the new technologies.

Issues in the Translation Industry

The translation industry is not without its own internal problems. Issues of identity have continuously been contested from within and without the industry. Translators struggle to set professional boundaries, which are routinely tested and rearranged by the clients and the general public. The new technologies have become a screen on which translators can project these conflicts.

Jost Zetzsche (2013:1) has challenged the notion of a united translation industry:

Merriam-Webster defines an industry as "a group of businesses that provide a particular product or service." As an English-into-German translator, I do not provide the same service as translators of other language combinations, or even as other translators of my language combination with other fields of expertise or different levels of experience. . . I've recently been comparing us to a Chinese hand fan. Language, our common denominator, is like the pin at the bottom of the fan that holds together the bamboo segments (in our metaphor, this represents the different sectors). But from that one common point, the various parts diverge into many different directions, really without any overlap.

Zetzsche describes the field of translation as being a non-industry, where the services
provided by one translator are not comparable to the services provided by another
translator. While they share a common interest, they soon diverge on their own paths.
Without a core industry, the field translation is without a significant source of influence
on those forces wishing to transform the production of translation. In other ways, the field
of translation does behave as an industry, forming representational bodies and sets of
standards. This thesis will continue to refer to the field of translation as an industry, but
recognizes that the industry is loosely united.

The second obstacle facing translators is the blurred boundary lines of the
community. The translation industry has a very low barrier for entry which allows for
much needed new translators, but does little to control for quality. Unlike other
professional groups, the translation industry in the United States does not require that a
translator possess a degree or certificate in translation (although these are greatly
encouraged). The minimum requirement to become a translator is knowledge of a second
language and possession of a computer. Additionally, these new translators are needed
due to what has been described as a “content explosion.”

With the increase in globalization comes new markets that corporations wish to
engage. This has led to a rapid demand for translation. New texts are produced and old
ones need to be reutilized for the new markets. The internet has also become a new
source for translatable text. Unfortunately, text generation is far outpacing the availability
of translators.

While these new recruits are quite welcomed theoretically, in reality, they are
cause for concern because they are untested. Quality has become a sticking point for
some translators, because as quality goes down so does their power for negotiation, with
only the elite translators maintaining their negotiation power.

There is an element of professionalism where, or quality, that people are
concerned about. The quality of a translation. But then, we can't as an industry
agree or form a consensus on what qualifies. So, it's cyclical. This never-ending
issue of quality and people just fearing that were going to lose our work and our
quality. [LB, interview]

Despite these obstacles, translators have found community and unity in a couple
of ways. Firstly, the translation agencies act as mini-industries. They are able to unite and
represent several independent translators in their negotiations with end-clients. These
agencies are also able to control for quality to some extent. Different agencies have built
their reputations on the quality of the services they provide. While some are known for
catering to low-quality translators, others are highly specialized and take quality quite
seriously.

Translators also exist on the web. Translation portals like TranslatorsCafe and
ProZ, multilingual dictionary sites like WordReference, and social media sites like
LinkedIn provide virtual communities (in both senses of the term) where translators
across the country and around the globe can come together to contest and negotiate
boundaries. These sites allow translators to act collectively, especially against digital
practices that the group deems to be unfair. LinkedIn’s Translators Against
Crowdsourcing for Commercial Business group (discussed earlier) and the Professional
Translators Against Crowd Sourcing and Other Unethical Business Practices Petition (see
below) both provide representational voices in protesting current technological trends.
The most influential site for community creation is the American Translators Association (ATA) and its associated divisions. The ATA is a nation-wide organization that speaks collectively for the translation industry. Through research, publications, and events, the ATA actively works to create and maintain a general sense of translator identity. The ATA annual meetings are among the few times that translators can physically meet in large numbers to discuss and debate current issues in the industry. The ATA also serves as a training and validating organization by providing workshops on new tools and techniques and certifying skilled translators.

When not at the ATA annual meeting, translators have the option to attend regional associations. These are the branches that the ATA works through most of the year. These meetings are held throughout the year, and often feature guest speakers. The regional associations also hold many of the ATA workshops which allow translators to learn new skills or hone old ones. Most importantly, local workshops allow local translators to socialize and build relationships with one another. These relationships form a social network through which information can travel quickly.

The contestation over translator identity is not limited to those within the industry. Translators have to actively negotiate with outside forces that attempt to impose their own notions of identity on the industry. This contestation is made all the more difficult in that translation is an invisible industry. If translation is done properly, the reader should not realize that the text was originally written in a different language. This has kept the translator hidden from the general public, even as his or her work is well known. Literary
translators and translators of scientific articles often receive recognition for their work, but translators working outside of these fields often go unnamed.

The invisibility of translators has kept their skill and strategies hidden to outsiders as well. Few clients who hire translators know much about the process.

Here in the US, ‘cause we're mostly a monolingual country, and unless they're mature companies—have been in the global market for a long time—they're not gonna understand the cultural differences. They don't understand. So if it's someone, generally your trans-, if you get a client where you're translating for the very first time their documentation, they have no clue. But if you translate for Bloomberg let's say, they are a multinational company. They understand and they've been in the business multinationally, for a long time. So they—someone in their executive branch—knows the importance of getting, of communicating accurately for their local customers. [LB, interview]

This problem can be magnified when translators cannot adequately explain the benefits of hiring a translator.

Well, translators, I don't think to a large extent, really are able to communicate what it is that they bring to the table other than the language. And I think that's a problem that's much larger across the field than simply poor, you know the misunderstanding of MT. [KS, interview]

Translator invisibility and an inability to adequately communicate prevents clients from maturing to fully understand the translation process. Only companies who have participated intensively in translation for several years, as LB explains above, have an appreciation for translation work.

In the public sphere, translators remain invisible until mistakes are noticed. Readers may be familiar with humorous translations (often about Coca-Cola and China) that circulate mostly though friendly e-mails, or with cases like Zero Wing discussed earlier (Kelly and Zetzsche 2012). In fact, whole websites have been dedicated to posting "engrish" translations, that is translations from an Asian language (mostly Chinese) into
English that makes little sense to the reader (cf. Engrish.com with posts common on failblog.cheezburger.com). While these are most often cases of non-professional translation, they place translators as the punch line of popular humor. At the same time, good translation goes unrecognized, especially outside of literary translation, and leaves a net negative impression of the translator on the general populous.

Translators bear the burden of educating the client and of making their work visible. While not a part of the translator’s workflow, client education is an essential task for freelance translators. Many of my informants emphasized the need to educate new clients about the translation process and about the strategies they employ. For a freelance translator, an uneducated client is a nightmare to work with. Many translators utilize pamphlets published by the ATA. The most widely used is *Translation Getting it Right: A Guide to Buying Translation* (2011). The 27-page booklet guides potential clients thought the translation process and suggests ways to prepare text to aid the translation. Some translators choose to send this pamphlet to the client to review, while others prefer to read and discuss it with the client. One informant shared with me that translators must also consider how much they are willing to share with the client. Translators must reach a balance where they educate the client to the point where the two parties can have an effective relationship but not to the point where the client becomes confused with too much information. Certain information is kept from the client in order to facilitate education, but also in the name of trade secrets which may provide translators with some economic power.
To maintain group unity in the face of these border conflicts, translator identity has been codified by the ATA into a set of standards of practice. The “American Translators Association Code of Ethics and Professional Practice” (ATA 2010) reads:

We the members of the American Translators Association accept as our ethical and professional duty
(1) to convey meaning between people and cultures faithfully, accurately, and impartially;
(2) to hold in confidence any privileged and/or confidential information entrusted to us in the course of our work;
(3) to represent our qualifications, capabilities, and responsibilities honestly and to work always within them;
(4) to enhance those capabilities at every opportunity through continuing education in language, subject field, and professional practice;
(5) to act collegially by sharing knowledge and experience;
(6) to define in advance by mutual agreement, and to abide by, the terms of all business transactions among ourselves and with others;
(7) to ask for and offer due recognition of our work, and compensation commensurate with our abilities; and
(8) to endeavor in good faith to resolve among ourselves any dispute that arises from our professional interactions,

mindful that failure to abide by these principles may harm ourselves, our fellow members, the Association, or those we serve. [ATA 2010]

This code of ethics is accompanied by a commentary document (ATA n.d.) that further explains each concept, and is also a living document, that is a document that is continuously subject to edits as situations and philosophies change.

At this point, I argue that these types of statements should be of anthropological interest when examining group identity in an industrial culture. Standards of practice and codes of ethics replace the more established concept of “tradition” in anthropological analysis. According to Hobsbawm and Ranger (1983:1), an invented tradition is “a set of practices, normally governed by overtly or tacitly accepted rules and of a ritual or symbolic nature, which seeks to inculcate certain values and norms of behaviour by
repetition, which automatically implies continuity with the past.” They further elaborate on the symbolic uses of tradition as:

a) those establishing or symbolizing social cohesion or the membership of groups, real or artificial communities, b) those establishing or legitimizing institutions, status or relations of authority, and c) those whose main purpose was socialization, the inculcation of beliefs, value system and conventions of behavior. [Hobsbawm and Ranger 1983:9]

In professional communities, codified standards provide the same symbolic framework as traditions. For translators, the ATA Code of Ethics provides the rules that govern practice and the values the group should hold in agreement. Rather than being cut from whole cloth, these rules of ethical conduct are based on past practices of translators. The reader may notice that the ATA Code of Ethics ends with a statement about the repercussions of not abiding by the code, further emphasizing group unity and legitimizing the authority of the ATA. Furthermore, the ATA Code of Ethics is supplemented by other publications (e.g. Getting it Right, and the Commentary) that reinforce the authority of the code and add more tacitly understood standards of behavior.

**Cognitive Models and Technology Adoption**

Ideas about technology, like the rest of an individual’s world view, are within the purview of cognitive anthropology. By utilizing the cognitive gaze, I acknowledge that technology adoption or rejection is an individual act that is mediated by a greater cultural influence. As has been shown, the attitudes and practices of translators have varied greatly, so it would be a mistake not to recognize individual action within the greater drama.
For this project, I choose to employ the cognitive principle of *schema theory*. Bernard (2006:480) describes *schemas* as cognitive representations that “enable culturally skilled people to fill in the details of a story.” No two experiences are identical in every detail and with near infinite variability, the human brain is incapable of modeling each outcome. Schemas (also known as *scripts, frames, scenes, or scenarios* [D’Andrade 1995a]) provide an individual with a set of rules and expectations that bound an experience and give meaning to it. By identifying those elements which recur in similar events, these bounded experiences work to regulate future behavior in novel interactions and to predict outcomes.

D’Andrade (1995a) describes schemas as containing *slots*, or placeholders for variable context. For example, D’Andrade’s schema for the verb *to write* “invokes a writer, an implement, a surface on which traces are left, and a product” (p. 123). The *implement* slot may be filled with a pen or pencil for any given writing event, but does not change the overall behavior or expectation. When proper context is not supplied for a slot, the individual will fill it in with a *default value*, or his or her normal expectation (D’Andrade 1995a). A schema with all slots set to their default values forms a *prototype*. These features of a schema allow an individual to make assumptions about events even when some information is hidden.

While some schemas are idiosyncratic, many schemas are shared socially. When they are shared, those schemas are cultural (Bernard 2006). Those events, individuals, or objects that do not follow the rules of a schema open themselves up for scrutiny. When the schema that is broken is cultural, then the item may become a political object that
challenges established boundaries (Bernard 2006; D’Andrade 1995a). When the political object is technological or scientific, the item can no longer be black-boxed and its component parts become destabilized (Latour 1987; Law 1987).

Schemas can be organized into higher-level mental objects called “models”. A model is “a set of cognitive elements used to understand and reason about something” (D’Andrade 1995b:399). These elements are interrelated and fit together to represent something (D’Andrade 1995a). While an individual schema can be a model, models can be too large to be held in short-term memory and depend on multiple schemas. Models for complex tasks or objects fit this type of classification when only part of the whole is ever under scrutiny at a given time.

Bernard’s (2006) and D’Andrade’s (1995a) reviews of the literature (cf. Kempton 1987; Mathews 1992; Quinn 1987) demonstrate that a culture can hold competing models and schemas that result in different behaviors. I propose that the various opinions in the translation industry regarding new technologies can be explained in part by differing models of translation work.

**The Good Translator Model**

The first model I would like to present is what I shall term the “Good Translator Model.” This model falls into D’Andrade’s (1995b) category of a “moral model.” By “moral,” D’Andrade is referring “to the primary purpose of this model, which is to identify what is good and what is bad and to allocate reward and punishment” (p. 399). The Good Translator Model provides a frame in which to judge the morality of a translator. This model is best represented by the ATA Code of Ethics and Professional
Practice (2010), the full reading of which can be found in the previous section. This list of principles, with a few amendments, will form the basis for the elements of this model.

The elements of the Good Translator Model can be grouped into two schemas that translators generally employ. The first is the Professional Behavior Schema (schema 1) which regulates how a translator is to behave and produce work. A prototype for schema 1 may be a translator who produces high quality work translating medical documents from French into English while actively participating in the ATA. The second schema I will call the Translator–Client Interaction Schema (schema 2). This schema frames what is acceptable behavior between a translator and his or her client with respect to contract negotiation and job fulfillment.

The Professional Behavior Schema

Schema 1 can be broken down into six elements. Linguistic integrity (element 1.1) corresponds to the ATA Code of Ethics’ (2010:1) first principle “to convey meaning . . . faithfully, accurately, and impartially.” “Commentary” (ATA n.d.) further clarifies this to mean that translations should provide intent and emotional impact equivalent to that of the source text, and that the translator should remain neutral and not try to “‘clean up’ objectionable language” (p. 1). A literal translation rather than meaning-for-meaning translation would be in opposition to linguistic integrity. Confidentiality (element 1.2) prohibits moral translators from sharing the content of a source text or the fact that they are currently translating for a specific client. Qualification (element 1.3) refers to the honest presentation of self in advertising and working with areas of expertise. Qualification can be further broken down into two components: Language and
Specialization (sub-elements 1.3.1 and 1.3.2 respectively). To be a good translator, one must work within one’s trained language pair and area of specialization. Education (element 1.4) should continue throughout one’s career and applies to language, specialization, business, and cultural issues. Finally, Collegiality (element 1.5) and Self-Regulation (element 1.6) indicate that translators should work with one another and openly share knowledge concerning business practices and translation techniques within the industry, but when issues do arise they should be resolved within the translation industry.

The Translator–Client Schema

Schema 2 covers the rest of the principles in the Code of Ethics. Mutual Agreement (element 2.1) refers to contractual obligations that are seen as fair by all parties. This includes pay, deadlines, and expectations, and should be done in advance of any project. Commensurate Reward (element 2.2) includes due recognition for translation work when appropriate (e.g., the translator’s name printed on a translated book) and to receive pay that is reflective of the translator’s work. Here I would like to add one more element that is not included in the Code of Ethics but has been mentioned by my informants. That element is Transparency (element 2.3). By Transparency, I mean that a translator should honestly inform a client or the public about which tools and techniques were used to produce the translation upon request.

To be judged a “good translator,” an individual must be in agreement with all the elements. D’Andrade (1995a) notes that terms often exist for ways in which schemas fail. The Good Translator model is no exception. Failures to satisfy schema 1 may be termed
“amateur.” *Getting it Right* (ATA 2011) distinguishes professional translators from teachers, students, and bilinguals and indicates that the latter group may do inferior work. Those who fail schema 2 may be considered “suckers” who are taken advantage of by clients, or “bottom feeders” who consciously accept low paying work.

Failure of the Good Translator Model is seen as harmful to the translation industry as a whole, but the two schemas differ in the harm they may produce. Failure of schema 1 is seen to damage the quality and reputation of translation. Bad text or inappropriate behavior may negatively influence a client’s future interactions with translators. A failure of schema 2 undermines the business practices of translators. By taking low-paying jobs and constricting job parameters, it weakens future translators’ negotiation powers.

In my various field sites, I have witnessed translators applying this model to the new technologies. Reasons for opposing certain technologies are framed in discussions of

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<td>1) Professional Behavior Schema</td>
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<td>2.2) Commensurate Reward</td>
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*Table 5.1: Outline of Good Translator Model*
how they fail, or might fail, one or more elements. In the following sections I will discuss how each technology is seen to fail the Good Translator Model (Table 5.1).

**CAT**

In Fulford’s 2001 study of UK translators, she found that increased client power was one of the many concerns translators held regarding the adoption of translation tools. One issue raised by a number of translators in the present study concerned the demands that clients were making with regard to the use of translation tools: some translators felt that clients were pressuring translators into using translation tools, especially translation memory software. Similarly, other translators seemed to feel that it was their clients who would be likely to derive most benefits from translation tools by requiring lower charges for previously translated text segments, demanding shorter deadlines for translation production, and so on. [Fulford 2001:228]

If these concerns were to manifest within the translation industry, it could call into question elements 2.1 and 2.2 by shifting the balance of power towards the client. This would make it difficult for a translator using computer-assisted translation (CAT) tools to negotiate a fair contract or receive appropriate pay. A continued power imbalance could result in a general decrease in economic power for freelance translators.

A decade later, client power appears to be less of a concern. Those translators who chose to participate in this study all reported that discounts were part of a normal business practice. Some chose to elaborate on this subject during their interviews:

There's lots and lots of work out there and the demands of the marketplace have different requirements of quality. The technology, I've used the technologies since, you know, version 3.1. You know, I've used Trados since the 90s, and I think it has to do with how you use the technology, how you leverage the technology and the relationships you have with your suppliers, or your agencies. Because many agencies don't even ask whether you have technology. There's this whole patchwork of the small agency that gets a job in. They don't care, their client doesn't care. I'll take that job. You know, someone will take that job and run
it through the translation memory and use the tool. There's no benefit at first. If that ever turns into repeat business through that agency to that client, you already started collecting that data and you can say, "Oh yeah, I don't remember." But, four years ago you did a job for that company and look it up. I could leverage that technology without the agency being aware of it. But then there's the, I guess there's some of the holding the line on price where if somebody gives me a text and doesn't ask me, I could use technology. Someone gives me a text and says "You translated this for us last year and it's, half of it's identical." I say "OK, do you want to take out the parts that are identical?" "No, no. We want you to process it." "Well, you know, then I'll charge you half price for the pieces that are identical or, you know, my personal pricing model is anything that's above 90 percent match is half price and anything below that, it's full price, unless you want me to just only look at what's changed and not check the rest to see if it actually fits." [JP, interview]

Most clients aren't familiar with CAT tools. So, again, it depends. Only those who have worked with them, they'll know enough to say that it affects their business, in terms of how much a translator can charge them, or if they're using a translated, a translation memory, they want a discount. [LB, interview]

And of course they take a discount for that, but that's OK. You know, usually if the work is well presented and well, you know, they always did a really good job sending me good files. So, I didn't work with like PDF files or image or something and have to do everything myself and . . . So it was still very well worth my while, even with all the Trados discounts. [VR, interview]

These examples illustrate that translators have learned to leverage the discount to their benefit. By providing a discount, translators participate in a long term economic strategy. The discount and the ability to utilize legacy text, or formally translated text, encourages repeat business with a particular client. Some translators even view the discount model as an ethical obligation. JP explains, “So, if you're trying to measure time against time, the rate you get paid for validating matches, the rate you get paid for editing highly similar text, should reflect in the end analysis about the same hourly rate as you're getting for translation overall.”
The translators also note that the discount model is not universally employed among clients. In some ways, these discounts can be interpreted as secret sales since the client or agency must often ask for one. Clients may act as JP describes and are not concerned about discounts or as LB describes and are unaware of their options. When employing the discount model, individuals tend to vary on what discount is acceptable. Veteran translators do not seem to provide discounts for matches below 80 percent and the amount of the discount varies from person to person.

Those who are most at risk of being taken advantage of by the client are new translators. But there are agencies that come and say, "Our pricing model is we pay . . ."—they have five or six categories for 100 percent matches and 80 percent matches, 70 percent matches. Like don't waste my time. But I'm one of the successful translators. The less successful translator will be intimidated by the agency. They might take that model. They don't make any decent money. [JP, interview]

Because these translators are unfamiliar with market trends, it is easier for clients and agencies to manipulate them. The resulting low pay may explain the more vocal opposition voices against CAT tools. These voices claim that translators are not earning decent wages. It may also force out new translators who are not business savvy.

The second issue of shortened deadlines does not seem to have materialized for the freelance translator. Most of the pressure seems to have been absorbed by the agencies.

The business is deadline driven and they tend to be fairly short deadlines anyway. So, 5,000 words for two days from now is nothing unusual. 200,000 words, they'll give you a couple of weeks, you know, or four weeks. It depends on the kind of project that it is and so forth. But what gets unreasonable is when some companies will accept a job that has 50,000 words and they need it in two days, so instead of negotiating a more reasonable deadline and having one or two translators do it, they'll split it up among like ten translators. And then you have problems of consistency and uniformity and so forth. Style. And so you got ten
translators delivering 5,000 words each and then some poor editor or two are going to have to plow through that stuff and try and harmonize it and make it into a more coherent translation. I find that irresponsible. [JP, interview]

In the case above, it is the agency and not the translator who must negotiate deadlines. This new issue may not even be technologically driven and instead may be the result of competition between agencies.

While client power may have been a real concern for translators at the turn of the millennium, these issues seem to have died down. The stabilization of power may, in part, be the reason for CAT’s high uptake by translators. With few economic and professional penalties for using the software, more translators are interested in exploring that option.

*MT*

Of all the criticisms aimed at machine translation (MT) by the translation industry, issues of creativity dominate the arguments, both in academia and in the general population. In translation, the notion of creativity can be described as the translator’s ability to actively choose words, phrases, or grammatical structures that he or she deems most appropriate for the text. Following this definition, creativity may be classed under element 1.1. Part of linguistic integrity requires the translator to distinguish between multiple senses of a given word and to comprehend the context it is embedded in. This cognitive act is deemed to be creative work by the translation industry.

Translators have feared a loss of creativity with the increased use of CAT tools, but this is mostly limited to the use of translation memories (TM). I have chosen to discuss creativity under the heading of MT rather than CAT because arguments against
TM tools (Trados) with MT systems (BabelFish).

Several commenters responded to this post by pointing out the differences between the two technologies. The thread then turns towards a debate about the relationship between the two.

This thesis will take the position that both TM and MT are types of software that utilize computer programs to predict the translation of a text, and are thus technologically related. TM differs from MT in that its predictions must be validated in real-time and segment-by-segment by the translator, while MT predicts entire texts. Because of this difference, issues of creativity are amplified by MT systems.

Those who are opposed to MT draw a clear distinction between the human and the machine. One commenter on a ProZ forum debating whether or not the site should

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1I have chosen not to publish the user names associated with quotes taken from message boards. Instead, I will cite the message board in the text and provide the date of the post and page number on the message board where the quote is found. This message board discusses the popularity of machine translation. It is titled “Why the popularity of machine translation in professional translation?” and can be found at: http://www.translatorscafe.com/cafe/MegaBBS/thread-view.asp?threadid=16795&start=1
allow post-editing jobs to be offered stated, “It may be a service but it's only remotely related to real language used by real people. I can only speak for my pair - if people began communicating like MT suggest, we will soon be back at pre Homo sapiens times” (Message board comment May 19, 2013:2). This commenter makes it clear that MT translations are an inferior form of language, and that if the general population used it, there would be a devolution in communication. The same commenter says in a second post, “Seriously!!! MT is not human language - it is machine language. If you are so keen on melting down one of the last fibers that accentuate our different cultures, only to produce a pool of goo, then I feel sad for you - by you I mean any MT advocate and promoter” (Message board comment June 6, 2013:6) The insinuation is that those who advocate for MT are in league with the machines and are willfully destroying cultures in languages.

This fear of technological destruction is not limited to message boards, but has appeared in academic journals as well. Niven (1995) suggests:

Translators with English as their mother tongue have even expressed the fear that constant exposure as post-editors to such Gerlish [a combination of German and English grammar] might in time so weaken their feeling for proper English prose that they will find themselves accepting much machine-translation output without qualms: a truly horrific thought. [p. 9]

In this version of the argument against MT, constant exposure to MT desensitizes the human mind to the differences between languages and encourages the machine’s logic.

2This message board discusses the ethics of offering post-editing jobs on ProZ.com. The message board is titled “Machine Translations: Should Proz.com advertise MT jobs?” and can be found at: http://www.proz.com/forum/machine_translation_mt/249926-machine_translations%3A_should_prozcom_advertise_mt_jobs.html
Under this argument, post-editing creates a collapse of the individual structures of each language and creates a poorly functioning hybrid structure. This argument may be termed the “strong opposition” since it theorizes that any adoption of MT systems will lead to the destruction of each language’s linguistic integrity.

The “weak opposition” holds that the current form of MT systems is likely to produce translations that are difficult to understand. Post-editors are limited to fixing simple mistakes made by the machine and may be unable to produce a natural sounding text. The weak opposition suggests that the technology may become useful in the future and allows for future reassessments, which the strong opposition does not.

Schairer (1996) suggests that the premature adoption of MT may be a result of greater cultural moments. She states, “Impressive advances in computer technology and popularization of terms such as virtual reality, artificial intelligence, voice recognition, and information superhighway set the stage for acceptance of machine translation as accomplished fact” (p. 97). She supports this view by citing the plethora of MT programs on the market at that time. This may accurately describe the position of the general public, which is being exposed to more and more MT programs on-line and on smart phones. Such public acceptance of new technology may be placing translators on the defensive as they try to justify their position to an uneducated audience.

The opposition has forced a stand-off between human and machine translation. Arguments made against MT tend to amplify the creative and aesthetic elements of translation. Niven (1995:8) writes, “One complaint often made by post-editors of machine-translation output, most of whom are professional translators, is that machines
provide over-literal translations, which are wooden and stylistically unacceptable.” This concern may be exaggerated, as Koby (2001:10) explains: “it is interesting to note, however, that nonlinguist users of post-edited machine translations sometimes cannot tell the difference between machine translations and human translations.”

The second criticism of MT is its questionable ability to maintain confidentiality. This has recently become a public concern; the 2013 ATA Annual Conference devoted a session to the topic and a lively debate has developed on ProZ. This issue can be further broken down into two parts: ownership of translated text, and security of on-line storage.

Text ownership exists in a legal gray area of the translation industry. On one side, translation is a creative act and the translator has a legal right to his or her creation. On the other side, the company owns the rights to the original text and buys the translation from the translator. Before the proliferation of internet technology, ownership was less problematic as principles of confidentiality kept text in a closed loop between the client and translator. TM poses less of a threat since legacy text can benefit both parties and is stored locally on either the translator or the client’s machine. New developments of web-based MT have brought this issue to the forefront.

Most of the arguments center on the Terms of Service for Google Translate, and to a lesser extent Bing (Microsoft) Translator. The statement in question reads:

When you upload or otherwise submit content to our Services, you give Google (and those we work with) a worldwide license to use, host, store, reproduce,

3 This message board discusses the issue of confidentiality and machine translation. The message board is titled “MT and Confidentiality Agreements” and can be found at: http://www.proz.com/forum/machine_translation_mt/207130-mt_and_confidentiality_agreements.html
modify, create derivative works (such as those resulting from translations, adaptations or other changes we make so that your content works better with our Services), communicate, publish, publicly perform, publicly display and distribute such content. The rights you grant in this license are for the limited purpose of operating, promoting, and improving our Services, and to develop new ones. This license continues even if you stop using our Services (for example, for a business listing you have added to Google Maps). [Google 2013]

While the statement before states, “Some of our Services allow you to submit content. You retain ownership of any intellectual property rights that you hold in that content. In short, what belongs to you stays yours” (Google 2013), many translators are unsure how text uploaded to the site will be used and displayed. Microsoft’s Terms of Service state the same.

Google Translate’s prominence in the MT market has made it a stand-in for all MT among the public. Because of this, some agency and client policies have been based on concerns about Google Translate. The inaugural post of the ProZ forum on MT confidentiality reads, “My best client (agency) has been updating its Quality Assurance systems and has asked me to sign a new agreement, which appears to be a standard format issued by a national association of translation companies. This includes an absolute prohibition on the use of MT, which it [has] claimed would be a breach of confidentiality” (Message board comment September 7, 2011:1). While some commenters found this statement problematic, others found the simplification justifiable. One post reads, “To me, it is perfectly OK to use ‘MT’ as a whole and not ‘Google Translate’ in the clause, quite simply because very many translators can't tell the difference in privacy issues between online and desktop solutions – or between Google Translate and other online solutions, for that matter” (Message board comment
September 7, 2011:1). Other commenters have taken a stronger stance towards web-based MT systems. One post states, “What Google is or isn't doing with the data is immaterial. We shouldn't be providing our clients' information to third parties, period, regardless of what those third parties do with it” (Message board comment September 8, 2011:1). These translators take the hard line approach and advocate for keeping texts between translators and clients.

All of these translators are attempting to control the unknown element of web-based MT. Google’s vague Terms of Service and ability to change policy at any time has unnerved translators because they cannot predict the motives of the corporation. As one commenter posted in reply to another, “[I] think it's dangerous to base business decisions like this on whether or not *you* can think of Google's motivation. Your failure of imagination does not equal confidentiality...” (Message board comment September 9, 2011:1).

Google is not the only wild card in play when it comes to web-based MT. More and more, translators are worrying about the security of online storage. Over the past decade, acts of data theft and hacktivism (activism via computer hacking) have seen increasing coverage in the mainstream media. Threats of cyberterrorism from China and hacker groups as well as domestic spying programs have become major political issues and have increased public consciousness about digital security.

Many translators, both within my group of informants and at the ATA Annual Conference, have expressed concerns about third-party storage. Documents uploaded to web-based MT systems are stored, at least temporarily, on the company’s servers. If a
hacker were to access this information, the confidentiality agreement between the translator and the client may be breached. While this scenario is unlikely to occur since these servers are at a much lower risk of being targeted than those of retail or online storefronts, the continued presence of hackers in popular media negatively affect view towards digital security.

MT systems are also seen as threat to the economic integrity of the industry by some translators. This would violate schema 2, particularly elements 2.1 and 2.2 as power shifts again in favor of the clients. The ProZ forum concerned with MT job offers (discussed earlier) began as a protest against post-editing jobs, with the original post reading:

Hello Colleagues,

I recently received a personal job offer through Proz.com to post edit a machine translation. I refused.
I later heard from some of my colleagues that they too received the offer. I guess no one took the jobe [sic] because later still, I received a 'ProZ.com jobs' offer with the same offer, only this time sent to anyone who would be so kind as to pick it up.

So, what's my beef?
I think machine translations go against the fibers of our profession. If I will have to resort to post editing MTs - for rates that I would be ashamed to offer any professional - I believe it will hasten my demise as a translator and it will kill languages!
The question is not if I fear MT will "take over", but rather why Proz.com - a site I pay membership to and a community I am proud to be a member of - would post such a job. Whether or not MT will take over, I think that we - the professional community - should definitely NOT give it a helping hand.
Honestly speaking, I'm glad other translators in my language pair didn't pick up the job because it encourages me that translators (at least most of us), are intelligent beings who realize the true meaning of machine translations.
So, should proz advertise MT jobs or not, that is the question... [Message board comment May 28, 2013:1]
The commenter obviously feels that MT systems are destructive to the translation industry. Her primary citation to this is the low rates involved in post-editing work, and she believes that ProZ is betraying its member base by posting these jobs. The commenter also praises those who have refused post-editing jobs because they have “realized the true meaning” of MT, namely that MT will cause the destruction of the translation industry and kill languages.

Some translators choose to frame their arguments by aligning themselves with another industry. One popular alignment is to associate translation with manufacturing industries that have been affected by automation. A series of exchanges on the ProZ forum reads:

Commenter 1: Once upon a time, when I [was] a lad, there were some chaps called weavers, who got very cross when someone invented a mechanical weaving machine. They said it wasn't natural, and couldn't do the same as what a real craftsman weaver could do. They hopped up and down a bit, broke a few machines and then died of starvation. There aren't many weavers now. Except the ones working the machines, and there aren't many of them, neither. The End [Message board comment May 29, 2013:3]

Commenter 2: I'm not a Luddite, I'm just not convinced that's going to happen (in my working lifetime). Even if it does, there are people who pay good money for authentic quality hand-woven goods, instead of the mass-produced alternative. [Message board comment May 29, 2013:3]

Commenter 3: ...the ones working the machines are now called operators and technicians, and they're supported by engineers, all of whom are earning many, many times what those weavers were earning. In fact, I'm willing to bet that the total earnings of the few left in the field is probably greater now than the sum total of what all those weavers were earning. . . Those who embraced the technology, upgraded their own skills and found opportunities ended up very wealthy. Those who looked on with despair (the vast majority) and didn't do anything about it except mope are the ones who died of starvation. [Message board comment May 31, 2013:4]
This alignment focuses the conversation of MT systems into analogs of mechanical automation and reinforces the man–machine dichotomy. This view also tends to encourage future speculation by comparing the translation industry to various manufacturing industries.

By focusing on this alignment and incorporating the identities and histories of manufacturing laborers, these translators begin to incorporate the strategies and politics of industrial work. Burawoy (1997:239) states, “With the destruction of skills, wages are increasingly determined by the solidarity that workers can achieve in opposing management.” In the case of the translation industry, the destruction of skills is a perceived threat rather than an extant phenomenon, and the management can be viewed as the client or the agency. Several translators on the ProZ forum call for group action to oppose MT systems. Some propose boycotts of post-editing offers and demonize those who don’t show group solidarity (see the original forum post above). Others suggest that translators charge a higher rate for post-editing. While there are translators who suggest that higher rates would reflect the work being done, those who are following the industrial alignment propose it as a type economic penalty for using MT. One commenter posted:

Unfortunately, I cannot stop translators who wish to edit MT text from doing so, but I can ask them to consider the rate they are working for. . . not half the rate (as agencies wish we would) but double or triple the rate so that: a) they will get the right money for their time, and b) maybe it will help push to the edges this ridiculous need to replace us with machines. [Message board comment May 29, 2013:2]

While an outsider may view these strategies as economically irrational since they restrict an individual’s economic opportunity, Burawoy suggests that industrial behaviors are
produced by rational individuals. Denying certain short-term opportunities ensures steady work in the future.

Others who embrace the industrial alignment see the possibility of increased economic opportunity. One translator posts:

This is really no different than the guitar manufacturing industry. There are the purists who believe that one should never touch a guitar that has [not] been hand-made without any mechanical tools. . . Sometimes high-quality double-checked full-human translation is inappropriate for specific needs and the amount of budget which can be allocated to fill the need. [Message board comment May 29, 2013:3]

While these translators fully acknowledge that automation of the translation industry will greatly reduce the number of job opportunities, they believe that those who survive the economic shift are in a position to earn higher wages. These translators perceive a continued market for high-quality, human-produced objects, which can be sold by translators for higher prices. These individuals may view themselves as being well established. Since they do not feel threatened by automation, they may be less inclined to participate in group actions.

While some choose to align themselves with industrial labor, others have chosen to align with skilled professionals. One commenter on ProZ speculates, “I suppose the field will be divided into Real Translators, 2nd tier translation editors and MT editing assistants. Similar to Nursing Profession: 4 year RNBS, 2 yr. RNAA and Certificate NA. Can you guess which one ends up doing the menial work and gets paid the least?” (Message board comment May 29, 2013:2). She later posts, “Would a lawyer or physician after spending so much time and money getting their education and credentials be willing to work as a nursing assistant or legal secretary? Unless they got disbarred or
suspended from medical practice, I seriously doubt it!” (Message board comment June 1, 2013:4). By aligning with other skilled professionals, these translators are making a statement that their work is too complex and requires too much human knowledge to be automated. This alignment also allows them to justify their authority. Notable in the comments above, the commenter makes a distinction between “Real Translators” and post-editors and later parallels the latter with disgraced professionals, thus enforcing the superiority of human translation.

CST

In the case of crowdsourced translation (CST), concerns of professionalism and job access appear to be the most prevalent. While CAT and MT threatened to reduce the translator’s economic power, CST removes the translator completely in favor of the crowd. This section will focus primarily on a petition by Translators for Ethical Business Practices (2009) called “Professional Translators Against Crowdsourcing and Other Unethical Business Practices,” which was posted to TranslatorsCafe and has received 138 signatures at the time of this writing. The petition has been sent to Facebook and Twitter, two social networking sites known to use CST. The petition reads:

For the past few months, professional translators and interpreters all over the world have been expressing their concerns over the ethical problems posed by

4 This message board discusses the ethics of crowdsourcing translation on social networking sites. The message board is titled “Professional Translators and Interpreters Against Crowd Sourcing” and can be found at: http://www.translatorscafe.com/cafe/MegaBBS/thread-view.asp?threadid=15325&messageid=191551#191551
crowdsourcing and how this practice negatively impacts an already suffering industry, but our concerns have not been heard and more unethical practices have arisen as a result of crowdsourcing. The reasons why we are against crowdsourcing are the following:

1. Professional translation requires years of training, extensive general culture, and excellent command of both the target and source languages. The job of translators and interpreters is not simply to translate words, but rather to convey meaning and concepts as well as to provide cultural localization. This is why being bilingual or knowing another language is not enough to be a translator. We train, we study, and then we train some more... and for all that hard work we, as any other professional, feel we deserve fair rates and recognition. Crowdsourcing bases itself on non-professional translation provided either by people who are not qualified to translate in the first place (which shows utmost disregard for language and language professionals) or by people who, as a result of other unethical practices, are desperate to find ways of promoting their services and hope this form of exploitation will later translate into paid work.

2. We are users of the sites that resort to crowdsourcing and we feel insulted that the sites we are supporting show such disrespect for our line of work. We don’t see sites like Twitter and Facebook asking doctors who use their sites to provide free online medical services. We don’t see Twitter and Facebook asking lawyers who use their site to provide free online legal services. So we wonder, why do we see Twitter and Facebook asking professional translators who use their sites to provide free online services?

3. For years, universities and professional associations have been providing certification to translators as a way of raising industry standards and homogenizing linguist quality. We ask, what ethical and professional criteria (if any) do sites like Twitter and Facebook use to provide awards and recognitions to their best translators? Where exactly did these sites get the authority to do so?

Translation and interpretation are not hobbies or pastimes, they are professions. As users and supporters of the sites that are resorting to crowdsourcing we ask that these practices stop, that they leave translation to the pros, that they pay translators fair rates for their work, and that they show respect not only for language and culture, but also for their users. This petition was created by the group Translators for Ethical Business Practices, but we feel we speak on behalf of all translators and interpreters and invite all our colleagues (including non-members) to sign this petition and make their voices heard. [TEBP 2009]

According to this petition, CST violates all but one element of schema 1. Confidentiality is not mentioned most likely because the text for CST translation is publically available.
The petition’s first point focuses on the amount of training a translator receives in order to maintain linguistic integrity in his or her translations. The authors linked elements 1.4 and 1.1 together so that a deficit in education leads to a loss of linguistic integrity. This strategy allows them to refute the authority of bilinguals who may have the linguistic knowledge base, but are unable to produce professional texts. This reinforces the differentiation between the professional and non-professional. The authors go on to declare that professionals who participate in CST have already violated the ethics of the translation industry, and are only involved because they need work. This lowers the status of non-professional even more by associating them with disgraced translators.

The second point of the petition demonstrates an attack on schema 2. The injustice and disrespect that the authors feel from CST may be a result of a violation of element 2.2. Asking translators to provide free services destroys the relationship between them and the client. Here again, the translators align themselves with other skilled professionals in order to bolster their authority. The point is that translators are professionals and should be treated with appropriate respect.

In the third point, the authors reinforce the self-regulation and professionalism of the industry. They question the websites’ power to qualify and award translations. This, along with portions of the first point, indicate that CST violates both sub-elements 1.3.1 and 1.3.2. In no way, according to the authors, are non-professionals qualified to conduct translation. This also indicates that qualification can only be obtained through the translation industry (i.e., educational institutions and professional associations).
The final paragraph allows the authors to show collegiality within the translation industry. By inviting new signatories from outside the authoring group, the authors hope to show community solidarity against CST. Because non-professional translators are excluded by the authors, the crowd would be unable to participate in the translation industry, and thus be unable to fulfill elements 1.5 and 1.6. The petition may have failed on this part as it was only able to enroll 138 individuals, a small fraction of the translation industry.

The Translators for Ethical Business Practices are not alone in their opposition of CST. As noted earlier, several groups have formed on social networking sites to oppose CST (O’Hagan 2009). Others have expressed their concerns in blogs (e.g. Bennett 2009; Graciet 2009). These translators all show concern for the quality of text, and some refuse to participate because they fear guilt by association. As has been demonstrated several times above, working with these technologies may call into question a translator’s ethical standing.

*The Translation Decision Model*

While the Good Translator Model is used to judge the integrity of a translator or translation technology as a whole unit, several translators demonstrated the use of a second model. This model I term the “Translation Decision Model.” This model belongs to a larger class of decision models familiar to anthropology (see Quinn 1975). Keesing (1967:2) first described decision models:

We use “decision model” in a fairly broad sense to denote an ethnographic description that is actor-oriented and based on the categories of the culture under study, i.e., one that is "emic." Its [the decision model’s] minimal properties are
that it (1) defines the situation or context in a culturally meaningful way; (2) defines the range of culturally acceptable alternative courses of action in that situation; and provides either (3) a set of rules for making appropriate decisions under culturally possible combinations of circumstances, i.e., a model with determinate outcomes, or (4) a set of strategies for deciding among alternatives, i.e., a value-maximization model.

In the case of the translation industry, the issue is to determine whether or not a given translator can use one of these technologies to translate a given text. The alternative courses are determined by three considerations: the characteristics of the technology, the characteristics of the text, and the experience level of the translator with the technology. Each of the characteristics is reduced to key features, which are finite. The Translation Decision Model is best classed as a value-maximization model, rather than a model with determinate outcomes since the goal is to choose the best technology to use.

This decision model works in two stages. In stage one, the translator compares the key features of the technology with those of the text. Those combinations with an acceptable level of compatibility then move to stage two, while those texts that fail to find a compatible match are translated via human translation. In stage two, the translator compares his or her experience level with technology to the needed level of the text to determine whether or not to implement the technology. When multiple technologies are deemed compatible, the translator may choose the one he or she is most familiar with or the one that is most compatible with the text.

Stage One

Because of its versatility, the threshold for the key features of CAT tools is set relatively low compared to the other technologies. CAT tools generally work best with
long texts or similar text from one client over time. Tools like text alignment and
terminology management can take considerable time to set up and implement, therefore,
longer texts benefit from the preparation more than short texts for whom the additional
preparation time would not be efficient. These tools also become useful when a translator
wants to leverage legacy texts. CAT tools work well with controlled language and
become less useful with ambiguous, creative text.

MT systems share several key features with CAT tools, except that they have a
higher threshold for acceptance. MT systems work best with highly controlled text. Since
the machine cannot determine context for a word, ambiguous and polysemous words are
at a higher risk for translation error. This type of translation is also best for texts that are
needed for information rather than publication.

CST works on a completely different set of key features. Rather than being
optimized for long text, CST works best with short text or text that can easily be broken
up into smaller units. It also works best with more general and less technical language.
Because each segment is being translated by a separate individual, texts that require
controlled language are not ideal. Controlled language requires a high amount of
coordination among translators to ensure that the same terms are consistently translated
the same way. In a crowdsourced project, this type of coordination is extremely difficult
to produce. Also because of the nature of the crowd, texts that require confidentiality on
the part of the translator are not compatible.

Texts do not usually fit nicely into one of these feature-defined categories.
Instead, they tend to exist on a spectrum of possibilities. One way for translators to fit
texts with technologies is to group texts into types. These types (e.g., financial report, legal brief, user manual) can then be grouped into domains. Texts within a domain tend to have similar features and are thus able to pair with similar technologies. By ordering text in this manner, the translator can do simpler calculations with more limited features. The survey results discussed in the previous chapter illustrate the compatibility of each domain and translation technology. For example, the technical domain and CAT technology are highly compatible while the literature domain and MT technology are highly incompatible. During one interview JP explains his reasoning for using CAT tools:

Because, one of the things I imagine you've heard is: translation tools are most useful with highly repetitive text. So, the argument has always been, "Well, if you are a technical translator, and technical language is highly controlled, and you have the same kinds of text repeating over and over, reusability of text is important." My personal attitude, and I'm in the other side of the field, I'm in legal, there's no repetition in legal, really, fundamentally. There's a little bit, but there's none really in commercial documents. The minutes of this meeting are not the same as the minutes of last meaning, except for the framework. You know, and you can do that. I still use a tool for every document because of terminology management, for consistency, and also because of the concordance. [JP, interview]

A second consideration for translators is the language pair. This does not affect CAT as much as it does MT and CST. In the case of MT, certain pairs have a much larger database than others and have been more highly developed. Among the survey respondents who worked with European languages, there were mixed feelings about how useful MT was in their pairs, but both Japanese translators found it very unhelpful. With CST, small languages are a huge opportunity. In a study conducted on the quality of crowdsourcing, Zaidan and Callison-Burch (2011:1228) concluded that, “crowdsourcing
provides access to languages that currently fall outside the scope of statistical machine translation research.”

Stage Two

A translator’s experience level with a technology can mean the difference between accepting and adopting. Failure in stage two could result in the translator acknowledging the benefits of the technology, but not implementing it in his or her workflow. Among the survey respondents, several translators had positive views of CAT tools, but stated that they just bought or were considering buying their first CAT software at the conference. Each of these technologies has its own impediments towards usage that a translator must overcome in order to achieve an appropriate level of experience.

The adoption phase for CAT tools can be a difficult one. Of those who reported not using CAT in a poll by ProZ, 68 percent had tried to use technology in the past (Tabor 2013). Commonly cited reasons for not using CAT were cost, difficulty in learning, and lack of time for learning. Not all the tools are integrated into a TEnT which forces the translator to learn new software. This can be especially difficult for individuals who are lacking computer skills. For WG, an established literary translator, there seems to be little incentive to learn CAT. She states, “Technologically, I have ten thumbs. This year, I had to use Blackboard [an online education software package] in a class. Oh my goodness! So, I'm not naturally drawn to trying to use this stuff. And a lot of things we do, I'm not so sure translation software would help us with.” She belongs to a generation of translators who were never trained on computer software. JP explains, “Older translators who didn't get formally trained and who already had a book of business [loyal
clients] that's perfectly happy to send them a text and they translate it sight, you know, from sight to word without benefit of translation tools beyond Microsoft Word.” The translation industry is now focused on training new translators in these programs. Translation Studies programs now offer classes to train translators in the proper use of CAT tools, which allows them time to learn without impacting job performance. The ATA and the software publishers also offer workshops and webinars to train translators.

A second consideration for translators when choosing to develop their CAT tool skills is the time it takes to make the tools effective. To leverage legacy texts, the translator needs a large database of aligned text and managed terminology. Each process takes considerable time as the translator curates his or her past work. This can be difficult for an established translator who would have to take time away from translating in order to go back through his or her previous translations and build up the database. Newcomers to the field have the advantage of being able to build these databases up as they go.

Gaining experience in MT systems as a post-editor is less about time and energy to learn new software than it is about switching mindsets. WG identifies a common characteristic of translators as being detail oriented. She says, “Translators are sort of OCD, which is what makes us good at what we do. So I go through and I refine the draft. And, you know, it’s got to sound natural, and this, that, and the other thing. And after I've gone though and I think maybe I have an acceptable draft, and this may be five drafts later, what I would then do is submitted it to a possible press.” While this is a good quality for translation, it can be a detriment in post-editing. One translator described post-editors as suffering from “Red Pen Syndrome,” over-correcting MT output. Koby (2001)
states that translators expect human translation to be perfect (or near-perfect), and have difficulty in dealing with mistakes in MT output. Rather than make the text understandable, untrained post-editors want to make it sound more human. The over-revision of text is the root for complaints that post-editing takes longer than translating the text by hand. While there is some training in post-editing offered by the ATA, students are not taught the process in translation studies programs.

It is unlikely for a translator to attempt to use CST for a text since the goal of the technology is to bypass the professional. In this case, the Translation Decision Model may always fail when considering that option. This model still may be used by clients or groups of amateurs looking for new translation strategies. Those wishing to use CST must consider two factors. The first is to set up a usable system for the crowd to work in. This takes a large commitment of time and money in order to develop a user-friendly program. The second factor is enrolling and controlling the crowd. The community surrounding the text must have enough buy-in to devote time and energy to the translation process. Those who cannot enroll enough translators are doomed to fail. Once the crowd is enrolled, the group must be controlled somehow in order to maintain order. Established hierarchies including editors and referees help prevent the group from descending into chaos.
CHAPTER 6

Discussion and Conclusion

In this final chapter, I will pull together the threads from the previous sections. I will discuss the impact of the translation models on the industry and the impact of this research on the anthropology of technology. I also propose new areas of inquiry in the translation industry. Finally, I briefly reflect on the meaning of this thesis.

Discussion

The two models described in the previous chapter, the Good Translator Model and the Translation Decision Model, demonstrate how perception can influence action. Each model is linked with positive and negative reactions of translators toward the uses of the three technologies. Generally speaking, the Good Translator Model exhibits a technophobic bias while the Translation Decision Model, if not technophilic, demonstrates a technological ambivalence. If the models create discord in the translation industry, why do they both persist? Is one model more useful to translators?

Although the reader might suspect that gender, or age may be causal agents in the division, this is not the case. During my field work, I heard both negative and positive positions on the new technologies from all demographics. What appears to be the real cause is the translator’s experience and knowledge of each of the technologies. The issue of age is only secondary factor. Those with only a cursory knowledge of the technology
tended to demonstrate the Good Translator Model, while those with more knowledge preferred the Translation Decision Model. This trend echoes Fulford and Granell-Zafra’s (2005:12) findings in which they state, “non-adoption of translation tools was more a function of translators’ lack of awareness of, and familiarity with, these tools than an active rejection decision based on thorough knowledge of the tools and their functionality.”

As Kempton’s (1987) study of thermostat usage indicates, individuals with a better understanding of how a mechanism works are able to apply models that maximize the benefits drawn from the mechanism. Those individuals who understood the feedback loops in thermostats paid less in heating costs than those who chose to micromanage their household temperatures. Similarly, translators who understand how the new technologies work are better able to maximize productivity. I found it interesting that the translators with whom I worked at the university were more likely to refer to the technologies as tools, as opposed to those on the message boards who continued to treat the technologies as separate entities. When asked about the usefulness of the three technologies, one of my informants at the university would continuously respond with “it has its place.” While frustratingly vague, it is also the most accurate description of the tools.

At the risk of stating the obvious, I am making the claim that individuals can only make decisions based on what they know about a situation. Unfortunately, this has not been obvious at all in technological studies. Pfaffenger’s (1992) Standard View of technology suggests that the positive and negative properties of a technology would be readily evident to the observer and the embedded teleology of the technology allows the
observer to make accurate predictions of its future use. In the translation industry, representatives from each side of the aisle accuse the others of being blind to the facts or actively ignoring the evidence, thus reinforcing their own views of technology. Even worse, the human brain seems to be in collusion with the Standard View. In his review of the literature on hindsight bias, Kahneman (2011:202) states, “a general limitation of the human mind is its imperfect ability to reconstruct past states of knowledge, or beliefs that have changed.” This is particularly hazardous for evaluating decisions. The outcome greatly affects one’s judgment, resulting in good decisions with negative consequences being judged harshly and bad decisions with positive consequences being judged favorably.

Highly publicized technologies may be worsening hindsight bias. Google Translate and the LinkedIn fiasco have far greater social resonance in the translation industry than their more developed counterparts. Because of this, they have become the representatives for their respective technologies much like the iPhone has come to represent smartphones. The flaws that these representatives possess have been projected on to the whole class of objects. For example, the Translators for Ethical Business Practices (2009) petition against crowdsourcing accused Facebook and Twitter of “asking professional translators who use their sites to provide free online services,” which LinkedIn actually did. It is not quite clear if Facebook—who launched its translation application over a year before the petition—or Twitter actively recruited translators.

Venues for communication may also play a role in reinforcing the different models. Web forums and community groups are excellent channels for quickly
disseminating information and providing a theater for debate. They also encourage short posts which lead to generalizations. These posts promote a relaxation of structured debate, citing singular and abnormal events rather than representing norms. A commenter is more likely to post about an exemplary negative or positive experience than a normative one. Other commenters may “pile on” and post similar experiences, thus reinforcing the original. For translators, this often takes the form of “client horror stories” which can reinforce the antagonism between client and translator.

Highly structured venues such as publications and conferences are more limited than web communities and are slower to disseminate information. They also allow for longer discussions and careful debate. Case studies and intensive research are more likely to be found in these spaces than in online communities. Instances of useful implementation of the new technologies gain a foothold in these venues since researchers are allowed the space to describe the systems of labor in full. These sites also limit participation by favoring expert opinions and consumption through subscription and registration fees.

The role that the university plays in this drama bears a striking resemblance to Alcoholics Anonymous as described by Bateson (2000). I am not implying that translators suffer from a pathology akin to alcoholism, but that they share an epistemology of self—one that Western culture shares in general. The university programs work to break down and reconfigure this epistemology, much like AA. Bateson’s model of the Western epistemology of self separates the conscious mind from the object of interaction, so that the person only recognizes work being done through free
will. AA and university programs remove this notion of conscious action in favor of cybernetics. The new epistemology recognizes the movement of information and action throughout the entire system so that changes in the object feed back to the human and change his or her behavior. For the translator, this change in epistemologies ends the fight with other technologies and enables him or her to incorporate technology into the work process.

It is no wonder that translators actively involved in academia are more likely to use the Translation Decision Model. Translators trained in university programs also have greater access to information and representative examples, thus widening their base of knowledge of translation technologies. New translators not enrolled in a university program, on the other hand, have limited access to information and rely more heavily on the experience of their peers. The limited base then reinforces the Good Translator Model.

A second distinction I would like to make is between acceptance and adoption. While the two seem to go hand-in-hand according the Standard View, they are separate phenomena. Acceptance does not always lead to adoption, and vice versa. Only through both can a technology become stabilized. Once again, those translators involved in academia have an advantage. They are given the tools and resources to learn how to use technology like CAT tools, while those outside must learn on their own initiative. While the outsiders may be in favor of CAT or MT, they may not have the money or time to adopt the systems. Others outside of academia may feel some pressure to adopt new
technologies, but without the background knowledge of how they work or benefit the translator, they may view the technology as an oppressive tool of the agency or client.

Both models do have positive and negative aspects. The Good Translator Model works to maintain solidarity among those in the translation industry which at times can feel besieged by outside actors. The model also isolates the industry from the outside as other actors circumvent them, cutting the translators off from possible work. The Translation Decision Model provides the translator with a better platform from which to make decisions and increases economic opportunities. It is also resource intensive as translators must devote time and money to maintain their education.

Ideally, all translators would use the Translation Decision Model, but in reality most may use a combination of the two. With limited resources, translators must choose which technologies to keep up-to-date on and which to maintain only a cursory understanding. CAT and then MT are the most likely candidates for translators to incorporate, while CST may be doomed to the periphery since it already bypasses professional translation. It is unlikely that the arguments will ever end completely, but given time, these technologies may stabilize.

The current state of translation is analogous to librarians in the 1980s. Pfaffenberger (1990) describes a community in turmoil after the introduction of online databases in *Democratizing Information*. Librarians feared that end-user searching would make their jobs obsolete as people relied more on computer searches. As the book develops, Pfaffenberger reveals that the complexity of and time required to use the databases dissuaded the general public from using the systems. Instead, the librarians
were able to enroll the databases in their interests. Like the librarians, translators hold an expert knowledge that can benefit from technological assistance, once they know how to incorporate it into their work.

*New Perspective on the Anthropology of Technology*

The case of the translation industry provides new insights into the relationship between humans and the technologies they use. Most published work in the fields that comprise the anthropology of technology have focused on how already-adopted technologies are being utilized in non-Western cultures and how the technologies impact society. Few have examined the process of adoption itself, as it is occurring within a culture. Here, I would like to make a few suggestions, based on what I have learned through my research, to those who wish to study technological adaptation.

The first critical step is to study the history of the technology. As actor-network theory has demonstrated, the history of a technology shapes possible future outcomes (see Latour 2005; Latour and Woolgar 1986; Law 1987). A study without the history of technology lacks the context in which the technology developed.

I also advocate for the use of cognitive methods and theories in the study of technology adoption. Adoption will occur at the cultural and individual levels. The translation industry does not adopt CAT tools as a whole. Instead, it is up to each individual to choose whether or not to use it and how. The industry and the individual are locked in a dialectical exchange as the individual makes decisions based on information from the community and then goes on to add more information back in to influence others. This exchange of information is partially a mental process and should be studied
as such. It is important to note that these choices most likely follow a general pattern, but the pattern may not be homogenous in a community. It is more likely for a community to hold several patterns, and the distribution of these patterns is significant in understanding the culture as a whole. Recent work on spatial cognition in Oceania and Indonesia has emphasized the benefits for a community to hold multiple models, in that it allows community members a diverse array of strategies in a highly complex world (Mawyer and Feinberg 2014; Shore 1996, 2012). For example, Feinberg (2014) demonstrates that multiple spatial models held by the inhabitants of the Polynesian island of Taumako exist for different purposes and scales. He also notes the utility of these models requires proper judgment and attention on the part of the user and are consequentially understood to varying levels of detail by community members.

Finally, I would like to recognize once again the importance of the distinction between acceptance and adoption. Acceptance alone can be highly complex, as an idea can be accepted in abstract but rejected in context. When examining adoption, one must look at multiple cultural elements such as social pressure, economic stratification, and gender roles among other considerations. Studies that focus on one aspect or the other only show half the picture. Acceptance without adoption relegates technology to the realm of idea and fantasy. Ever since the Jetsons, Americans have had a love affair with the flying car, but without the means to mass produce one, it endures only as a dream. Even if a flying car were to come to market, not all Americans would have the means to procure one, dividing the country between those who have flying cars and those who do not. This difference is itself anthropologically important. In the reverse, forced adoption
without acceptance can lead to strategies to undermine and abuse the technology.
Pfaffenberger (1992) describes police officers who were forced to use GPS trackers in
their patrol cars parking under freeway overpasses as one strategy to counter the constant
surveillance, at least for a moment.

By following these suggestions, the study of technology adoption can be
strengthened greatly. These methods allow the process to be studied as it is occurring
rather than examining it after it is complete. It also recognizes the cybernetic loop
between technology and society and allows the investigator to go beyond the social
impacts of the technology.

**Further Investigation**

The goal of this thesis was to identify how translators use cognitive models to
understand and position new technologies within the industry. Discovering these models
can only lead to more questions and fields of inquiry. In this section, I would like to
propose future research topics that this project invites.

First, the models proposed in this thesis should be tested and validated through
further research. I would suggest that large-scale surveys should be constructed and
distributed that test these models. Does the translation industry as a whole use these
models? Do the models accurately predict behavior among translators with respect to new
technologies? Are there more models being used by translators to understand technology?
These are the questions that need to be asked to test the models present in this thesis.

I would also like to encourage comparative studies of other actors within
translation. Ethnographies of clients, agencies, amateur translators, and computational
linguists would help to reveal the larger picture that these new technologies paint. Similar studies of translators in different regions are also greatly encouraged. Latin American translators prefer to not use CAT tools, and other regions of the globe may feel differently towards the new technologies when compared to American translators.

This thesis also calls into question how resources such as money, information, and prestige are distributed and flow within the translation industry. How are some translators able to accrue wealth and prestige while others are forced to drop out of the industry? I also recommend an investigation into the distribution of power between translators, agencies, and clients and how that distribution might have changed over time. Cyborg anthropology and science and technology studies have had continued success in studying the distribution of information in Western culture and many of their techniques can be applied to translation. I have tried to implement some of these in this thesis but a more focused study of information distribution can be a boon for the industry.

Finally, I recommend a longitudinal study of translators and technology. As time passes, the relation between translators and technology will change. Research from the past 30 years has already shown the change in attitude towards CAT tools. What will the next 30 years show? There is also the possibility of new technologies entering into the industry in the future. Translation is far from a static industry and deserves more study from outside the translation industry, especially as the world becomes more globalized and new markets emerge.
Final Thoughts

This thesis has explored the world of translation and the new technologies changing it. In the process, I have identified a community fighting to maintain its identity in the face of these changing forces and trying to come to terms with new actors. The Good Translator Model and the Translation Decision Model demonstrate the divide between human translators with regard to the new technologies.

Haraway (1991) never said that cyborg politics would be clean. The combination of human and machine will always be a messy process. Where identity is concerned, the cuts will always run deep. The high emotion described in this thesis is a result of a highly diverse group of actors trying to come to terms with their new relationships. By exposing the identity politics and the actors shaping the translation industry, it was my intention to open up discussion among translators about the state of the industry. It is my hope that this thesis might begin to soothe some of these wounds.

At the end of Zetzche’s presentation at the 2013 ATA Annual Conference he declared that it is time for translators to stop being bystanders to technological development and take control. To this, one woman in the audience begged, “How do we do that?” It may be about time for the entire community to start asking that question, because it is ultimately up to the community to decide where the translation industry might go. I hope this thesis will help lead it forward.
APPENDIX A

Glossary

actor – any person, object, or force that demonstrates agency

actor-network theory (ANT) – a theory proposed by Bruno Latour, Michael Callon, and John Law that states that technology is made up of a network of actors acting upon each other

agency – conscious or causal action performed by an actor upon another actor

American Translators Association (ATA) – national level representative body for the translation industry

antisignification – a process where a marginalized group tries to invert the implicit symbolism of a technology

black-boxed – an actor-network that has become stable and its constituent parts are now ignored

computer-assisted translation (CAT) – a type of translation where the translator uses specialized computer programs to aid the translation process

crowdsourced translation (CST) – a type of translation where a community (known as the crowd) works collectively to translate a text

cybernetics – the science of communication and control within systems

cyborg – a cybernetic organism; an entity made of mechanical and organic parts
cyborg anthropology – the field of anthropology concerned with the interaction of humans with technology and scientific knowledge

default value – the normal expectation of an individual for a slot of a schema

digital anthropology – the field of anthropology concerned with the interaction of humans with digital technology

Fully Automated High-Quality Translation (FAHQ) – translation produced by a computer algorithm that is of the same quality as a human-produced translation

Good Translator Model – a cognitive model used by translates to determine if the translator in question is a moral translator

human translation – a translation that is produced by a human with minimal assistance from digital technology

language pair – the set of languages consisting of a source language and a target language used in a translation project

language service provider (LSP) – a company that organizes labor and capital and mediates work between freelance translators and clients; also known as agencies

legacy text – previously translated text

machine translation (MT) – a type of translation where the translation activity is being carried out by a computer program

model – a set of cognitive elements used to understand and reason about something

network – a collection actors acting upon each other

parallel document – texts that cover the same general topic and can be used for reference
**post-editing** – a translation process where a human corrects the output of a machine translation

**project manager (PM)** – the individual charged with organizing labor and capital during a translation project

**prototype** – a schema with all slots set to their default values

**schema** – a set of rules and expectations that bound an experience and give meaning to it

**science and technology studies (STS)** – an interdisciplinary field dedicated to the study of the interaction between scientific knowledge and technology and society; also known as science, technology, and society

**slot** – a placeholder for variable contexts in a schema

**sociotechnical system** – the activities of a technology generated from techniques, material culture, and labor

**source language** – the language the text is written in; the language to be translated out of

**source text** – the original text; the text to be translated from

**target language** – the language the text is translated into

**target text** – the text produced by translation

**technique** – a system that includes materials, tools, skills, knowledge, and modes of work to produce an artifact

**technological adjustment** – the subversive action of a marginalized community who use its activities to compensate for its social loss

**technological drama** – a series of statements and counterstatements concerned with technological change
technological regularization – creates or modifies technologies for political ends

technology actor network (TAN) – a specific technology formed by an actor-network

terminology database (TB) – a database that affixes terms in multiple languages to one concept; also known as a termbase

terminology management – a tool that maintains consistency of term usage among translation projects

text alignment – a tool that separates source and target texts into segments and then pairs translated units together

Translation Decision Model – a cognitive model used by translators to determine which translation technology is most appropriate for the translation task at hand

translation environment tool (TEnT) – a specialized software that hosts CAT tools

translation memory (TM) – a tool that stores translation segments and suggests possible translations for untranslated segments

user-generated translation (UGT) – any translation produced by a non-professional translator

Web 2.0 – websites or web tools that allow for user interaction

workflow – the work processes of a translator
APPENDIX B

2013 ATA Annual Conference Survey

During the 2013 American Translators Association Annual Conference I conducted this survey. The following will describe the questions asked to the participant. The final two pages of this Appendix are the survey sheets I used to collect my data.

The first section of the survey collected demographic data. I asked for the participant’s sex and age.

The second section collected professional data. I asked for the participant’s years of experience in the translation industry, his or her translation speed, the language pairs he or she worked in, and if he or she was ATA certified in that language pair. I also asked for his or her area of specialization and training.

The fourth section collected technology familiarity data. I asked if the participant had experience using each technology, if his or her opinion of the technology was positive, neutral, or negative, and to self-rate his or her computer skills on a scale of 1 (lowest) to 5 (highest).

The fifth section collected data from a pile sort. Each participant was instructed to pile sort eleven cards representing the translation domains according to how closely each domain was related to the others. See Bernard 2006 for a more thorough discussion of pile sorting. The results of the pile sort were documented in this section as a string of letter and number references.
The sixth section collected compatibility data. For the first table, the participant was asked if he or she would use the given technology for the given domain. The question was repeated until all cells were filled in. The second table was used if the participant felt that certain domain hybrids were different enough to mention. For the third table, the participant was asked if he or she would use the given technology for the given language pair that he or she worked in. The question was repeated until each technology was paired against each language pair that the participant worked in.
Informant ID: ________________

Demographics:
Sex: M / F
Age Group: 20-29 / 30-39 / 40-49 / 50-59 / 60-69 / 70+
Years of Experience: __________ ≤5 / 60-10 / 11-15 / 16-20 / ≥21
Translator Speed (wd/hr): ≤250 / 251-450 / 451-650 / 651-850 / 851-1050 / ≥1051

Language Pairs: Source Target ATA Cert.
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______________________________ > ________________________ _____
______________________________ > ________________________ _____
______________________________ > ________________________ _____
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Area of Specialization: ____________________________________________

Training: ________________________________________________________

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<th>Crowd Sourced T</th>
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<td>Y / N</td>
<td>Y / N</td>
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<tr>
<td>Attitude</td>
<td>+ / 0 / -</td>
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<td>Computer skills:</td>
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Pile Sort String: __________________________________________

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