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The Industrialization Of The Knowledge Economy: A Rhetorical Analysis Of Intellectual Property Policies

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THE INDUSTRIALIZATION OF THE KNOWLEDGE ECONOMY: A RHETORICAL ANALYSIS OF INTELLECTUAL PROPERTY POLICIES

by

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La Royce F. Batchelor
April 15, 2016

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ABSTRACT

Whether a singular stroke of brilliance or a slow evolution of discovery; ownership of ideas has been the root of innovation and controversy. Ideas may be bought or sold, traded or stolen, developed or lost. Intellectual property is a legal construct created to protect exclusivity of creation and rights of commercialization and distribution. The landscape of intellectual property has become expansive and complicated. It has become difficult to classify intellectual property rights as many people consider them economic rights, and others, property rights, and still more, increasingly in the West, personal rights, much like free speech. Historically, governments and institutions have sought to control the diffusion of ideas as shifts in ideas and their proliferation have often destabilized existing structures and paradigms. One such institution is higher education. This research examines intellectual property policies within the hotbed of knowledge creation, higher education. Higher education sits in a unique position to create intellectual property. Policies have been created surrounding intellectual property within higher education since the advent of the Bayh-Dole Act of 1980. This research examines 11 of the top entrepreneurship institutions' intellectual property policies. Examinations of these policies through Fairclough's critical discourse analysis, exposes language assumptions, relationship dynamics, and policy flaws. These policies not only limit understanding of intellectual property, but through their top down nature, their controlled structures and punitive approaches serve to limit the environment in which intellectual property might

be created. These policies clearly indicate that it is the power structure that is to be preserved, not intellectual property that is to be created.

CHAPTER I

INTRODUCTION

Introduction, Ideas, Origins, and Credit

In June of 2004 technology that would eventually change the world was developed in a dorm room at Harvard University (Biography.com Editors, 2016). This hotly contested technology was the outgrowth of first a computer coding class project called Facematch and the brain child of two brothers who hired Mark Zuckerberg, Facematch's creator, to create an online network for Harvard University students. Zuckerberg, after only two weeks on the project left to create Facebook. Zuckerberg was sued for intellectual property infringement and settled out of court paying $65 million. This single story is indicative of the increasing difficulty of understanding intellectual property in a changing economy and a technological world.

Throughout history, original ideas are the demonstrated sources of revolutions of thought and practice; in many situations giving rise to other thoughts and innovations. For example, in 1608, Hans Lippershey was inspired by two children in his shop looking through different lenses and observing that a distant weather vane appeared larger through the lenses than without them. While Lippershey has been widely accredited with inventing the telescope, many also believe that Lippershey stole the idea from another, Zacharias Jansen (Cox, 2013). Whoever received credit for the contraption, the telescope

changed the way the world and stars were viewed. It is this timeless argument of original thought and creator credit that plagues every industry.

Credit for innovation is often tangled with other ideas and scientific principles. While Thales of Miletus in Greece between 620-550 BC is credited with studying electrical charges and attractions created between two objects, it is most frequently Benjamin Franklin in 1750 that is credited with the discovery of electrical charges through his simple experiment (wiseGEEK, 2003-2016). The slow evolution of understanding from Thales to Franklin planted seeds for other innovations and inventions, but who discovered electricity? This is the question at the base of intellectual property contentions globally. There are several questions that plague intellectual property law: (a) who should get the credit, (b) who should get the reward, (c) how should innovation be developed and distributed, and (d) who should decide these processes?

While technology and the industrial economic model both shift to a knowledge economy, the landscape becomes unstable. New terms and definitions are created and new understanding evolves. This new understanding is based on communication. Descriptions of ideas, parameters of ownership, determinations of categories of rights, as well as repercussions for infringement all shift as new technology, laws, policies, and innovations alter previous understandings of product and ownership. It is through communication and language that these alterations are understood. Academic disciplines struggle to keep up with the shifts. From cave paintings to Socratic oration, from the Gutenberg press to online publication, the paradigms within the academic discipline of communication have shifted as well to encompass new understanding. Communication

scholars have examined ideals of argument and oration, intent and motivation through Aristotle and Plato. Communication has examined realism and the construction of reality through communication through philosophers such as McLuhan and Watzlawick. The middle ground between the two is occupied by a mix of theorists considering the pragmatics of communication, while pulling from both sides. All understanding shifts as innovation changes the landscape, and like changing lenses, makes some philosophies more prominent or larger than others.

Communication is no different. Thinkers of the past attempted to pull together previous philosophies and turn and stretch them to adjust for new understanding. As understanding changes so too do the lenses through which all things are understood. However, through all alterations and evolutions of understanding it is clear that language communicates knowledge. Similarly, the ability to communicate that knowledge and control language gives rise to elements of power and control. How knowledge is communicated constructs social boundaries, relationships, controls, and liberations. Language can be limiting in light of innovation. Thereby a dichotomy is constructed between the limitation and control of knowledge and language and the creation and innovation of knowledge and language.

Whether a singular stroke of brilliance or a slow evolution of discovery; ownership of ideas has been at the root of innovation and controversy. May and Sell (2006) agreed and asserted, "Accounts of two thousand years of technological advances, legal innovation, and philosophical arguments about the character of knowledge production suggests that the future of intellectual property law will be as contested as its past." (p. 1)

But this research is not limited to industries, but rather to individuals as well, as the individual is the source of innovation. Thoughts are decidedly an internal, individual advent, and the source of innovation. Descartes wrote in his 1637 treatise on reasoning "Je pense, donc je suis" (Descartes, 1637/2013, p. 42) or "I think, therefore I am" (Descartes, 1637/2013, p. 47) This firmly asserts that individual original thought is foundational to existence and identity as well as creativity. Some thoughts may become useful innovations, readings, poetry, even scientific breakthroughs. Even if the innovation is an idea, often the idea may be bought or sold, traded or stolen, developed or lost. A formless concept, the result of thought work, can generate concerns of ownership and profitability. The result of such intellectual effort, commoditized, is "intellectual property" (IP). Clearly, even if an innovation is property, it is still housed decidedly in the intellectual function of the individual who created it, but also, after dissemination, within the minds of others. Thomas Jefferson wrote, "He who receives an idea from me, receives instruction himself without lessening mine; as he who lights his taper at mine, receives light without darkening me" (Jefferson, 1813, para. 1). However, where does an idea end and a product begin? Jefferson points to intellectual property, or property as the result of mental function or creativity. Intellectual property is the result of knowledge capital combined with earnest effort; what is known combined with creative processes to create new technologies. In order to understand this, it is necessary to explore the varied definitions of intellectual property and attempt to resolve the differences in those definitions.

This research begins to answer these questions by first examining the origins of intellectual property rights and laws. Second, policy creation and analysis is examined

before, third, a strategy of communication or rhetorical analysis is presented in order to better understand the intellectual property conundrum. In order to test this, 11 intellectual property policies from the top entrepreneurship universities will be used as the sample to determine the rhetorical strategies of policies, language, and relationships created to begin the conversation on intellectual property conflict.

Whether a singular stroke of brilliance or a slow evolution of discovery; ownership of ideas has been at the root of innovation and controversy. May and Sell (2006) agreed and asserted, "Accounts of two thousand years of technological advances, legal innovation, and philosophical arguments about the character of knowledge production suggests that the future of intellectual property law will be as contested as its past." (p. 1)

It is helpful to examine intellectual property on the cusp of monumental shifts in concepts of markets and products. The evolution from hunter/gatherer to Stone Age, to Industrial Age, to Information Age has produced substantial alterations in social constructs, personal identities, and technological advances. As hunters and gatherers, people created items to aid in subsistence. Baskets, bags, and containers of all kinds were created and traded to contain food stores. Processes were created to preserve meat and cure skins. Crude tools evolved in the Stone Age to improve hunting and processing, and efficiency. With the advent of machines, the Industrial Age revolutionized production, education, employment, and finances. The Information Age, focusing on the shift from memorization to storage of information and quick access to information, created an economy motivated by faster information and the leveraging of massive amounts of data. Similarly, the movement from a production based economy to a knowledge based

economy has created inevitable evolutions or revolutions. Sun and Baez (2009) stated, "The increasing importance of intellectual property is largely attributable to the shift that moved the United States and other nation-states from an industrial society to an 'information society'" (p. 3). These historic era constructs and social/individual disruptions and creations demand the examination of intellectual property in its current state of flux. Marshall McLuhan (1962) illustrated a similar shift in *The Gutenberg Galaxy*; a theoretical exploration of intellectual property, social construction, and change.

Theoretical Framework: The Gutenberg Galaxy and Social Change

What is the best way to frame and understand intellectual property and shifts in culture? A legal approach would mean that readers of policies would need a legal background or understanding. Legal approaches to policy documents assume that the authors wrote the documents within a legal construct. A policy analysis approach typically examines the creation of policies, not their changing function. Academically, policy analysis focuses on the systems utilized to create policy in order to manage situations and guide desired behaviors. Policy analysis criteria most often negates assessment of existing policies for any other purpose than revision. Therefore, the logical lens is communication. Policies are necessarily communication, documents created for the purposes of communicating rules, guidelines, expectations, and consequences. Altheide (2000) asserted that "all methods of research presume an underlying theory of social order and a theory of communication and social interaction" (p. 289). The underlying theory of communication for this project comes from McLuhan's (1962) views of alterations in socially constructed identity through shifts in knowledge creation and publication. Theoretically, Marshall McLuhan (1962) in *The Gutenberg Galaxy*

discussed the shift from an understanding of publication as a commonwealth, communally owned elements of social construct, to individually held and propagated ideas. Scribes copying letter for letter, word for word, rendered textual information a rarity before the invention of the printing press. McLuhan's (1962) categorization of the role of the press in society closely aligns with the historical progression of intellectual property. "In 1476 the printing press was introduced into England by William Caxton. By the early sixteenth century, two trades dominated the industry: booksellers, or stationers, many of whom were also printers, and independent printers" (Chartrand, 1996, p. 6). Mass production of publications changed the diffusion of ideas.

Copyright was created as "the Crown" determined which texts could be reproduced and by whom. This limited access to printed materials controlled price and pervasion of texts and literacy. Royal/governmental limitation gave rise to popular public readings of works. Mass printing of text and the creation of new texts produced a market approach to ideas and printed materials. Movement from public recitations to private text ownership, in turn, precipitated constructs of individual ownership, possession, pursuit, and identity linked to production. "When in 1640, royal authority ceased to carry force, enterprising printers took the opportunity to register themselves with the publishing industry's trade association as issuers of the coveted legal compendia" (Berson, 2010, p. 214). Consequently, multiple copies of works flooded the market in varying degrees of accuracy. Access to texts and increases in literacy produced an economic boon and a shift in cultural and individual identity. "It was not until 1775 that the House of Lords supplanted the common law of printing rights in favor of the author" (Chartrand,1996, p. 6). Prior to this, authors received little compensation for their work as publishing houses

garnered much of the profits. Local stationers produced works for the area and for distribution abroad. Works distributed produced culture and individual identity in relation to author, content, and stationer. Individual citizens read materials, internalized content, cultivating an understanding of the world and concepts constructed by individual readings; not public recitations or interpretations. Therefore, authors, materials, and texts impacted individuals and their development directly, personally, and perhaps unwittingly.

The printing press also changed the way people thought. McLuhan (1962) asserted that the press destabilized a tribal understanding of text from auditory to visual. He stated,

> The twelfth century audience took these recitals (public readings) in installments but we can sit and read it at our leisure and turn back to previous pages at our will. In short, the history of the progress from script to print is a history of the gradual substitution of visual for auditory methods of communicating and receiving ideas." (p. 100)

Verbal cultures rely heavily on inflection and nonverbal cues creating a highly visual experience, whereas literary or post press cultures must add the inflections for themselves. A reader must hear words, conversations, and scenes in their own minds. The advent of the press standardized spelling, grammar, and usage. The post press society has required a reference text for meaning; a dictionary which also homogenizes pronunciation. It seems counter intuitive that a social structure which has required reading aloud of texts would be visual and one which has required individual reading would be auditory. However, when considering human mental processes, it becomes clear that the act of assimilating information is not a passive one, but requires full brain

interaction with the source of information. When presented with a verbally delivered story, a listener hears it as delivered and visualizes the scene, also engaging visually with the speaker. Conversely, the post press consumer or reader is only presented with text and must create the scene. Interestingly, readers hear text in their mind, while creating inflection.

The history of ideas and authorship are important as it is carried by the current population. Schnapp and Michaels (2012) stated, "'Authorship' – in the sense we know it today, individual intellectual effort related to the book as an economic commodity – was practically unknown before the advent of print technology" (p. 6). Texts were communal, read aloud, shared, often obscuring authorship. It has been a modern, post printing press concept that intellectual effort is private property (Schnapp & Michaels, 2012). "We find that we are legatees of these mid-century debates. We inherit the terms of their arguments, forged at the onset of the information age, when both science and intellectual property were changing quite dramatically" (Johns, 2006, p. 161).

Not only are consumers trained in reading aloud, but also in reading silently, in communicating ideas, and containing them. It must be considered also that a verbally delivered text is synchronous, or consumed at the moment of delivery with others and with the presenter. However, for readers in a post press world, delivery is asynchronous, consumed largely in a solitary manner, at a pace personally determined, to the exclusion of other social elements. This solitary consumption of ideas through text adds new meaning to Thomas Jefferson's possession of an idea, that once shared, it is irrevocably shared; a hearer may not be dispossessed of the idea, and in a discussion, has received the content freely. Individualized consumption of text may be shared unbeknownst to

original authors. This creates conflict within the understanding and practice of intellectual property.

Clearly, a lens of communication is the most appropriate approach for this study. Historically, governments and institutions have sought to control the diffusion of ideas as shifts in ideas and their proliferation have often destabilized existing structures and paradigms. The knowledge economy and Information Age have produced multiple avenues for instantaneous individualized unregulated authorship and information consumption. Varied and often conflicting definitions of intellectual property contribute to the confusion surrounding creation, ownership, and public good. Similarly, enactments of protection of intellectual property involve complicated language, definitions, and relationships. In order to better understand the constructs which protect intellectual property, it is necessary to examine the policies that govern their production and distribution. As an examination of intellectual property is expansive, crossing many disciplines, the best place to discover the operationalization of intellectual property may be within higher education. Higher education has been put forward as a knowledge creation engine. This project has examined intellectual property policies within the hotbed of knowledge creation.

Intellectual Property Definitions

Intellectual property is decidedly property, but what is property? Maughan (2004) stated that "property is whatever societies choose to define as property and can protect as property. In some societies people are property; in most societies land and transferable goods are property; in many societies various manifestations of the intellect are property"

(p. 383). However, Maughan understood the difficulty of identifying intellectual property as property. He stated,

> Lay concepts of property, including intellectual property, tend to be based on the idea that there is an easily identifiable thing, the property which can be owned by a person or group of persons, and used in whatever way the owner wishes for the economic benefit of the owner. (p. 379)

Maughan based definitions of intellectual property on two concepts: economic benefits and moral rights of owners as creators receiving either financial benefit from their labors or social recognition. This bifurcation of the understanding of intellectual property rights is also clear in Chartrand's (1996) work as he stated,

> Creators' rights rest on two pillars: economic and moral rights. Economic rights allow a creator to assign to others the right to use a work. . . . Moral rights, however, grant the creator continuing control over the work despite its economic exploitation. (p. 7)

Maughan outlined the difficulties of creating a definition, and a firm concept of intellectual property remains amorphous. However, examining these two aspects of ownership is also helpful as it separates credit of creation from rights of distribution or revenue.

While dividing intellectual property into two categories of creator credit and revenue protection is helpful, it lacks categories in which forms of intellectual property might be placed or examined. Perhaps a good definition includes an identification of what is included in IP. Lemper (2012) attempted a list approach to intellectual property. He explained that "the term intellectual property actually refers to several types of legal

rights for intangible assets but the most common IP in business today includes patents, copyrights, trademarks, and trade secrets" (p. 340). Lemper implied using actions of protection by labeling intellectual property as a legal right, negating Chartrand's other pillar of moral or social rights of recognition.

Rabino and Enayati (1995) took this one step further and stated specifically that intellectual property has been "defined as an intangible creation of human intellect for which a government will grant protection" (p. 23). Chartrand (1996) agreed: "In effect, the rights of the artist are considered a bounty granted through the patronage of government" (p. 6). Ganguli (2000) identified problems with rigorous protection of intellectual property. "Strongly inter-knitted societal, moral and ethical issues are already influencing approaches to international trade involving technology management, ownership of knowledge and business processes" (Ganguli, 2000, p. 168). Howkins (2013) stated this more succinctly, "There are two underlying trends in force, heading in opposite directions, a trend to privatization and a trend towards more open access. Both are getting stronger" (p. 117). Watt (2005) stated, "The nineteenth century vision that subdivided world intellectual property law into discrete and mutually exclusive compartments for industrial and artistic property has irretrievably broken down" (p. 380). Watt's (2005) polarization of positions produces dichotomous, divergent, and even vilified approaches to intellectual property manifesting varying definitions and conflicting legal perspectives. While identifying and compartmentalizing creations into categories may be helpful for the purposes of property protection and rights, it also serves to negate many innovations, leaving the creator without any protections as their innovation may not fit neatly into an existing category.

The biotechnical field typifies one area left without protections. This field has traditionally been considered pre-existing, a form of nature, therefore universally available to everyone. However, what of DNA engineered biotechnical advances? As technology advances, defining innovation and invention also becomes more difficult. Traditionally, discoveries were exempt from protection. The tremendous advances in biotechnical industries most clearly illustrate this. "The biotechnological revolution of the past 20 years has, however, brought great pressure to bear on the way in which the line between invention and discovery has been drawn" (Frow, 2000, p. 179). While a creation or invention may be protected, discoveries cannot. Howkins (2013) discussed this distinction and stated, "A discovery is something that previously existed and an invention is something new" (p. 111). However, firms have been granted patent protection for discoveries of products of nature patenting not the natural product, but the utility. Even this poses difficulties as Frow (2000) stated that many elements of nature are thought to be universally communal such as language and cannot be protected by patent, stating, "I can patent what I invent, but not what I discover" (p. 179). The line between discovery and invention is blurred when traditional hybrid approaches are accelerated by DNA manipulations. These scientific manipulations, clearly an innovation, create an opportunity for patent protection of engineered elements of nature. These forms of protection are for purposes of revenue protection and economic gain, leaving behind the moral argument of creator credit.

As the moral argument of creator credit seems to increasingly be left out of the discussion of intellectual property, favoring an argument founded in revenue and ownership, examining intellectual property from the perspective of protecting revenue is

paramount. However, defining IP from an economic perspective is also limiting. Moroz (2005) discussed intellectual property as the . . .

> . . . right to make a profit from an innovative activity; giving the holder the possibility to engage in two possible actions, 1) control of the diffusion and the commercialization of that knowledge and 2) the enforcement of sanctions that condemn its illegal use. (p. 307)

This definition not only separates an innovation from its creator, it also grants rights of property as well as exclusion, allowing "sanctions" against those that would use the innovation outside the constraints of an established legal relationship of use. While the definition for intellectual property frees an innovation from discussions of creation and nature, it is limited as it fails to address the breadth of IP, the conflation of IP with other protected knowledge based commerce, and isolates an IP product from production and producer.

Moroz's (2005) definition granted all power and control to a "holder," not a creator or owner. Also, this definition conflates economic rights with rights of property. It is precisely this definition in isolation that begets a problem. Intellectual property, isolated from a construct, the creator, and from a knowledge process renders IP a standalone product, an identifiable thing. While a definition in isolation is more easily controlled, relationships that surround that commodified knowledge production produces ambiguity. A definition that does not include a creator or the context of creation begs the question: What concessions are made for the creator? What are the conditions of ownership transferal? What are the implications for further development of other concepts based on a singular innovation when ownership is disputed? If an intellectual

product is owned, yet the idea is still held within the mind of a creator, how is this true ownership, as possession often defines ownership? An innovator can share an idea while still possessing it, which then can also be shared and perpetuated and yet still be possessed simultaneously by all. Consequently, clearly, possession is not ownership. These outmoded, industrial model aspects of production and ownership considerations of intellectual property demonstrate the limitations of existing categories of protection and classification. The emerging model of a knowledge based economy creates confusion and an ill-fitting set of rights and protections.

Considering definitions and difficulties of creation and ownership, intellectual property must be defined as a creation or innovation containing three elements:

1. creator credit,
2. innovation commoditization and distribution property rights, as well as
3. protection of existing and potential revenue containing within it the right of exclusion (the right of the owner to deny anyone use of the property).

Each element of a definition for IP may be isolated, controlled, and/or protected; and, through rights of exclusion, an individual may be granted the power of one of the three elements of an intellectual property. The rights of individuals to explore an innovation can be limited through exclusion. Rights of credit may also be limited. Similarly, while some elements of an innovation may be protected, perhaps others are not and may be pursued. This operating definition includes elements of the majority of accepted and broadly used definitions of IP while also encompassing non-property related elements such as the moral argument of creator credit as well as rights of exclusion.

Increasingly, IP protection guards against forms of illegal copying or piracy; however, this issue becomes more difficult if the IP protection protects merely an idea or proof of concept. The philosophical question is: Who owns a thought or an idea? The legal question is: At what point is an idea a product produced under conditions of employment or for purposes of commercialization? The ethical question is: Can an entity own the mental creation of another individual for purposes of commodification? Increasingly, these traditional constructs, intended to protect property, poorly fit IP in our shifting knowledge economy. As our paradigm shifts from an industrial model of production and replication for profit toward a knowledge economy, built on an exploration of understanding and information, the epistemological question is: What does knowledge create? Similarly ontologically: If there is thought and knowledge, is there a commodity? These are questions from which the IP debate grows. While analyses of IP policies greatly vary, policies and shifts at the time of this study have remained undocumented and largely unanalyzed. Traditional rights constructs, the industrial model of IP, and an individual within a knowledge economy, become opposing forces utilizing different modes of operation and concepts of product and identity.

Evolution of Property Rights and Constructs

What is considered property? Who can own property? Exactly what does ownership imply? These are all questions to which the answers continually change and shift. From historical Crown influenced concepts of real property to more modern concepts of personal property, rights of ownership are balanced with concepts of exclusion and protection. Howkins (2013) demonstrated the difficulty of rights and property protection. “Land owners sleep comfortably because they know the law, which

their ancestors probably wrote, protects them, but the market-place of intellectual property is a more crowded and confusing place" (Howkins, 2013, p. 80). Many individuals want no remuneration for their innovations, but merely recognition. Epistemologically, history has framed how we define property, knowledge, intellect, and ownership. Johns (2006) argued that "History has conditioned how we think of intellectual property and science, as well as what we think of them" (p. 162). New concepts are built on the foundations of older ideas. It is necessary to understand the evolution of intellectual property historically in order to understand the confines of the structure and arguments of historical property at the time of this study.

"First, the concept of intellectual property and the corresponding notion of originality stemming from a persons' intellect are not natural, nor have they been universally embraced" (Halbert, 1996, p. 148). Intellectual property is a legal construct created to protect exclusivity of creation and rights of commercialization and distribution. The rights, at their core, stem from natural liberties, such as freedom of speech (Hamburger, 1993). As humans evolved first as hunter/gatherers, intellectual property was secondary to survival. Through the Stone Age, even art was a display of spiritual growth or geographic directives, but no one charged admission and signing works proved problematic without a universal form of writing. As humans progressed, still, IP was not a paramount consideration. Howkins (2013) stated that historically, "Writers and artists believed themselves to be vehicles for divine inspiration and not entitled to benefit personally from their work" (p. 87). Communication theory discusses this as a spiritualist approach (Craig & Muller, 2007). Under this concept, it would be hubris, or an act of extreme blasphemous pride to claim ownership and gain monetary reward for an

innovation. This specifically contravenes concepts of intellectual property, ownerships, and rights as well as the social or moral element of recognition (Durham Peters, 2007).

Conversely, as an advent of trade, many ruling bodies sought to control products, inventions, and intellectual property. Eliminating religious restrictions of ownership and containing the argument to that of legal ownership of intellectual property, Chartrand (1996) delineated, "There are, in fact, two distinct intellectual property rights traditions in the first world. These are the Anglo-American Common Law and the European Civil Code" (p. 6). While protection of trade and production has been in effect since the 1400s, intellectual property as a cultural construct is relatively new (Johns, 2006).

According to Maughan (2004),

> Real property owes its origins to the feudal system of tenure and estates, whereby all land is held from and through the Crown; and real property is protected at law by real actions which allow recovery of the land if the owner is dispossessed" (p. 380).

Historically, ruling bodies such as monarchs held lands and real property. Protected by law, property concepts and infringements became real concepts, debatable, enforceable, and litigable (Maughan, 2004). However, personal property was more transient without a force to protect it. In situations of intangible property such as debt, goodwill, shares, bills of exchange money, or intellectual property, historic laws of property were rendered unenforceable as these laws focused on production, possession, and perpetuation.

Concepts of property and ownership are further complicated through industrial style assembly production as well as unique product production. Prior to the Industrial Revolution, products were crafted individually; IP provided protections of this highly

laborious method of production. The Industrial Revolution enabled mass production by hired workers, producing in assembly, parts of a larger product, enabling easy copying and IP infringement. Broader and broader definitions were necessary to protect intellectual property as well as new categories such as processes and maker's marks.

The landscape of intellectual property has become expansive and complicated. "The possibility that rents may accrue to all forms of property can lead to deliberate attempts to distort meaning that if something is of monetary value, it is irrevocably changed in its nature (Maughan, 2004, p. 381). Berson (2010) agreed and stated that rents and protection of those rents have created an "intellectual defense industry" which directly influences property and mass media laws. As new processes and property are created, each must be assessed according to its position in an ever broadening scope of product and property.

Conversely, public goods such as law and order, love, and knowledge "have the characteristics that they are non-depletable" (Maughan, 2004, p. 382). This concept of non-depletable means that even as products are consumed, the quantity of each product remains the same. Public goods cannot be owned as property as by law, it is impossible to exclude individuals from using public goods. Questions arise such as who owns this product, this process, this concept. Chief among these property questions is that of intellectual property. While property has been classified as real, public, or personal property, concepts of intellectual property shift on this scale. For example, a scientific discovery, while it can be claimed, cannot be considered property for the purposes of property rights while published information about the discovery can be considered property.

Historical constructs of property and rights as well as new paradigms such as the knowledge economy must be discussed. Concepts of property are often confusing. Property is something tangible to be owned and possessed. Watt (2005) argued that the traditional approach to IP protection is outmoded, "The theory that the classical patent and copyright models coherently address the way intellectual creations behave has been discredited by its inability to deal adequately with the behavior of many commercially valuable, cutting edge intellectual creations" (p. 389). Watt (2005) demonstrated that intellectual property has grown beyond traditional concepts of production, and has thereby irrevocably altered economies; however, law and policy have not kept pace. Rather, new concepts or information are lumped together with existing concepts of property, according to Lemley (2005), generating problematic categories of intellectual property. The lineage of the language and concepts of property offer the best glimpse into alterations of the IP landscape.

Even the law and concepts of rights are ambiguous. Many rights are guaranteed by the United States Constitution. While property is among them, the definition and protections have changed over time.

> Perhaps change in viewing "property rights" under the Constitution is inevitable since the very philosophical concepts underlying "property rights," if they are not mutually conflicting, at least constitute a spectrum of relationships between the individual and the state which secures those rights. This spectrum inevitably reflects political ebb and flow. (Oakes, 1981, p. 583)

Initially, property rights and personal rights were parallel. Common conflations also included personal liberty with personal rights and property liberty with property rights as

well as conflating concepts of personal and property rights and liberties. Personal liberty became intimately linked with economic liberty and economic rights, muddying the waters further. However, subsequent amendments and court decisions, particularly after the United States Civil War, articulated clearly that personal rights superseded property rights. Oakes (1981), after the Bayh/Dole Act was passed the previous year, anticipated that this hierarchy would shift again to see personal rights and property rights as symbiotic. With the emergence of a knowledge economy, or Information Age, intellect has become a commodity or property; however, as intellect is also identity, the two become inextricably intertwined and mutually dependent.

Consequently, discussing the topic of intellectual property cannot be confined to concepts of actual physical property. An ever-changing concept of intellectual property demands research for the following reasons:

1. The determination of property as separate from identity is shifting increasingly toward a merged concept of intellectual property. However, this conflates concepts of personal rights and property rights. As this landscape shifts, property rights definitions must be examined.
2. Examination of the knowledge economy – Information Age concept migration is necessary to reframe concepts of rights to more accurately reflect the current economic reality and potential realities.
3. Differing and shifting concepts of products and economies forces consideration of the separation of work production and identity.
4. Specifically, intellectual property/personal rights produce policies, particularly within higher education, that create a conflict between these

rights and the perception of personal identity in an economic environment facilitated by intellect and ideas.

5. As courts refuse to define certain terms and phrases within the confines of intellectual property/personal rights litigation, it is obvious that the referential terms are struggling against new connotative meanings.

Intellectual Property as Property

Intellectual property is not a new concept, but rather, has evolved, rendered from a long standing history beginning in Venice from 1000 to 1500. The original purpose was to protect and control trade. The copying and sale of items protected was deemed theft. Through trade with France, then England, the concept of intellectual property protection spread. However, protection was not necessarily one of protecting one creator from another within their unified location, but rather to protect national production from international intrusion. Venice and France sought to protect their trades from intellectual theft and copying on an international level, rather than internally (Prager, 1944; David, 1993). France added its royal seal to products and processes, mandating national level protection in light of any infringement. To copy a marked product was punishable by death. In most situations, a unique mark was granted to an inventor for life, and perhaps beyond if granted to the guild or family of a creator or inventor. When an individual possessed a seal, it indicated that individual had a right to copy or create a protected item; producing copy rights or production rights. This put an author in control of produced materials rather than a printer or publisher, as had been customary to this point.

The first law of patents enacted (1474) was penned to quell a glut of reproduced books. The law required that only new materials could be copyrighted or patented.

Previously unprotected creations could not. Guilds emerged with approved marks for a range of products, creating the first trademarks. However, as the economy of Venice declined, many international onlookers blamed commercial protection for Venice's decline. The Catholic Church then became involved taking control of many elements of law and production and began to censor materials as well as nullify previously granted marks. This shift away from protection forced many to migrate to France which still espoused Venetian protection systems. However, France was also unstable. Large protected guilds emerging suddenly in France produced great stress between the French crown, seeking to protect international marks, and the French nobility, seeking to grow their economy to avoid a demise similar to the Venice markets. The nobility, consistently championing their local creators for a small portion of profit prevailed longer than the embattled guilds located in France. The system of locally protected creations overshadowing national level guilds created a system known as Mercantilism; protecting an innovation rather than the inventor. The protection, itself, followed an innovation; this became a commodity to be bought, sold, or managed (Prager, 1944).

The system of Mercantilism spread to England and through colonization to the United States. Language utilized within the United States Constitution brought about wide spread examination of property rights as the United States Congress threatened trade sanctions for property infringements. The U.S. Constitution was framed with a utilitarian approach. While altruistic, this idea is maintained even now. "According to utilitarian theory, copyright law provides the incentive of exclusive rights for a limited duration to authors to motivate them to create culturally valuable works" (Fromer, 2012, p. 1366). While the framers of the U.S. Constitution included language for protection of

property, and specifically intellectual property for the purposes of utilitarian propagation, the system is "remarkably resistant to rapid and radical reform" (David, 1993, p. 23). Justified in its original inclusion of words to protect scientific and artistic endeavors, the Constitution appears, through the lens of litigation, to serve more to protect and control creation of innovations – contraptions, as David termed them – than to avoid conflation with modern, much more complicated concepts of innovation.

It has become difficult to classify intellectual property rights as many people consider them economic rights, and others, property rights, and still more, increasingly in the West, personal rights, much like free speech. Howkins (2013) stated,

> The basis of intellectual property is a 'rights contract' between a right-owner and the public, which balances two principles; one, people deserve to be rewarded for their creative efforts and therefore should be able to restrict access and copying, and two, society as a whole benefits if works and inventions are put into public domain and made freely available. (p. 114)

It is becoming increasingly evident that traditional forms of protection of property have been facing an onslaught of new technology and development, and that current legal parameters and structures are insufficient to address the growth and complexity of new products. Technology is outpacing understanding and application of legal processes. "The technology is leading the race, with the users close behind, and the laws a distant third. It is much easier and more fun to make new software and media content than to make new law" (Howkins, 2013, p. 98).

Available literature surrounding intellectual property spans nearly every discipline. Identifying numerous specific laws necessary to understand subtle shifts in

case language, convoluted international economic shifts and structures, and historical leaps in technology accompanied by social and cultural paradigm shifts, make an exhaustive study of intellectual property most likely impossible. However, a limited study of shifts in legal, economic, social, cultural, and paradigm structures through a specific rhetorical lens, within a qualified sample over a short period of time may render an understanding of the advancing edge of the shifting categories and understanding of property, and specifically intellectual property, as our understanding of products moves away from contraptions and into a knowledge based economy.

Property Rights Conflation and Conflict

Contraptions, inventions, and creative works are often easily differentiated and commoditized. However, as David (1993) stated, "Knowledge may be viewed as a commodity, but it is not a commonplace commodity; it is highly differentiated and has no obvious natural units of measure" (p. 25). Difficulty identifying and measuring knowledge is paramount to the discussion of intellectual property as it merges understandings of public goods and personal rights. If public goods are those that are non-depletable and education has become a basic human right, then the question becomes are commodities of intellect a basic human right or a property right? As David (1993) argued once knowledge is acquired, it can be applied broadly and be utilized again and again without being depleted, growing in its utility. This definition places knowledge firmly in the category of public goods, excluding it from intellectual property laws. In a knowledge economy, David (1993) asserted: "There is no societal need to repeat the same discovery or invention because a piece of information can be used again and again without exhausting it" (p. 25). Similarly, through an economic lens, through public

education, knowledge becomes a "non-rival" good as the same information is possessed by everyone. The notion of knowledge as a non-rival good is complicated by original thought as Thomas Jefferson stated,

> If nature has made any one thing less susceptible than all others of exclusive property, it is the action of the thinking power called an idea, which an individual may exclusively possess as long as he keeps it to himself; but the moment it is divulged, it forces itself into the possession of everyone, and the receiver cannot dispossess himself of it. (Jefferson, 1813, para. 1)

Knowledge Economy

Intellectual property has historically been based on a product, a tangible thing. However, as society moves toward a knowledge based economy, intellectual property becomes increasingly difficult to define and navigate. Dubbed the creative class, the creative economy, and the knowledge economy, Howkins (2013) asserted, "The creative economy is the first economic system whose most valuable assets are people and their personal qualities of imagination and curiosity, their relationships, their intellectual property and their ability to make a fair deal" (p. 226). The knowledge economy model changes irrevocably the concept of property and decidedly intellectual property. Property as a tangible thing proves problematic. "The concept of a global, knowledge-based economy rests on the premise that wealth creation is shifting from a resource to a knowledge base" (Chartrand, 1996, p. 3). While ideas and knowledge have always been valuable, the transmission of knowledge has been relegated to educational institutions. Increasingly, knowledge and creativity have become a source of economic growth. As knowledge becomes the consumable product, the act of transmitting it renders previous

understanding of protections moot, impotent, as the sharing of that knowledge is the commoditization of the knowledge. One such example is the website *YouTube*. When a video is created, the creator receives credit. However, it is through ubiquitous sharing that the creator also receives monetary benefit. Oddly, it is not the consumer that pays for the consumption, but the media.

The internet has become the machinery of mass production of creativity. "Creativity and its business-like cousin innovation are the most interesting and most profitable areas of the economy and the presiding genius of the internet" (Howkins, 2013, p. vii). The internet has produced a ubiquity of information and knowledge, decreasing the need for personally embedded knowledge (acquired by education, or earning a degree). Instead, an individual merely needs the ability to find information and gain knowledge quickly. Fairclough (2010) suggested that the Information Age has changed society irrevocably into a "new way of working and learning, greater possibilities for economic globalization, and increasing social cohesion" (p. 470). Andersen and Rossi (2011) listed ways in which knowledge is transferred; "Knowledge transfer can take place either through 'open science' channels . . . , through direct collaborative relationships . . . , through employment-based channels . . . , and through the licensing or sale of university-owned patents" (p. 254). However, even these listed mechanisms are outdated as more and more knowledge is commoditized through subscription, file sharing, big data, and search engines. Economies have shifted as new concepts of value emerge. Howkins (2013) stated, "The evolution from hunting to farming, the growth of trade, manufacturing and services and the emergence of the information society: each new system required a new kind of capital" (p. 226).

What qualifies as knowledge in a knowledge based economy (Chartrand, 2012, p. 3)? Lane and Flagg (2010) outlined the stages of knowledge to commodity.

> Conceptual discoveries may become embodied in a tangible, yet provisional form – a proof of the concept's viability. This second state of knowledge is called invention. An invention is something not previously demonstrated to be possible in practice. A key attribute of invention is feasibility. Feasibility combines with novelty; however, the invention and discovery do not have to occur together. (Lane & Flagg, 2010, p. 3)

However, this definition or process is decidedly product or production based. Many knowledge economy constructs lack physical form and aren't considered products. Noble (2002) defined commoditized knowledge as:

> A set of skills or a body of information designed to be put to use, to become operational, only in a context determined by someone other than the trained person; in this context the assertion of self is not only counterproductive, it is subversive to the enterprise. Education is the exact opposite of training in that it entails not the disassociation but the utter integration of knowledge and the self, in a word, self-knowledge. Here knowledge is defined by and, in turn, helps to define, the self. Knowledge and the knowledgeable person are basically inseparable. (p. 27)

These two approaches, diametrically opposed, demonstrate the difficulty of categorizing knowledge as a commodity. The previous understanding of the dissemination of knowledge through education must also be reexamined as new structures of education are created daily.

Protecting product in a knowledge economy is difficult because rights are compartmentalized separate from a creator. Johns (2006) explained, "They tried to parcel up a stream of creative thought into a series of distinct claims, each of which is to constitute the basis of a separately owned monopoly. But the growth of human knowledge cannot be divided up into such sharply circumscribed phases" (p. 153). Chartrand (2012) echoed Thomas Jefferson's quotation,

> Furthermore, if someone gains knowledge it does not reduce the knowledge available to others. Essentially there are two ways of turning knowledge into property. The first is secrecy. The second is intellectual property legislation that creates abstract property rights such as copyrights, patents, registered industrial design, and trademarks. (p. 4)

Howkins (2013) agreed, "Creativity by itself has no economic value until it takes shape, means something and is embodied in a product that can be traded" (p. 5). Halbert (1996), though, disagreed and argued, "The only way we think about creative work is as private property" (p.) asserting that creative work carries innate value as well as ownership rights.

The manner in which a product of creativity is cultivated for value varies. To limit concepts of intellectual property protection excludes advances toward the new model of the knowledge economy, merely reframing exclusion rights (secrecy), and intellectual property categorization as it exists currently (legislation). This shift in understanding of property, value, and possession renders many legal arguments moot. Howkins (2013) demonstrated this shift, "The result is private property but it is property with a difference; it delivers ownership but it seldom guarantees or even offers possession. With physical

property we can say that possession is nine-tenths of the law, but with intellectual property relationship is nine-tenths of the law" (p. 82).

Knowledge capital, according to Howkins (2013) has two characteristics, "it results from creativity activity and its economic value is based on creativity" (p. 5). In other words, creativity is an integral part of the value of a commodity. Rather than separate a tangible thing from the creative process, it is this creative process that lends increased value to a tangible thing. Economic value is obtained when "another person or company has the means to take it further" (Howkins, 2013, p. 226). Taking a concept further is decidedly vague and specifically does not state a method of production or distribution. This thoughtful omission generates increased diversity of value. Often a warehouse or broker is needed to provide a menu approach to creative products. Universities frequently serve this function as the creative products of their constituents are often owned by the institutions, then leased by the institutions to entities that see economic value in the development of a creative product (Andersen & Rossi, 2011).

The current model of our economy and our understanding of product is based on product invention and was strained by the commodification of creativity. Value of a commodity is in its creation. The development of a creation is left to entities who see opportunity in varied approaches to production.

As our knowledge economy expands, new understanding of protection and rights must be developed. The idea, not the product, will require protection. Halbert (1996) envisioned great change for creativity protection stating,

> Privatization of information and ideas will only become more expansive, because no incentives exist to alter the system in favor of more equitable access or

> freedom of information. New technology can transform the way information and creative work is owned, made, and exchanged. (p. 149)

The division between economic and moral or social value has produced increased tension. Over time, creator credit, rights to revenue, and rights of production and exclusion have become more distinct, separate, with varying forms of commoditization. "If intellectual property rights can induce agents to produce knowledge, it is because this institutional structure can enable them to get a part of the social value they creative by producing knowledge" (Moroz, 2005, p. 307). Currently, value of an intellectual product lies in recognition of knowledge as a product resulting in financial benefits that are still sporadic and nebulous. However, cases such as Napster, where files were shared from individual to individual, present contrary evidence. It would appear that through this example, now labeled piracy by the court, monetary value for creativity can indeed be assessed, policed, and controlled.

Third party claims, or holders, of intellectual property further complicate the issue and discussion of intellectual property in a knowledge economy. Since the Bayh-Dole Act of 1980, many higher education institutions enacted intellectual property policies, claiming rights to faculty, staff, student, and researcher intellectual property. Faculty and students can rely on their institutions to research, file, and protect patents which can be a costly endeavor. Conversely, some have questioned the validity of such policies and the impact IP policies have on IP generation. Increasingly, a loosely defined intellectual product is claimed not by its creator, but by another entity for a variety of reasons (e.g., work for hire). "Work for hire refers to any work generated as a normal part of an employee's job, but the protection extends to independent contractors, too" (Filipczak,

1992, p. 71). Intellectual property policies of various institutions form a link between creator, holder, and government granted protection. Employees in higher education institutions function as stable IP creators, in most instances gaining only authorship credit as the primary ownership of intellectual property is held by their institutions. This example illustrates a knowledge economy factory approach; employees are "creators of" and "machinery in" creation of new knowledge. Higher education institutions have attempted to remain in the knowledge creation business: however, continue to utilize outmoded models of intellectual property protection and dissemination, struggling against an incoming tide of new definitions of product in an evolving knowledge economy.

Research Questions

There have been a great many new terms in modern society: knowledge economy, creative class, intellectual property, and proof of concept. It cannot be denied that a shift in creation, production, and consumption has been occurring. Further examination of this shift would prove beneficial, not only for institutions that create knowledge, but for society in general to broadly begin to understand this disruption in constructs of our economy. The electronic, digital, knowledge economy age promises to flip, again, our economy paradigm to one of mass intellectual property creation vetted through unregulated internet mediums. Power constructs vested in information creation and distribution such as higher education stand on the edge of an age altering paradigm shift. Power structures and relationships may reveal much about the formulation of this inevitable shift. The shift will determine individual, community, and economic identity for the age to come.

Therefore, the question must be asked and examined: Utilizing critical discourse analysis, what does the rhetoric of higher education intellectual property policies reveal about the existing understanding of intellectual property on the cusp of new economic models as well as power and relationships with higher education and the knowledge economy?

The research proposed will examine intellectual property policies' varying rhetoric as well as policy rhetoric evolution to include or exclude stakeholders. The research will be guided by four research questions:

1. What is the intellectual property framework in the United States and in higher education?
2. What role does higher education play in the intellectual property discussion?
3. How do intellectual property ownership policies alter relationships and productivity within higher education?
4. How does the rhetoric of these policies demonstrate relationships?

While many intellectual property policies have been examined through a legal lens, rhetorical implications of these policies have not been examined. It is important to examine these policies rhetorically, as it reveals relationships and constructs previously unexplored. A legal exploration of policy renders limited information (including predominantly discussions on benchmarks, milestones, measurements, and contracts). Courts are reticent to define terms which might for many institutions effect semantics and limit enforceability. However, what might be more revealing is an examination of relationships these policies establish and restrictions or limitations placed on those

relationships as a result of a policy. Similarly, roles and concepts of identity may be altered by policies.

CHAPTER II

THEORETICAL ANCHORS AND ADJUSTMENTS

Epistemology

Epistemology is a metacognitive construction of understanding. Epistemology provides the lens through which everything is examined and understood. For example, humans understand gravity as a condition of existence, a natural state. However, this changed when humans began to explore space and understood that gravity was a force created through mass. This shift in epistemology forever altered the understanding of gravity. Epistemology provides the framework from which questions may be asked to further understanding. From epistemology, many understandings may be grouped by similar traits; forming theories. Theories are organizational structures of thoughts and ideas. Muller and Craig (2007) asserted, "Theories are not just intellectual abstractions; they are ways of thinking and talking that arise from different interests, and they are useful for addressing different kinds of practical problems" (pp. ix-x). Typically, theories are epistemological constructs that allow for conversations on knowledge and systems of understanding. Questions on the nature of knowledge and how a thing can be known or explored (a theory) emerge from a place already firmly planted in conceptual understanding of order and sense. It is useful to examine theoretical constructs because theoretical constructs used in a particular research project can help determine the methodology in which a question or problem should be examined, categorized, and

addressed. Understanding a theoretical construct used to examine a question aids in understanding the question, and thereby a fuller understanding of potential answers. However, a universal understanding of theory does not exist as theories are constantly changing as is epistemology.

Ontology

Ontology has been defined as "a branch of metaphysics concerned with the nature and relations of being" or "a particular theory about the nature of being or the kinds of things that have existence" (Ontology, n.d., para. 1). Many scholars organize theories in different ways, creating different constructs and organizational strategies which influence the manner in which questions are asked and answered; providing an ontological construct through which questions are examined. It has been widely discussed that communication is not seated within a single theoretical structure, but hung on several structures. Craig (1999) stated, "Communication theory as an identifiable field of study does not yet exist" (p. 119). However, to establish communication as a field of study, a science, a system of analysis or perspective, must be established; a common element of understanding must be present. Epistemological and ontological elements of communication must be established in order to more fully understand questions. These commonly held elements of understanding comprise theory, compose theory, conflate theory, and contravene theory.

Kuhn (1970) defined "normal science" as "research firmly based upon one or more past scientific achievements, achievements that some particular scientific community acknowledges for a time as supplying the foundation for its further practice" (p. 10). Results of research that are widely accepted and utilized become our theories and

are stored in textbooks. Therefore, past research and scientific discovery lays the groundwork for future study and perspective. This definition brings up the question: Does past research dictate future outcomes? If similar tools and approaches are consistently utilized, it would seem that similar answers would always be garnered.

Communication Theory

Mattelart and Mattelart (1995/1998) stated this about communication: "Situated at the crossroads of several disciplines, communication processes have aroused the interest of sciences as diverse as philosophy, history, geography, psychology, sociology, ethnology, economics, political science, biology, cybernetics and the cognitive sciences" (p. 1). Mattelart and Mattelart assembled the constructs, schools, and theories of communication into a historically linear examination, demonstrating the evolution of communication thought. However, this organization, while establishing the lineage of many concepts, fails to connect many constructs, adhering to a timeline rather than a topical grouping or a more generalizable model.

Nastasia and Rakow (2010) offer another view of communication theory constructs and affiliations utilizing an epistemological approach as either puzzle making or puzzle solving. The puzzle as the metaphor allows for an examination and understanding of beliefs about the nature of reality. The puzzle metaphor establishes a single question as the point of origin; is there an ideal which is used as reference or is there a new understanding being created? Puzzle solving is examining artifacts in light of perceived truth and attempting to recreate that image through scholarly work and mental endeavors. Puzzle making is creating the puzzle but rather not to some perceived ideal. Without an ideal or truth for the establishment of referential meaning, language is the

only tool with which meaning can be constructed. Utilizing puzzle solving implies following strict constructs or models in order to determine classifications within existing theories. Puzzle making implies the exploration of concepts in order to make sense of those concepts then constructing meaning solely from that information, that language. While Natasia and Rakow (2010) seek to examine and establish an understanding of theory epistemologically, many methods of theory organization focus on function. This conversation about the construct or groupings of concepts based on application and function is what Craig (1999) called a meta-discursive construct in order to detail and discuss the interdisciplinary aspects of theory. "Communication theory, in this view, is a coherent field of metadiscursive practice, a field of discourse about discourse with implications for the practice of communication" (Craig, 1999, p. 120). Communication is inherently interdisciplinary. However, it must be stated that communication is not a subsequent area of study or theory, but a primary field of study. Craig (1999) continued, "Communication, from a communicational perspective, is not a secondary phenomenon that can be explained by antecedent psychological, sociological, cultural, or economic factors; rather, communication itself is the primary, constitutive social process that explains all these other factors" (p. 126). Consequently, without communication theory and analysis, many other disciplines would have no artifact from which to construct analysis. Communication is what provides an epistemological artifact from which the question can be asked: What can be known? From that position, the artifact produces an ontological perspective, fueling questions to move understanding forward. Communication is a formative meta-discursive analysis of phenomenon. Taylor (1992)

agreed that communication theory offers a way to discuss and examine not only language, but constructs resulting in practical interdisciplinary uses of meta-discourse.

While communication theory may be the root of many other disciplines, theoretical categorization of communication remains difficult. Craig and Muller (2007) provided a framework upon which they have grouped theories into a seven category meta-discursive construct. These seven categories or traditions are: Rhetorical, Semiotic, Phenomenological, Cybernetic, Sociopsychological, Sociocultural, and Critical. Craig and Muller (2007) outlined these traditions. The seven traditions categorization does not exclude one for another; often two or more traditions are combined for the purposes of analysis. While each tradition provides categorical strengths, each also constructs limitations. In those cases, certain conflicts of construction must be considered and overcome.

A summary view of the seven traditions or categories of communication theory reveals an epistemological lens perspective; this framework is an attempt to categorize new concepts and constructs through existing understanding, thereby limiting potential divergent understanding and new theory development.

- First, Rhetorical is the practical art of discourse. The study of rhetoric begins with Aristotle's texts. Aristotle categorized orations offering modes of persuasion as well as canons of analysis. Rhetoric often examines the methods of communication such as strategy, audience, as well as emotion and logic toward message improvement.

  A Rhetorical tradition approach offers strength through common understanding; however, participants must first have a voice to be examined.

Without agency to produce rhetoric, examination is impossible. Individuals or groups without a voice cannot produce an artifact for examination; unless it is subjectively viewed, interpreted, and translated by an outlier looking in.

- A Semiotic tradition approach can produce rich and sometimes divergent understandings of signs and symbols; however, it is exactly the divergence that can produce a convoluted understanding of the artifact. How the artifact is viewed determines its understanding. Semiotic is an inter-subjective mediation by signs. Signs are constructs of language to create meaning. Semiotics if often most evident through miscommunications or misunderstandings. Semiotics involves common language while uncovering layers of meanings both connotative and denotative.
- A Phenomenological tradition approach translates into making the familiar strange, or examining an artifact as if for the first time and determining inception, cultivation, and meaning. However, without significant human interaction and sustained relationships, determining the development of understanding is complicated. Rather than examining text and definitions, surrounding influences and implications also offer insights into meaning.
- A Cybernetic tradition approach allows for a detailed examination of origin and multimodal content. However, a digital construction also comes with information overload, source masking, channel noise, and systems difficulties that impede the message. The focus is not necessarily on the meaning of the communication, but on the value of the information.

- A Sociopsychological tradition approach includes examinations of nonverbal content and other human condition content such as emotions and personality. However, use of this perspective requires a pre-test and post-test system of manipulation to measure meaning, which can, consequently, alter understanding. Sociopsychological emphasizes expression, interaction, and influence. Elements such as behavior, perception, and attitude are examined as they can be altered through communication. This is the pre-test post-test element examining efficacy.
- A Sociocultural tradition approach examines social constructs through ritual or rules. Conversely, underrepresented populations and masked or hidden countercultures often escape examination. Similarly, understanding the diverse facets of conflict proves difficult as social conventions often dictate passive conflict engagement, obscuring the message and social construct. While communication has direct meaning and behavior implications, sociocultural constructs also illuminate unintended effects in light of individual agency.
- A Critical tradition approach examines a dialogue or dialectic sample. Consequently, this approach includes hegemonic populations, mainstream messages, and institutional perspectives negating richer multifaceted conversations. Critical analysis often depends on shared understanding and indicates elements such as power distance, oppression, resistance, and compliance. (Craig & Muller, 2007)

Communication research provides insight or truth-seeking into a phenomenon which facilitates the subsequent examination of psychological, sociological, cultural, and economic factors inherent in that phenomenon. The examination of communication instances informs other concepts, understanding, and constructs. This informing process occurs in the manner of what "things" are called or named. In the naming process, an understanding is constructed, and in this way, communication forms reality.

Muller and Craig (2007) placed Carey (1989) within the sociocultural tradition. Carey (1989) wrote the formative work on communication creation and maintenance of culture relating mainly two areas of theoretical constructs for communication: transmission and ritual. Carey asserted that through this creation of symbols, reality is "produced, maintained, repaired, and transformed" (p. 23). Many subsequent authors agreed, creating a sociocultural meta-discourse theoretical construct surrounding the communication construction of reality. Altheide (1996) stated that "culture is difficult to study because its most significant features are subtle, taken for granted, and enacted in everyday life routines" (p. 2). However, communication as a discipline has remained separate and distinct from literature or anthropology, while embracing many of the elements and constructs created by those disciplines. "In conceptualizing communication, we construct, in effect, a 'communicational' perspective on social reality and so define the scope and purpose of a communication discipline distinct from other social disciplines" (Craig, 1999, p. 124). Meta-discursive elements combined with interdisciplinary necessity creates a perpetual cycle of creation and analysis. In light of Nastasia and Rakow's (2010) ideas, this is the puzzle making portion of communication.

Therefore, through communication, authors create a puzzle or alter a puzzle, simultaneously creating meaning or altering meaning.

Craig (1999) stated, "Communication theories help to create the very phenomena that they purport to explain" (p. 125). This cyclical analysis of communication is perhaps best understood through a particular theory that also functions as a method of analysis while serving as the meta-discursive approach to both theory and content: grounded theory.

Praxis

In view of the varying theoretical perspectives, from a linear time construct review (Mattelart & Mattelart, 1995/1998) to a functional philosophical grouping approach (Craig, 1999), to a research process perspective (Nastasia & Rakow, 2010), it is clear that a singular approach to theory is not possible. Two processes of practical examination of theory allow both ontology and epistemology to be considered. These practical examination tools (or praxes) produce systems of analysis. Praxis may be referred to as a "custom or established practice" (Praxis, 2016, Item 4). In philosophy, praxis is more like a process, "the synthesis of theory and practice, without presuming the primacy of either" (Praxis, 2016, Item 3).

Deduction and induction are two praxes that provide two separate methods for examining the manner in which evidence is linked. Deduction, as a process, begins with a broader theoretical perspective followed by an examination of smaller components associated with the broader theory. The process of induction gathers smaller components, attempting to create broader associations and theories. The deductive construct stemming from theory to examination of artifact within those confines toward revelation results in a

limited view. This deductive paradigm critiqued by Kuhn (1970) and Glaser and Strauss (1967/1999) is countered by an inductive approach. Glaser and Strauss "proposed an inductive strategy whereby the researcher discovers concepts and hypotheses through constant comparative analysis" which Glaser and Strauss called grounded theory (Glesne, 2011, p. 35).

Grounded theory allows a researcher to explore an artifact and allows a working theory to emerge, while constant comparison provides linkage to existing theory. Despite the title of grounded theory, this approach "does not refer to any particular *level* of theory, but to theory that is inductively developed during a study" (Maxwell, 2005, p. 42). Craig (1999) agreed stating,

> Because communication is already so much talked about in society, communication theory can be constructed inductively through critical studies of everyday practice, in part by transcribing and theoretically reconstructing the "situated ideals" articulated by people themselves in their everyday metadiscourse. (p. 130)

Communication research provides the platform for understanding the creation and maintenance of social constructs. "It is because documents provide another way to focus on yet another consideration of social life – emergence – that they are helpful in understanding the process of social life" (Altheide, 1996, p. 10). By both collecting data and maintaining a comparative reference to existing theories, a grounded theory approach to data analysis allows the data to determine the theory, rather than the theory to determine the lens through which data is viewed. Craig and Tracy (2014) offered a tri-level conceptual structure for analysis of data in a grounded theory approach to research:

(a) analysis on a problem level, (b) analysis on a technical level, and (c) analysis on a philosophical level. "In line with this philosophical position, grounded practical theory is a meta-theoretical and methodological framework for developing theories designed to inform reflective thinking and deliberation about particular communication practices" (Craig & Tracy, 2014, p. 231-232).

Grounded Practical Theory

Grounded theory (Glaser & Strauss, 1967/1999) provides the foundational elements for many areas of research. Adopted by Craig and Tracy (2014) with the addition of a single word, grounded practical theory (GPT) is a meta-discursive, meta-theoretical, methodological framework. GPT is grounded "in the actual data collected, in contrast to theory that is developed conceptually and then simply tested against empirical data" (Maxwell, 2005, p. 43). Through GPT, both existing theory and the outgrowth provide necessary insight for understanding and, according to Maxwell (2005), are equally valuable and should be utilized referentially and reflexively. However, Craig and Tracy (2014) warned that philosophical theories . . .

> . . . do a good job of advancing normative arguments about how communicators ought to conduct themselves, but these theories are usually based on conceptual analysis and principle based argument and may fail to address problems that are actually encountered in practice. (p. 233)

Craig and Tracy (2014) related GPT to Fairclough's (2010) critical discourse analysis (CDA). The relationship between GPT and CDA focuses on the functions of the

two constructs (GPT and CDA). GPT allows for analysis without construct, waiting instead for a dominant theme and theory to emerge. CDA assumes a structure of power and control as a construct of communication innate within the communication. Utilizing both GPT and CDA provides a construct allowing the underlying elements of power and allowing the resulting social construct to emerge through document examination. Altheide (1996) discussed this crossroad: "We use documents to help us understand the process and meaning of social activities. This is very significant in organizations for workers who can use documents as a resource" (p. 10).

Communication or Rhetorical Analysis is an ancient practice formulated formally by Aristotle. While Aristotle offered a widely accepted and foundational analysis of communication, Fairclough (2010) has offered a more modern relational discussion stating discourse is ideological and relative to structures, conversation, edicts, politics, economics and vocabularies. These constructs and relationships are based on Aristotle's foundations of rhetorical analysis. Fairclough (2010) outlined three elements to examine in discourse analysis:

1. language as text,
2. discourse practices (production, distribution, and consumption of text), and
3. sociocultural practices or conventions.

When GPT and CDA are combined, the relationships constructed, the underlying power distance, as well as the nature of the relationship can be discovered.

While GPT examines artifacts and compares them to each other to determine themes, CDA examines artifacts against other comparative elements such as definitions, common understandings, and previous usages. Themes and usage are examined as intent

and motivation may be unknowable. It is only the communication that can be examined. Brown and Yule (1983) suggested the rationale of an author is based upon a unique view of the world and, therefore, may be unknowable. Similarly, a recipient carries a unique interpretation of a text, based on their perception of the world and perhaps different concepts of the world. Therefore, only referential elements provide moorings for understanding. Previously understood usage and common references provides a starting point for analysis. Rogers (2011) clarified, "Discourse studies provide a particular way of conceptualizing interactions that is compatible with sociocultural perspectives. . . . A shared assumption is that discourse can be understood as a multimodal social practice" (p. 1). Common understandings, established confines, and structures must be utilized first as they contain the amalgam of constructed understanding; providing a starting point for exploration.

Fairclough's (2010) approach has not required research to examine common discourse practices as well as relationships that would instigate invention. Grounded Practical Theory may provide insight into the impetus of creation or invention of new sociocultural communication constructs. Similarly, Fairclough (2010) would wonder if a text adheres to common discourse practices or if in fact it varies from expected paths. However, Margolin and Monge (2013) added that "When definitions are ambiguous or many concepts might apply, background knowledge is used to judge the relevance of different features of the situation to decide which concepts are most appropriate" (p. 6). Fairclough's (2010) questions also forced examination of a text's relationship to other texts as well as what new or altered social interactions such relationships between texts may precipitate. Fairclough (2010) and previously Altheide (1996) argued that every

discourse, every communication, is an exercise in meaning making. Meaning making is born of definitions and cultural understandings of language used. Complex meaning is not necessarily constructed immediately.

> Interest is not primarily in the immediate impact of messages on some audience member, but rather two aspects of the document: (a) the document process, context, and significance and (b) how the document helps define the situation and clarify meaning for the audience member. (Altheide, 1996, p. 12)

Analysis of Policy

Rhetorical analysis of policy is a relatively new area of research. Saarinen (2008) pointed out that research utilizing text and discourse analysis to examine policy are "strikingly rare" (p. 719). Saarinen continued and warned that there are two mistakes often made in this form of research: first, documents are seen to exist in the broader world, and they are dismissed as "mere rhetoric" which implies there is no action that precipitates from a policy. There are actions of cultural conformity, compliance, and implementation that accompany policy creation and analysis. "Policies are textual interventions into practice" (Ball, 1993, p. 4) or actions of institutions to create social constructs and actions.

Winton (2013) provided a necessary link between rhetoric and policy stating, "Policy problems, like the social world, are viewed by critical policy analysts not as objective problems but as social constructions, with language playing a central role in production and promoting the construction" (p. 161). Winton (2013) asserted that, "Policy from a critical perspective understands policy as much more than these texts; it

also includes individuals, groups, practices, events, ideas, power, struggles, and compromise" (p. 161). Taylor (2004) presented a similar perspective:

> Critical discourse analysis then, aims to explore the relationship between discursive practices, events and texts, and under social and cultural structures, relations, and processes. Critical discourse analysis explores how texts construct representations of the world, social relationships and social identities, and there is an emphasis on highlighting how such practices and texts are ideologically shaped by relations of power. (p. 4)

The key differentiation between discourse analysis and critical discourse analysis is the acknowledgement of power as a dominant construct within the text. "Critical approaches to discourse analysis recognize that inquiry into meaning making is always also an exploration into power" (Rogers, 2011, p. 1). It stands to reason that a discourse analysis of policy, created by institutions to guide, direct, curtail, and alter behavior could reveal elements of institutional control and therein, power. A critical discourse analysis of policy is an analysis of the role of power in a singular element of institutional culture.

Policies Are Social Constructs

Policies inherently limit action, comments, and questions, and increase conflict by the nature of their being policies. Winton (2013) stated,

> Policy rhetoric may be powerful since it affects how individuals understand the world and aims to move audiences to action. This action may include persuading audiences to accept constructions of reality and truth as well as causes of action that perpetuate inequity. (p. 163)

Considine (2005) agreed and stated, “The hallmark of this account is the relationship between power and knowledge. Because knowledge is seen as always constructed through the history of institutions, no objective claims of truth or validity can be trusted” (pp. 53-54). In other words, by the nature of policy construction, existence, and conversation, constituents naturally curtail creativity within the confines of a policy; and the status quo is perpetuated not only in action, but in conversation unless a substantial force is acted upon the policy. Winton (2013) added, “Policy texts, as discourse, limit what can be said and thought in policy discussion” (p. 162). Winton (2013) viewed policies as much more than guidelines for constituents, but rather as the manner in which the status quo is perpetuated. “Critical education policy research aims to challenge inequalities by understanding the role policies play in perpetuating them” (Winton, 2013, p. 161). Fairclough (2010) indicated that even critical examination of policy results in what can be viewed as rebellious and challenging behavior. “By c
hange in discoursal events, I mean innovation or creativity which in the same way goes against convention and expectations” (Fairclough, 2010, p. 78).

The context in which a policy is created becomes a frame, a guiding element, an indelible part of the message imparted. Altheide (2000) stated, “The ecology of communication refers to the communication process in context. There are three dimensions to the ecology of communication, 1) an information technology, 2) communication format, and 3) a social activity” (p. 290). This qualitative document analysis approach specifically addresses not document technology, but information technology. The manner of dissemination of information is important as a part of the

analysis of a text. Fairclough (1992) formulated this approach at the birth of technology for mass consumption. Fairclough (1992) understood . . .

> . . . textual analysis to necessarily involve analysis of the form or organization of texts – of what one might call, their texture. This is not simply analysis of form as opposed to analysis of content or meaning; I would argue that one cannot properly analyze content without simultaneously analyzing form, because contents are always necessarily realized in forms. (p. 194)

Fairclough (1992) also provided a caution that along with linguistic analysis, intertextual analysis is a natural complement that "language is widely misperceived as transparent, so that the social and ideological work that language does in producing, reproducing, or transforming social structures, relations and identities is routinely overlooked" (p. 211).

A Contract, A Relationship

It is often stated that policies are created to protect institutional interests and those of their constituents. It must be considered that a policy itself represents a relationship; a text is a social element, a conversation, a guideline, a series of lines that are created to confine and control. Edwards and Nicoll (2001) argued that "text is highly context sensitive" (p. ??) indicating that the surrounding social elements, the constructs of placement, are as important as the text itself. Throgmorton (1991) established that policy represents a very real social construct. Policies often construct a hierarchical structure, a process, a chain of command. This social structure imposes a network, a spatial understanding or relationship, in other words; a pecking order. Richardson and Jensen (2003) agreed and asserted, "We need to conceptualize social-spatial relations in terms of their practical workings and their symbolic meaning" (p. 7). The existence of a policy

creates a social space, a place of meaningful interaction, that may not be geographic, but rather symbolic. Richardson and Jenson (2003) constructed an understanding of policy as "creating an institutional environment with real and symbolic meaning" where "social agents are using more or less fixed notions of a spatial hierarchy of nested places in order to navigate reality" (p. 13). This is abundantly clear when technology and networking through technology is considered. While the cloud space constructed may not be geographically real, it nonetheless constructs a space where information is held, exchanged, negotiated, constructed, and indeed, owned. Edwards and Nicoll (2001) continued that policy "pays attention to power and injustice" (p. ??) and more often serves to protect institutional interests and broadly, those of their constituents. However, Edwards and Nicoll (2001) also argued that an audience is largely constructed by policy as much as guided by policy. The definitions of constituents within a policy serve as constituent's monikers, titles, and are meant to indicate roles and responsibilities as much as participants. Edwards and Nicoll continued,

> Rhetorical analysis directs attention to how policies construct policy problems, their audiences, and individuals and circumstances the policies aim to affect. This knowledge can help researchers understand how some policies, even those claiming social justice goals, perpetuate the status quo. (p. 173)

Institutional management utilizes communication to construct appropriate pathways for innovation cultivation and management. "Management scholars emphasize the role of language in organizational culture. Rhetoric is what sustains the rituals that characterize organizations and distinguish their identities. Language draws in and perpetuates a view of reality" (Hartelius & Browning, 2008, p. 23).

As institutions analyze and create policy, interests of constituents must be taken into consideration. Institutions must protect not only institutions, but guide and protect individuals who serve the institutions as well. Edwards and Nicoll (2001) stated, "An important contribution of rhetorical analysis is the potential to democratize policy processes" (p. 174). This implies a multi voice, a multi audience approach to policy creation not typically utilized by institutions.

Policy Creation and Policy Analysis as a Discipline

Much of the scholarly work on policy has examined policy creation and implementation. An examination of the need for policy creation as a problem solution is not new. Marx (1973/1993), in his book titled *Grundrisse*, stated that production in any form creates the necessity for policing or policy. Policy creation becomes a necessity to prevent conflict and guide behaviors, according to Marx, as it specifically relates to property and power. Policies are created as a form of problem solving. Whether the process of problem solving is reactive or proactive, policy creation is a vehicle for control. Agreeing, Weaver-Hightower (2008) stated,

> Policies are . . . inherently political [and] . . . are (a) crucial in their physical and graphic form as well as in their textual content; (b) multidimensional, with many stakeholders; (c) value laden; (d) intricately tied to other policies and institutions; (e) never straightforward in implementation; and (f) rife with intended and unintended consequences. (p. 153)

Weaver-Hightower (2008) presented a concept of policy ecology similar to natural ecologies where as a new policy is presented it inherently alters the landscape. Priorities

are shuffled and reordered while behaviors are altered slowly through an informative process. The process of creating policies largely depends on the entity enacting the policy. However, the value based process of creating the policy, regardless of institution navigation remains similar.

Patton and Sawicki (1993) delineated a process in more detail producing a six step process of backward problem solving. Weimer and Vining (2005) took a similar approach, but focused first on a needs analysis. While governments often utilize a system of leveraging populations and political power, other institutions may use other means or lenses such as a business model to manage employee populations and culture. Approaching policy creation by first examining needs is decidedly a business approach, a production approach. Continuing this business approach to policy creation, Stokey and Zeckhauser (1978) stated that it is a benefit and cost analysis system that utilizes a backward problem solving strategy of producing desired outcomes, then creating standards, guidelines, and policies to create those outcomes. Considine (2005) and Bardach (2009) are more broadly followed for policy creation and analysis. Bardach (2009) utilized an eightfold path decidedly for policy creation and not effect. Considine's approach and Bardach's approach examine critically the creation of policy; many more approaches to problem solving also incorporate policy analysis, adjustment, and maintenance. The process of ideal outcomes in reverse engineering dominates the field of policy creation and analysis all incorporating a decidedly business approach.

Policy analysis has long been the responsibility of public entities and government. Theodoulou and Cahn (1995) and Irwin (2003) argued that policy analysis begins with defining a problem and becomes largely cyclical as policies are created, then reexamined

against benchmarks and efficacy standards for adjustment. Irwin (2003) also stated that while analysis can be iterative, it is predominantly cyclical. "In the traditional view, solving educational problems requires finding the one likely solution on which to base policy, then using the resulting policy as a lever for predictable and efficient changes" (Weaver-Hightower, 2008, p. 153).

Policy creation and analysis cannot guarantee compliance. Institutions must either incentivize compliance or punish noncompliance. Policy creation and analysis includes developing a system of rules; policies that communicate and through compliance that alter behaviors and structures and create desired outcomes. Failure to gain compliance generates reevaluation of the policy process. Institutions attempt to gain compliance through a variety of means. Behavior, steeped in policy understanding, and compliance can become part of the culture of successful participation. Conformity becomes the goal along with institutionally desirable outcomes such as efficiency. Policies become ingrained in institutional culture, "relatively stable discourse formations may achieve hegemonic status in that the ideology and power relations that underpin them become so pervasive that they are perceived as common sense and therefore legitimate" (Motion & Leitch, 2009, p. 1047). Fairclough (1995) asserted that communication in text, in policy, produces an orderliness and naturalization of behavior. As policy is discussed and legitimated within institutional culture, the manner in which it is discussed produces a rhetorical construct of justification and protection. Motion and Leitch (2009) continued to discuss a continuing cyclical process of policy incorporation, analysis, and change stating that first a policy is normalized, then authorized, then rationalized, then moralized, then narrativized.

Policies are social constructions facilitating mutual understanding typically surrounding process. Considine (2005) stated, "Policy helps define the things a community holds to be important, including rights to work and own property, rights to organize and the capacity of citizens to be informed and involved in decisions which are important" (p. 16). Marx (1973/1993) combined intimately social construct, production, and policy. Where there is communal property there is community; where there is private property, there is regulation. Companies create policies to change, create, or guide actions or behaviors of employees, trade relations, and even customers. Institutions such as schools and universities use policies as contracts, mandates, and similar to all other institutions which use policies, as a way to create, manage, change, and guide actions and behaviors. People create policies to guide action in an individual abdicated manner. In essence, it can be said controlling individuals within an institution create policies to give that institution a voice and a singularity of action. Policies are a form of communication; the internal mechanism for guidance and action.

CHAPTER III

METHODS

Fairclough's Three Prong Critical Discourse Analysis

How might a rhetorical analysis of policies be conducted? "Critical discourse analysis . . . aims to explore the relationships between discursive practices, events, and texts; and wider social and cultural structures, relations and processes" (Taylor, 2004, p. 435). Taylor stated that "CDA is particularly appropriate for critical policy analysis because it allows a detailed investigation of the relationship of language to other social processes, and of how language works within power relations" (p. 235). For purposes of this research, critical discourse analysis also involved document analysis. Altheide (2000) argued:

> Qualitative document analysis involves emergent coding, that is, the identification of relevant terms and topics upon reviewing a number of items, and theoretical sampling of documents from electronic information bases, development of a protocol for more systematic analysis, and then constant comparisons to clarify themes, frames, and discourse. (p. 291)

In order to systematically examine an artifact for this research, Fairclough's (2010) three dimensions of critical discourse analysis provided the process for discovery and description. Taylor (2004) supported Fairclough's concepts and approaches stating, "Fairclough (2001a) argues that language has become more important in a range of social

processes related in particular to the emergence of the 'knowledge based economy' and new communication technologies" (p. 433). Similarly, Blommaert and Bulcaen (2000) argued that Fairclough's approach to critical discourse analysis has revealed obscured power structures within modern society and organizations. Therefore, Fairclough's (2010) three elements were ideally suited for this examination.

Fairclough (2010) defined three dimensions to critical discourse analysis. These dimensions are: language as text, discourse as practice, and language and discourse as sociocultural practice. These three interactive elements provided an ideal construct for this study when coupled with another Fairclough (2010) construct, technologization, which is the use of technology to distribute policy and information. Technologization abdicates individuals from a process and lays a process, policy, and practice on a nebulous entity, unapproachable by individuals, firmly establishing a power distance.

For this study, policies of 11 entrepreneurship institutions in higher education were examined. These specific institutions were deeply invested in innovation and IP by their mandates and ranked as top entrepreneurship institutions in 2015 (Princeton Review Staff, 2016).

Language as Text

First, policy language was examined to establish common definitions of terms, comparative to common usage. The "language as text" element examines choices and patterns in vocabulary, grammar, cohesion, and structure. This element of language as text was also explored from other perspectives such as legal references from the common legal text "Words and Phrases" and policy creation perspectives from commonly utilized policy creation texts. Fairclough (2010) expounded,

> Two elements of discourse are relevant here; discourse in an abstract sense as a category which designates the broadly semiotic elements of social life. I prefer to use the term semiosis to avoid the common confusion of the sense of discourse with the second, which I retain: discourse as a count noun, as a category for designating particular ways of representing particular aspects of social life. (p. 453)

Consequently, semiosis relates to the social constructs of discourse as well as the denotative meanings of words and phrases. Semiosis dictates the manner in which words and phrases are used. Semiosis depicts social constructions within communities whether that community be personal, institutional, organizational, or social. Semiosis also reveals connotative illustrations, constructed meaning. The construct itself reveals much about relationships within communities. Finally, semiosis also reveals identities through selected titles and hierarchies.

Discourse as Practice

Second, language and discourse were examined from a procedural perspective, revealing how policies are enacted as practice. Questions such as how was the text produced, circulated, distributed, or consumed are paramount in this segment of Fairclough's model. Fairclough's (2010) technologization, or use of technology for distribution, creates a radiation of authorless power in policy as it comes from no single person, but from an institution, and reaches everyone and yet no one through technology. The use of technology to distribute policy produces a layering effect thereby distancing authors from implementation. Fairclough (2010) stated:

> Technologization of discourse is a process of intervention in the sphere of discourse practice with the objective of constructing a new hegemony in the order of discourse of the institution or organization concerned, as part of a more general struggle to impose restructured hegemonies in institutional practices and culture. (p. 201)

Through this concept, Fairclough brings attention to authorship of policies intentionally obscured and reinforced by hegemonic language and context. Fairclough's examination of technologization included a discussion on the standardization of texts that attempts to normalize these practices. Consequently, the second step in this analysis involved an examination of procedures illustrated within technologized texts to include standard language, placement, and context.

Language and Discourse as Sociocultural Practice

Finally, policy texts were examined in context of their surrounding language and location within the overall policy construct to reveal their sociocultural placement, the framing elements of a policy such as human resources, facilities, or research categorization. The text was also examined against hegemonies or similar texts and the larger dynamic of the text whether it be to achieve normalcy or attempt control. Through this analysis, structures of normalization and hegemony may be revealed. The overarching theme of technologization reveals abdicated elements of power and control, the relationship of a personless entity and its constituents. Althiede's (2000) ecology of communication: (a) information technology, (b) communication format, and (c) social activity, further informed this final element of Fairclough's (2010) approach. Fairclough discussed how conventions of discourse become hegemonic, legitimizing relations of

domination. As more institutions adopt similar language and constructs for policy and discourse, legitimation of power and policy increases, essentially negating constituent conversation as institutions discuss at the policy creation level how policy may be enacted.

Research Design

Altheide (2000) stated, "Qualitative document analysis is similar to all qualitative methodology in that the main emphasis is on discovery and description, including search for underlying meanings, patterns, and processes, rather than mere quantity or numerical relationships between two or more variables" (p. 290). Therefore, several documents were utilized for this research to determine patterns and processes of communication. This research utilized an existing data set, publicly accessible.

The intellectual property policies of 25 higher education institutions were examined utilizing Fairclough's (2010) three prong approach. *Entrepreneur Magazine* produces an annual list of the top 25 entrepreneur schools in the United States (Princeton Review Staff, 2016). Getting on this list has become an objective of many schools, the aspiration of many programs. The 25 schools are selected through assessment of attributes such as number of faculty, funding, number of courses, unique courses and programs, as well as support of burgeoning businesses. As entrepreneurship is a relatively new discipline in higher education, there is still a lot of movement and shifting on this top list of schools. However, the basic construct of entrepreneurship is recognition of opportunity and development of a venture without regard to resources currently held. Entrepreneurship programs are not specific in disciplines such as art or chemical engineering, but rather produce a variety of commercializable concepts, products, and

innovations; thus producing the broadest possible section of potential IP. Therefore, this particular discipline becomes fertile ground for IP and commodification of IP.

Research Stage 1: Textual Analysis

For this research, the top 25 entrepreneurship schools for 2015 as listed in the *Entrepreneur Magazine* were identified online, and their intellectual property policies were isolated. Intellectual property policies were viewed online, then printed. A detailed document and content analysis, utilizing Fairclough's (2010) three prong approach, focusing on keywords and phrases was used to examine the information. Charts of word choice, occurrence, definitions, grammatical designations, and referential definitions or connotative constructs were compiled, examined, and coded. Codes were placed in common groupings for further analysis.

Second, the method of decision and production as well as implementation and practice implications was considered. Distribution of text – the internet and placement of documents within the internet – was a primary concern within this construct, Discussions of processes or practices was considered as a managerial construct. Placement concepts are illustrative of Fairclough's (2010) technologization.

Finally, once all policies were coded, they were examined within context, not only of each policy itself, but within a broader context of hegemonic policy production among the 25 selected institutions. Placement of policy within the broader context of other policies was expected to reveal a broader institutional perspective related to intellectual property. Common approaches to policy, language, and practice were expected to illustrate system wide, hegemonic, elements of intellectual property policies.

Research Stage 2: Production and Distribution

Using information collected in Research Stage 1, charts and tables were created to explore and illustrate relationships. Relationships were analyzed for determining themes. Altheide's (2000) communication ecology elements were overlaid on data from Stage 1 to categorize the information as information technology, communication format, and social activity.

Research State 3: Contextual Analysis

Finally, findings were examined and explored in order to answer the primary research question.

Artifact

Due in large part to the Bayh-Dole Act of 1980, which granted property rights to federally funded entities, many higher education institutions instituted intellectual property policies, claiming varying degrees of rights for faculty, staff, students, and researchers to intellectual property (State Intellectual Property, 2007). The Bayh-Dole Act was enacted primarily to spur on innovation and invention in order to stimulate a lagging economy and to grant additional sources of revenue to higher education institutions as the federal government decreased support through broad budget cutbacks. Consequently, institutions have spent decades and an incalculable amount of money in an attempt to define and capture intellectual property's potential.

Table 1 shows 24 of the top 25 undergraduate entrepreneurship programs in the United States for 2015 with Carnegie classifications according to *Entrepreneur Magazine*. One of the 25 institutions was not used because of falsified documents.

Table 1. Twenty-Four of Top 25 Undergraduate Programs in Entrepreneurship for 2015.

Name of Institution	***Location***	***Funding***	***# Students***
1. Babson College	Babson Park, MA	Private	3,445
2. Baylor University	Waco, TX	Private	14,614
3. University of Houston	Houston, TX	Public	37,000
4. University of Southern California	Los Angeles, CA	Private	34,824
5. Washington University in St. Louis	St. Louis, MO	Private	13,575
6. Brigham Young University	Provo, UT	Private	34,130
7. University of Arizona	Tucson, AZ	Public	38,767
8. Temple University	Philadelphia, PA	Public	38,507
9. University of North Carolina at Chapel Hill	Chapel Hill, NC	Public	28,916
10. University of Oklahoma	Norman, OK	Public	25,881
11. Syracuse University	Syracuse, NY	Private	19,638
12. Northeastern University	Boston, MA	Public	27,537
13. University of Maryland	College Park, MD	Public	37,195
14. Clarkson University	Potsdam, NY	Private	3,187
15. Miami University, Ohio	Oxford, OH	Public	16,884
16. University of Dayton	Dayton, OH	Private	10,908
17. DePaul University	Chicago, IL	Private	25,072
18. Lehigh University	Bethlehem, PA	Private	6,996
19. University of Michigan	Ann Arbor, MI	Public	41,674
20. University of Washington	Seattle, WA	Public	45,943
21. Texas Christian University	Fort Worth, TX	Private	8,853
22. Baruch College	New York, NY	Public	18,090
23. Saint Louis University	St. Louis, MO	Private	16,317
24. Bradley University	Peoria, IL	Private	5,800

The top 25 entrepreneurship programs as determined by *Entrepreneur Magazine* presented an interesting sample. A single institution was removed due to document falsification, leaving 24 institutions. Thirteen of these institutions were private not for

profit universities, 11 were public institutions. Douglas and Lombardi (2006) discussed the differences between private and public institutions. They resolved the distinction stating that many of the differences resulted from perceptions alone; however, "private institutions . . . can evade many . . . bureaucratic and regulatory costs and obligations" (Douglas & Lombardi, 2006, para. 7). In order to avoid complex issues of policy in a private institution, those institutions were excluded from the sample. Public institutions receive federal funding and must adhere to federal policy or risk substantial loss of funding. Table 2 shows the 11 public institutions left after excluding private institutions from this study.

Table 2. Remaining Institutions for Analysis.

Name of Institution	***Location***	***Funding***	***# Students***
3. University of Houston	Houston, TX	Public	37,000
7. University of Arizona	Tucson, AZ	Public	38,767
8. Temple University	Philadelphia, PA	Public	38,507
9. University of North Carolina at Chapel Hill	Chapel Hill, NC	Public	28,916
10. University of Oklahoma	Norman, OK	Public	25,881
12. Northeastern University	Boston, MA	Public	27,537
13. University of Maryland	College Park, MD	Public	37,195
15. Miami University, Ohio	Oxford, OH	Public	16,884
19. University of Michigan	Ann Arbor, MI	Public	41,674
20. University of Washington	Seattle, WA	Public	45,943
22. Baruch College	New York, NY	Public	18,090

These remaining institutions contained no duplicate regions or states. They ranged in enrollment from 16,884 to 45,943. While they were all public institutions at the time of this study, three contained complex statewide governance systems which created their policies.

CHAPTER IV

DATA ANALYSIS

Textual Analysis

Fairclough (2010) stated, "Texts are social spaces in which two fundamental social processes simultaneously occur; cognition and representation of the world and social interaction" (p. 6). Through the public dissemination of policy information, social constructs are created as well as understanding of terms and conditions. However, a closer examination of texts may reveal differing definitions and constructs. The terms institutions choose to define social constructs and conditions illuminates an attempt to create common understanding. Lack of a definition of a term in a policy implies a mutual understanding of terms and social constructs.

University of Houston

University of Houston claims ownership of all intellectual property created by persons employed by the University as a condition of employment. This policy on intellectual property appears within a larger policy document between policies on faculty dismissal and tenure review and promotion. The IP policy dictates that the standing committee on IP is formed by presidential appointment, and the committee, in turn, makes recommendations directly to the president (University of Houston System, 2015).

To analyze University of Houston's IP policy, the researcher read the policy three times for basic comprehension. Again, the researcher read the 66 page document two

more times to identify overarching construct, governing concepts, and placement of IP policy within the larger document of University policies. Eight pages were specifically dedicated to intellectual property policies, definitions, and practices. University of Houston's policy began with a broad statement about the primary function of academic research, placing the creation of intellectual property as secondary to the primary pursuit of education. The policy clearly stated that the institution would protect all that is created within its mandate. As the primary statement of the policy advocated a protectionist's perspective, the pursuant policy depicted all intellectual property as an outgrowth of academic activities. The policy's dominant language of University, Chancellor, and Board was followed by processes through which intellectual property is created, reported, and contractually assigned to the University, Chancellor, and Board. The policy was decidedly a process oriented document, following intellectual property throughout the process of creation (University of Houston System, 2015).

Key Words and Phrases.

Utilizing a basic word count, frequency of language use, hierarchical elements, and relational elements can be discovered and empirically demonstrated. University of Houston labeled employees as authors, creators, inventors, and persons (common code of *Employee*) and referred to them 71 times in the policy. The policy placed these individuals under the domain of the University System. The University System interests were carried out by a Chancellor/President and a Board. The policy deferred initial decisions to a standing committee; however, most higher level decisions and ownership rested with each individual university within the University System, Chancellor/President, and Board, and this was stated 142 times (Common Code =

University) within the policy. The product of academic labors included intellectual property, intellectual property rights, technology, and copyrighted materials, all coded as *Product* and listed 118 times (see Table 3).

Table 3. Common Words and Codes From IP Policy - University of Houston.

Common Words	**Definitions**	**#**	**Common Code**
Author	"any person . . . [defined elsewhere in this document] . . . who actually creates copyrighted material" (University of Houston System, 2015, para. 21.08.1A)	23	*Employee* Used interchangeably with Author, Creator, Inventor, and Person
Creator	"means an inventor or author" (University of Houston System, 2015, para. 21.08.1E)	7	
Inventor	"any person who discovers or invents technology" (University of Houston System, 2015, para. 21.08.1G)	19	
Person	"any part time or full time faculty or staff member working at, or student attending, the University or other entity under the governance of the Board" (University of Houston System, 2015, para. 21.08.1I)	22	
Total Number of Occurrences of Common Code, Employee =			**71**
University	"All component universities within the University of Houston system" (University of Houston System, 2015, para. 21.08.1B)	102	*University* Used interchangeably with University, Chancellor/ President, and the University System Governing Board
Chancellor/ President	"the Chancellor/President of the University under the governance of the Board, or any person the Chancellor/President designates to carry out the University's intellectual property policy" (University of Houston System, 2015, para. 21.08.1J)	20	
Board	Not defined by the definitions section, the Board is defined in the broader framing document of the entire University System Policy packet and is the Board of Regents.	20	
Total Number of Occurrences of Common Code, University =			**142**

Table 3. cont.

Common Words	**Definitions**	**#**	**Common Code**
Intellectual Property	Not defined within the document. Merriam Webster's online dictionary definition: "property (as an idea, invention, or process) that derives from the work of the mind or intellect; *also* : an application, right, or registration relating to this" (Intellectual Property, 2015, para. 2)	17	*Product* Also referred to as intellectual property, intellectual property rights, technology, and copyrighted material.
Intellectual Property Rights	"Means those rights of ownership recognized by law in technology, copyrighted material, and computer software and firmware (all as defined in this policy). Intellectual property rights include, but are not limited to patents, copyrights, and rights to trade secrets and know how (University of Houston System, 2015, para. 21.08.1F).	36	
Technology	"discoveries, innovations, or inventions" (University of Houston System, 2015, para. 21.08.1L)	38	
Copyrighted material	"Original expression that is fixed in any tangible medium of expression and subject to copyright protection under Title 17 of the United States Code as it now exists or as it may be amended" (University of Houston System, 2015, para. 21.08.1D).	27	
Total Number of Occurrences of Common Code, Product =			**118**
Net Income	"with respect to Board-owned rights in any particular intellectual property and/or copyright, gross revenue received by the University as a result of the commercialization of such rights, less . . ." (University of Houston System, 2015, para. 21.08.1H)	25	*Money*
Total Number of Occurrences of Common Code, Money =			**25**

Distribution of Policy and Placement of Text.

The second element to be examined in this project was methods of distributing policy and the implications of that distribution system. University of Houston placed its policy online with a contextualizing statement that all policies had been placed online and affiliated individuals were expected to familiarize themselves with the totality of the policies. Placing these policies online made these policies public access records.

A search of intellectual property policies within the search function of the website revealed several documents. First, the document explaining that all policies had been placed online; second, the actual document within the context of all University System policies; and finally, the intellectual property policy in isolation beginning with that section rather than the entire document of all University System policies. The specific intellectual property policy rested between the reasons and processes for employee dismissal, and tenure review processes. This placed the intellectual property policy firmly within the realm of an employee contract and the execution of employment expectations. As the IP policy depicted an employer/employee relationship, a power structure was also indicated.

University of Arizona

At the time of this study, the University of Arizona's intellectual property policy claimed ownership of all intellectual property produced as a result of employment or as a condition of employment. The IP policy consisted of two stand-alone documents; contents included a general statement, a construct of employees affected, an outline of the IP process, and a field for feedback. Policies functioned as a guide, informing constituents of ownership, stipulations, and the existence of a coordinated enterprise

called Tech Launch Arizona, which commercialized university output. Tech Launch Arizona provided one policy document on IP (Tech Launch Arizona, 2014), and the Arizona Board of Regents (ABOR) provided the other (Arizona Board of Regents [ABOR], 2010).

The Tech Launch Arizona policy was six pages, and the ABOR policy was 17 pages in length. The enacted policies at the time of this research were read three times for comprehension, then a basic word count and definition chart was created to aid in understanding the implications of word frequency and placement.

The Arizona Board of Regents' policy claimed all intellectual property created within the scope of employment or where significant university resources had been utilized. This policy was a stand-alone single document policy. The policy clearly stated that all decisions and disputes were determined or resolved by the board. Also, this policy specifically mentioned the Bayh-Dole Act, while others did not. The policy by the Arizona Board of Regents was 17 pages in length and carried a decidedly legal tone (ABOR, 2010).

The Arizona Board of Regents oversees all Arizona public universities; Arizona State University, Northern Arizona University, and the University of Arizona. As it is the third university which was part of this data set, this policy was also relevant to the analysis. Examining the policy by word occurrence and prioritization, it became clear the ABOR policy placed the University at the top of this system, followed by intellectual property, and finally the employee. Therefore, the University owns intellectual property created by employees.

Key Words and Phrases.

Utilizing the word count and relational content approach, the most frequently used terms in the Tech Launch Arizona policy was Intellectual Property (Common Code = *Product*) at 174 instances. Next most frequent was *University* identifiers at 151. Finally, subjects to the policy, labeled in a reduction approach as *Employee* occurred 70 times within this policy (Table 4).

Table 4. Common Words and Codes From IP Policy – Tech Launch Arizona.

Common Words	**Definition**	**#**	**Common Code**
Covered Individuals	▪ "instructors; lecturers; senior lecturers; principal lecturers; assistant professors; associate professors; professors; professors of practice; research professors; clinical professors; Regents' Professors; persons with visiting, adjunct, joint, emeritus, research, clinical, or other such title; and other employees who are designated in their Notice of Appointment as holding a faculty position" (Tech Launch Arizona, 2014, Definitions, para. 3) ▪ "service and academic professionals, administrators, and student employees" (Tech Launch Arizona, 2014, Definitions, para. 4)	46	*Employee*
Employee	Not defined within the document. Merriam-Webster's online dictionary: "A person who works for another person or for a company for wages or a salary" (Employee, 2015, para. 1)	24	
Total Number of Occurrences of Common Code, Employee =			**70**

Table 4. cont.

Common Words	Definition	#	Common Code
Intellectual Property	"All forms of legally recognized intellectual property, including copyrights, patents, trade secrets, trademarks, and plant variety protection, together with any associated or supporting technology or know how for the purpose of this policy" (Tech Launch Arizona, 2014, Definitions, para. 10).	154	*Product*
Other IP Terms	Works, Ideas, Innovation, or other works considered to be copyright worthy or patentable	20	
Total Number of Occurrences of Common Code, Product =			**174**
Intellectual Property Committee	"University committee of not fewer than five persons and composed of faculty and staff. . . . hears appeals by Covered Individuals. . . may also consider changes in IP policy" (Tech Launch Arizona, 2014, Definitions, para. 11)	5	*University*
University	University, ABOR, Tech Launch of Arizona	135	
IP Official	"Vice President of Tech Launch Arizona, as appointed by the University President. . . . manages ABOR-owned IP through Tech Launch Arizona" (Tech Launch Arizona, 2014, Definitions, para. 12)	11	
Total Number of Occurrences of Common Code, University =			**151**
Significant Use of University Resources	"Does not cover simple use of a University-provided laptop or office space, for example, but generally does cover what is done on University time or in furtherance of University-related activities, such as research" (Tech Launch Arizona, 2014, Definitions, para. 14).	4	*Money* Phrase was used in text as a test of IP submission requirements to the overall policy.
Total Number of Occurrences of Common Code, Money =			**4**

The most frequently used terms in the Arizona Board of Regents' policy was Intellectual Property and Invention (Common Code = *Product*) at 121 instances. The next most frequent was *University* at 115. Finally, individuals subject to the policy, indicated by the common code *Employee* occurred 77 times within this policy (Table 5).

Table 5. Common Words and Codes From IP Policy – Arizona Board of Regents.

Common Words	**Definitions**	**#**	**Common Code**
University	An institution under the governance of the Arizona Board of Regents	115	*University*
Total Number of Occurrences of Common Code, University =			**115**
Employee	According to the policy, "means faculty, staff, administrators, student employees, visiting faculty and researchers paid by the Board or by a university governed by the Board" (ABOR, 2010, para. F.3.)	38	*Employee* Subject to employment is a condition of application of this policy. Creator, Student, and Employee all fit within this umbrella.
Faculty	Not defined within the document. Merriam-Webster's online dictionary: "group of teachers in a school or college" (Faculty, 2015, para. 1)	2	
Staff	Not defined within the document. Merriam-Webster's online dictionary: "a group of people who work for an organization or business" (Staff, 2015, para. 1)	2	
Creator	Not defined within the document. Merriam-Webster's online dictionary: "a person who makes something new" (Creator, 2015, para. 1)	21	
Student	According to the policy, "means a person who is currently registered or enrolled in one or more classes at a university under the jurisdiction of the Board" (ABOR, 2010, para. 10)	14	
Total Number of Occurrences of Common Code, Employee =			**77**

Table 5. cont.

Common Words	**Definitions**	**#**	**Common Code**
Intellectual Property	According to the policy, "includes all forms of legally recognized intellectual property, including copyrights, patents, trade secrets, trademarks, and plan variety protection together with any associated or supporting technology or know how" (ABOR, 2010, para. 4)	119	*Product*
Invention	Not defined within the document. Merriam-Webster's online dictionary: "something invented: . . . a product of the imagination" (Invention, 2015, para. 3)	2	
Total Number of Occurrences of Common Code, Product =			**121**
Revenue	Not defined within the document. Merriam Webster's online dictionary: "money that is made by or paid to a business or an organization" (Revenue, 2015, para. 1)	6	*Money* As indicated by the definition
Royalty	Not defined within the document. Merriam-Webster's online dictionary: "an amount of money that is paid to the original creator of a product, book, or piece of music based on how many copies have been sold" (Royalty, 2015, para. 2)	4	
Income	Not defined within the document. Merriam Webster's online dictionary: "money that is earned from work, investments, business, etc" (Income, 2015, para. 1)	7	
Commercialize	Not defined within the document. Merriam-Webster's online dictionary: " : to use (something) as an opportunity to earn money" (Commercialize, 2015, para. 1) "*business* : to make (something) available to customers" (Commercialize, 2015, para. 2)	5	
Total Number of Occurrences of Common Code, Money =			**22**

Table 5. cont.

Common Words	Definitions	#	Common Code
Rights	Not defined within the document and no appropriate definition provided. According to The Free Dictionary by Farlex (online), "plural of right, which is the collection of entitlements which a person may have and which are protected by the government and the courts, or under an agreement (contract)" (Rights, 2003-2016, para. 1)	13	*Rights*
Total Number of Occurrences of Common Code, Rights =			**13**

As an equation or single statement through the word count and definition process was created, it was evident that Intellectual Property was owned by the University System when produced by Employees. One caveat existed in that University of Arizona also chose to define a policy phrase of "significant university resources" adding the qualifier to any other vested individual that the intellectual property was owned by the establishment where significant university resources were used in its creation. The document began with a broad statement that the Arizona Board of Regents (ABOR) claimed no ownership except where defined in the policy. However, the only exclusion from the policy was students in the course of their regular student pursuits.

Distribution of Policy and Placement of Text.

The search field of the institution's website was used to search for intellectual property policy. In this case, for University of Arizona, two policies resulted from the search. One policy was from Tech Launch Arizona and a second from the Arizona Board of Regents. Both policies were analyzed. Two policies indicated a broader policy reach

than a single institution. Two policies and approaches were indicated in the website search; Tech Launch Arizona and the Arizona Board of Regents. While the two policies did not appear to be in conflict, there were some interesting differences. Tech Launch Arizona represented a concerted effort to maximize production. The Tech Launch policy focused on process. The Arizona Board of Regents policy read much more like a standard policy with specific statements regarding remuneration and royalties. Both policies were distributed online allowing public access to the policies, however the existence of the two in concert precipitated questions regarding primary and secondary policy placement; in the event of disagreement, which policy affects the product or process? Similarly, are constituents subject to both policies; if so, in what prioritization? These questions cannot be answered through textual analysis; however, analyzing both policies offered insight into the potentially confusing nature of dual policies.

Temple University

The Temple University intellectual property policy was a six page document entitled *Inventions and Patents* (Board of Trustees, 2011) specifically under the oversight of the Provost. This policy existed within a larger policy and procedures manual between misconduct and conflict of interest sections. The policy was committee managed. The committee was comprised of faculty appointed by the president and senate. Temple University claimed ownership of all intellectual property where any institutional resources were used or as a condition of employment. The policies related to IP were set within several webpages with hyperlinks to content and forms. The content of the policy was examined first, and the broader context and organization second. The policy document offered no consistent definitions, therefore contextual and dictionary

definitions were used. The only definition offered was of "income." The lack of institutionally defined terms indicated an expectation of common understanding or usage. There was an interesting word choice omission as intellectual property was not mentioned once within the documents and only in a directive manner within the website. The term was not defined nor explicitly stated within the policy. Utilizing word occurrence and prioritization, I determined the University owned all intellectual property produced as a result of employment and therefore subsequent revenue would be distributed by the institution.

Key Words and Phrases.

The prioritization of the nouns within this policy indicated that the top priority of the policy was the institution or *University*; secondarily, invention or *Product*; followed closely by *Employee*s and *Money* (Table 6).

Table 6. Common Words and Codes From IP Policy – Temple University.

Common Words	**Definitions**	**#**	**Common Code**
University	Used with a lower case U, assumed to mean Temple University	54	*University*
Total Number of Occurrences of Common Code, University =			**54**
Employee	Not defined within the document. Merriam-Webster's online dictionary: "a person who works for another person or for a company for wages or a salary" (Employee, 2015, para. 1)	1	*Employee* All individuals [employees] subject to this policy who receive benefit from the university.
Inventor	Not defined within the document. Your Dictionary's online dictionary: "a person who comes up with an idea for something new" (Inventor, n.d., para. 1).	23	

Table 6. cont.

Common Words	Definitions	#	Common Code
Faculty	Not defined within the document. Merriam-Webster's online dictionary: "group of teachers in a school or college" (Faculty, 2015, para. 1)	6	*Employee* All individuals [employees] subject to this policy who receive benefit from the university
Staff	Not defined within the document. Merriam-Webster's online dictionary: "a group of people who work for an organization or business" (Staff, 2015, para. 1).	1	
Student	Not defined within the document. Merriam-Webster's online dictionary: "a person who attends a school, college, or university" (Student, 2015, para. 1).	2	
Total Number of Occurrences of Common Code, Employee =			**33**
Invention	Not defined within the document. Merriam-Webster's online dictionary: "Something invented: . . . a product of the imagination" (Invention, 2015, para. 3).	29	*Product* Knowledge, discovery, or technology which produces patentable product; used as descriptor for invention or product.
Knowledge	Not defined within the document. Merriam-Webster's online dictionary: "information, understanding, or skill that you get from experience or education" (Knowledge, 2015, para. 1)	1	
Discovery	Not defined within the document. Merriam-Webster's online dictionary: "the act of finding or learning something for the first time" (Discovery, 2015, para. 1)	3	
Technology	Not defined within the document. Merriam-Webster's online dictionary: "the use of science in industry, engineering, etc., to invent useful things or to solve problems" (Technology, 2015, para. 1)	1	
Total Number of Occurrences of Common Code, Product =			**34**

Table 6. cont.

Common Words	**Definitions**	**#**	**Common Code**
Intellectual Property	Not defined within the document. Merriam Webster's online dictionary definition: "property (as an idea, invention, or process) that derives from the work of the mind or intellect; *also* : an application, right, or registration relating to this" (Intellectual Property, 2015, para. 2).	0	*Intellectual Property*
Total Number of Occurrences of Common Code, Intellectual Property =			**0**
Net Income	Net income is defined within the document; all other terms are derivative of this definition. Net income is "gross income minus the patenting, legal and marketing costs" (Board of Trustees, 2011, Section 4. Income Distribution, para. 2).	5	*Money*
Royalty	Not defined within the document. Merriam-Webster's online dictionary: "an amount of money that is paid to the original creator of a product, book, or piece of music based on how many copies have been sold" (Royalty, 2015, para. 2).	9	
Commercialize or Commercializa-tion	Not defined within the document. Merriam-Webster's online dictionary: " : to use (something) as an opportunity to earn money" (Commercialize, 2015, para. 1) "business : to make (something) available to customers" (Commercialize, 2015, para. 2)	1	
Total Number of Occurrences of Common Code, Money =			**15**

Table 6. cont.

Common Words	Definitions	#	Common Code
Rights	Not defined within the document and no appropriate definition provided. According to The Free Dictionary by Farlex (online), "plural of right, which is the collection of entitlements which a person may have and which are protected by the government and the courts, or under an agreement (contract)" (Rights, 2003-2016, para. 1)	12	*Rights*
Total Number of Occurrences of Common Code, Rights =			**12**

Distribution of Policy and Placement of Text.

This policy was retrieved using the search mechanism for the institution's website. However, it is important to note that the policy appeared as hyperlinks embedded within text. The policies were naturally, by this form of distribution, disjointed, disconnected, and isolated using only the connective tissue of reference on the main page of hyperlinks as the context. The hyperlinks were followed and printed and in this way constructed a contiguous policy document. Statements regarding discovery and disclosure were followed by a link to the institution's policy on invention and forms for completion on disclosure. The links indicated whether or not they were for students, faculty, staff, or researchers. In this way, the policy was scattered like breadcrumbs across the institution's website rather than in a single location. The website was examined, the hyperlinks were followed then printed in sequence to attempt to preserve the reader's progression through the process.

University of North Carolina at Chapel Hill

University of North Carolina at Chapel Hill claims all intellectual property from all constituents either as the result of employment or enrollment. Their policy places the burden of proof of individual ownership on the constituent. The policy offers no specific definitions listed as such. However, throughout the document there is referential language which aids in defining terms according to the institution's intent.

The policy is prefaced with a statement regarding the intent of the policy and the focus of the university. The preface quotes the U.S. Constitution granting Congress the power to promote science and useful arts and granting rights for a limited time to the inventor. The document continues with a list of objectives obtained through application of the policy. The policy claims all intellectual property of employees as a condition of employment or work for hire. Work of students whether for hire, sponsored activities, or activities within classrooms all belongs to the institution. Interestingly, the text claims that work done in the pursuit of a course is work for hire, and therefore subject to the policy. This particular instance is confusing as students may or may not be employees; however, their work is treated as work for hire, facilitated by paid faculty that would otherwise not be created.

Key Words and Phrases.

The policy asserts the position of the institution firmly and with clear priority with 186 references to the *University* in some form. Employees or persons subject to the policy (Common Code = *Employee*) are referenced 75 times while the primary subject of the policy, *Product* in some form is referenced only 69 times. *Money* or *Rights* to works is referenced 22 times (Table 7).

Table 7. Common Words and Codes From IP Policy – University of North Carolina at Chapel Hill.

Common Words	**Definition**	**#**	**Common Code**
University	University of North Carolina	59	*University*
Institution	University of North Carolina	93	
Constituent Institution	University of North Carolina	34	
Total Number of Occurrences of Common Code, University =			**186**
Sponsor	Not defined within the document. Merriam-Webster's online dictionary: "a person or organization that pays the cost of an activity or event" (Sponsor, 2015, para. 1)	12	*Employee* Employee as a condition of employment of the policy
Personnel	Not defined within the document. Merriam-Webster's online dictionary: "the people who work for a particular company or organization" (Personnel, 2015, para. 1)	4	
Employee	Not defined within the document. Merriam-Webster's online dictionary: "a person who works for another person or for a company for wages or a salary" (Employee, 2015, para. 1)	10	
Student	Not defined within the document. Merriam-Webster's online dictionary: "a person who attends a school, college, or university" (Student, 2015, para. 1).	24	
Investigator	Researcher	3	
Worker	Not defined within the document. Merriam-Webster's online dictionary: "a person who does a particular job to earn money" (Worker, 2015, para. 1)	2	
Inventor	Not defined within the document. Your Dictionary's online dictionary: "a person who comes up with an idea for something new" (Inventor, n.d., para. 1).	20	
Total Number of Occurrences of Common Code, Employee =			**75**

Table 7. cont.

Common Words	**Definition**	**#**	**Common Code**
Work	Not defined within the document. Merriam-Webster's online dictionary: "a job or activity that you do regularly especially in order to earn money" (Work, 2015, para. 1)	10	*Product*
Invention	Not defined within the document. Merriam-Webster's online dictionary: "something invented: . . . a product of the imagination" (Invention, 2015, para. 3)	30	
Discovery	Not defined within the document. Merriam-Webster's online dictionary: "the act of finding or learning something for the first time" (Discovery, 2015, para. 1)	10	
Research	Not defined within the document. Merriam-Webster's online dictionary: "Careful study that is done to find and report new knowledge about something" (Research, 2015, para. 1)	9	
Patent	Not defined within the document. Merriam-Webster's online dictionary: "making exclusive or proprietary claims or pretensions" (Patents, 2015, para. 5)	10	*Product*
Total Number of Occurrences of Common Code, Product =			**69**
Interest	Not defined within the document. Merriam-Webster's online dictionary: "right, title, or legal share in something" (Interest, 2015, para. 4)	3	*Money*
Royalty(ies)	Not defined within the document. Merriam-Webster's online dictionary: "an amount of money that is paid to the original creator of a product, book, or piece of music based on how many copies have been sold" (Royalty, 2015, para. 2).	4	

Table 7. cont.

Common Words	Definition	#	Common Code
Commercialization	Not defined within the document. Merriam-Webster's online dictionary: " : to use (something) as an opportunity to earn money" (Commercialize, 2015, para. 1) "*business* : to make (something) available to customers" (Commercialize, 2015, para. 2)	2	*Money*
Support	Not defined within the document. Merriam-Webster's online dictionary: "to give help or assistance to" (Support, 2015, para. 3)	5	
Total Number of Occurrences of Common Code, Money =			**14**
Rights	Not defined within the document and no appropriate definition provided. According to The Free Dictionary by Farlex (online), "plural of right, which is the collection of entitlements which a person may have and which are protected by the government and the courts, or under an agreement (contract)" (Rights, 2003-2016, para. 1)	8	*Rights*
Total Number of Occurrences of Common Code, Rights =			**8**

Distribution of Policy and Placement of Text.

The UNC Chapel Hill policy is a 10 page document (University of North Carolina at Chapel Hill, 2015) encompassing not only use of existing intellectual property but the creation of new intellectual property. This policy exists within a larger policy manual. The policy begins with a statement about incentivizing innovation. A chancellor appointed committee oversees all functions with the president serving as chair of this committee. Disputes regarding the policy are all handled internally. The policy also

communicates a responsibility of the institution to inform and educate all personnel regarding this policy.

The University of Oklahoma

The University of Oklahoma policy handbook is 258 pages long where this policy appears in section three between promotion and conflict of interest policies. The process of this policy falls under the duties of the vice president of technology development along with a patent committee only convened as needed by the president and senate. This policy document contains all policies related to employment with this institution.

Distribution of Policy and Placement of Text.

The section dedicated to the intellectual property policy begins on page 87 and continues for one page. The intellectual property policy is positioned between conflict of interest and outside employment policies. This policy provides an overview of intent, a framing statement about the purpose of the intellectual property policy. The policy specifies that it is the institution's expectation that faculty will produce innovation and will include students in that development. As such, all subsequent intellectual property is owned by the institution. However, it provides direction to another document for the policy in full. This may be a potential source of confusion. That document is the Norman Campus Faculty Handbook.

The Norman Campus Faculty Handbook policy begins with a preamble stating the intent of the policy is to encourage and create new opportunities for the State of Oklahoma. This document is 62 pages in length detailing rights and responsibilities of affiliation with University of Oklahoma. The intellectual property policy (Oklahoma University Provost Office, 2013) within this overall document is 11 pages in length and

claims all intellectual property as a condition of employment. Within this handbook the policy exists between faculty expectations and policy compliance protocols implying this policy is a condition of employment and an expectation of employment. This policy also stipulates that new employees who enter into employment with the University of Oklahoma with existing intellectual property have the onus of disclosure so that further development ownership may be established.

As this institution claims all intellectual property, the placement of the policy within a handbook entitled faculty handbook may be another source of confusion. Students may not believe they are subject to the policy. However, as a condition of employment, they may not be faculty, but subject to the policy nonetheless.

Key Words and Phrases.

This policy establishes no definitions. Assumptions regarding terms and understanding are clearly left with the reader. Primary terms were defined within the word count document by utilization of Merriam-Webster's online dictionary. The common code *University* was referenced 158 times. Individuals constituent to the policy such as employees were labeled by the common code *Employee* and were referenced 128 times. Product, invention, or creative work was labeled by the common code *Product* and included 131 references and revenue (*Money*) from intellectual property 23 occurrences. Table 8 shows common words and common codes identified in policies of the University of North Carolina at Chapel Hill.

Table 8. Common Words and Codes From IP Policy – University of Oklahoma.

Common Words	**Definitions**	**#**	**Common Codes**
University	The University of Oklahoma	158	*University*
Total Number of Occurrences of Common Code, University =			**158**
Employee	Not defined within the document. Merriam-Webster's online dictionary: "a person who works for another person or for a company for wages or salary" (Employee, 2015, para. 1)	16	*Employee*
Student	Not defined within the document. Merriam-Webster's online dictionary: "a person who attends a school, college, or university" (Student, 2015, para. 1)	17	
Faculty	Not defined within the document. Merriam-Webster's online dictionary: "group of teachers in a school or college" (Faculty, 2015, para. 1)	22	
Staff	Not defined within the document. Merriam-Webster's online dictionary: "a group of people who work for an organization or business" (Staff, 2015, para. 1)	14	
Creator	Not defined within the document. Merriam-Webster's online dictionary: "a person who makes something new" (Creator, 2015, para. 1)	22	
Inventor	Not defined within the document. Your Dictionary's online dictionary: "a person who comes up with an idea for something new" (Inventor, 2015, para. 1)	23	
Discover or Discoverer	Not defined within the document. Merriam-Webster's online dictionary: "to see, find, or become aware of (something) for the first time" (Discover, 2015, para. 1)	14	
Total Number of Occurrences of Common Code, Employee =			**128**

Table 8. cont.

Common Words	**Definitions**	**#**	**Common Codes**
Intellectual Property	Not defined within the document. Merriam Webster's online dictionary definition: "property (as an idea, invention, or process) that derives from the work of the mind or intellect; *also* : an application, right, or registration relating to this" (Intellectual Property, 2015, para. 2)	11	*Product*
Work	Not defined within the document. Merriam-Webster's online dictionary: "a job or activity that you do regularly especially in order to earn money" (Work, 2015, para. 1)	35	
Invention	Not defined within the document. Merriam-Webster's online dictionary: "something invented: . . . a product of the imagination" (Invention, 2015, para.3)	43	
Discovery	Not defined within the document. Merriam-Webster's online dictionary: "the act of finding or learning something for the first time" (Discovery, 2015, para. 1)	37	
Patent	Not defined within the document. Merriam-Webster's online dictionary: "making exclusive or proprietary claims or pretensions" (Patent, 2015, para. 5)	5	
Total Number of Occurrences of Common Code, Product =			**131**
Income	Not defined within the document. Merriam Webster's online dictionary: "money that is earned from work, investments, business, etc" (Income, 2015, para. 1)	1	*Money*
Royalty(ies)	Not defined within the document. Merriam-Webster's online dictionary: "an amount of money that is paid to the original creator of a product, book, or piece of music based on how many copies have been sold" (Royalty, 2015, para. 2)	3	

Table 8. cont.

Common Words	Definitions	#	Common Codes
Commercialization	Not defined within the document. Merriam-Webster's online dictionary: " : to use (something) as an opportunity to earn money" (Commercialize, 2015, para. 1) "*business* : to make (something) available to customers" (Commercialize, 2015, para. 2)	8	*Money*
Revenue	Not defined within the document. Merriam Webster's online dictionary: "money that is made by or paid to a business or an organization" (Revenue, 2015, para. 1)	8	
Asset(s)	Not defined within the document. Merriam Webster's online dictionary definition: "something that is owned by a person, company, etc." (Assets, 2015, para. 2)	3	
Total Number of Occurrences of Common Code, Money =			**23**
Rights	Not defined within the document and no appropriate definition provided. According to The Free Dictionary by Farlex (online), "plural of right, which is the collection of entitlements which a person may have and which are protected by the government and the courts, or under an agreement (contract)." (Rights, 2003-2016, para. 1)	3	*Rights*
Total Number of Occurrences of Common Code, Rights =			**3**

Northeastern University

Distribution of Policy and Placement of Text.

Northeastern University claims all intellectual property of faculty, staff, and students as a condition of employment or where significant university resources were utilized. The intellectual property policy from Northeastern University is located within the faculty handbook. The text itself contains a watermark image stating "faculty

handbook" across each page. The policy contains a statement that it was approved by faculty senate. The policy is the responsibility of committee, appointed based expertise and report to the provost who also serves as the chair of this committee. The section on intellectual property is 15 pages long. The policy on student intellectual property is also contained within this document (Northeastern University, 2012).

A subsequent search for policy specifically released to students was conducted but no results were found. It raises the question of how do students find out about the policy? It implies that it is the responsibility of faculty to inform students of the intellectual property policy and its implications. The policy is prefaced by a statement of objectives. This preface states that the objective of the institution is to facilitate the creation and utilization of innovation. The policy states that intellectual property is owned by the institution as a condition of employment. The policy clearly includes student employees and yet is placed within a policy clearly for faculty. Students are referenced 15 times. Section 4e of the policy is dedicated to student intellectual property. All intellectual property produced where significant institutional resources are used is owned by the institution, even that of students (Northeastern University, 2012).

The policy appears between segments on faculty expectations of work and conflict of interest. The vast majority of language in the policy is not defined. This policy approaches intellectual property as a process. The policy outlines the steps toward commercialization. Decisions regarding institutional ownership and cultivation of commercialization are made by a faculty committee rather than an office such as a technology transfer office. Final decisions rest with the provost.

Key Words and Phrases.

The policy lists only one definition, and that is of an invention. However, when the definition provided by the policy is compared to a dictionary definition, the two differ. The definition provided is not of an object, but rather of where an invention is created within a set of criteria such as with university resources. The remainders of the terms were undefined. A word count revealed the institution was consistently referred to as *University* 181 times. *Product* or invention was stated 119 times. Constituents of the policy (common code, *Employee*) had 108 references. Financial benefit from intellectual property, stated in many forms (*Money* or *Rights*), appeared 44 times (Table 9).

Table 9. Common Words and Codes From IP Policy – Northeastern University.

Common Words	**Definition**	**#**	**Common Code**
University	Northeastern University	181	*University*
Total Number of Occurrernces of Common Code, University =			**181**
Invention	Defined on page 2 of the policy as an invention which is conceived or reduced to practice through use of funds space, facilities, equipment, materials or resources of the University, arising out of sponsored research or wherein the inventor selects University advocacy (Northeastern University, 2012). Merriam Webster's online dictionary defined this as "something invented: . . . a product of the imagination" (Invention, 2015, para. 3). However the definition from the policy is not about the invention, but the context in which the invention is conceived.	78	*Product* Used within the document as a creative product
Patent	Not defined within the document. Merriam-Webster's online dictionary: "making exclusive or proprietary claims or pretensions" (Patent, 2015, para. 5)	6	

Table 9. cont.

Common Words	**Definition**	**#**	**Common Code**
Work	Not defined within the document. Merriam-Webster's online dictionary: "a job or activity that you do regularly especially in order to earn money" (Work, 2015, para. 1)	30	*Product* Used within the document as a creative product
Intellectual Property	Not defined within the document. Merriam Webster's online dictionary definition: "property (as an idea, invention, or process) that derives from the work of the mind or intellect; *also* : an application, right, or registration relating to this" (Intellectual Property, 2015, para. 2)	5	
Total Number of Occurrences of Common Code, Product =			**119**
Faculty	Not defined within the document. Merriam-Webster's online dictionary: "group of teachers in a school or college" (Faculty, 2015, para. 1)	17	*Employee*
Staff	Not defined with the document. Merriam-Webster's online dictionary: "a group of people who work for an organization or business" (Staff, 2015, para. 1)	16	
Student	Not defined within the document. Merriam-Webster's online dictionary: "a person who attends a school, college, or university" (Student, 2015, para. 1)	15	
Inventor	Not defined within the document. Your Dictionary's online dictionary: "a person who comes up with an idea for something new" (Inventor, n.d., para. 1)	45	
Author	Not defined within the document. Merriam Webster's online dictionary: "a person who starts or creates something (such as a plan or idea)" (Author, 2015, para. 2)	15	
Total Number of Occurrences of Common Code, Employee =			**108**

Table 9. cont.

Common Words	**Definition**	**#**	**Common Code**
Compensation	Not defined within the document. Merriam Webster's online dictionary: "payment given for doing a job" (Compensation, 2015, para. 3)	1	*Money*
Commercializa-tion	Not defined within the document. Merriam-Webster's online dictionary: " : to use (something) as an opportunity to earn money" (Commercialize, 2015, para. 1) "*business* : to make (something) available to customers" (Commercialize, 2015, para. 2)	14	
Royalty(ies)	Not defined within the document. Merriam-Webster's online dictionary: "an amount of money that is paid to the original creator of a product, book, or piece of music based on how many copies have been sold" (Royalty, 2015, para. 2)	16	
Revenue	Not defined within the document. Merriam Webster's online dictionary: "money that is made by or paid to a business or an organization" (Revenue, 2015, para. 1)	12	
Total Number of Occurrences of Common Code, Money =			**43**
Rights	Not defined within the document and no appropriate definition provided. According to The Free Dictionary by Farlex (online), "plural of right, which is the collection of entitlements which a person may have and which are protected by the government and the courts, or under an agreement (contract)." (Rights, 2003-2016, para. 1)	1	*Rights*
Total Number of Occurrences of Common Code, Rights =			**1**

University of Maryland

Distribution of Policy and Placement of Text.

The University of Maryland's website was used to search for the intellectual property policy of the institution. The search produced a hyperlink to the policy which exists within a larger policy document between faculty promotion and conflict of interest and facility use. The University of Maryland claims all intellectual property from faculty, staff, and students as a condition of employment. The University of Maryland intellectual property policy is 39 pages long. The policy is overseen by the president along with an IP committee and vice president of research. The document includes a statement of omission in that anything not included within the policy should be brought up to the president (University System of Maryland, 2005).

The policy was read three times for comprehension and general policy categorization; the structure was outlined. The policy begins with an introductory statement aligning the policy with the University's mission. The document states that the primary mission of the university is to "advance, preserve, and disseminate knowledge" (University Sysem of Maryland, 2005, p. 1). Following the introduction, a purpose statement asserts that it is the purpose of the policy to establish procedures and processes to maintain institutional interests. After two pages of definitions, the policy begins with general provisions. Many of the defined terms appear only once in the document. Out of 19 terms defined, only six occur more than once in the policy. The policy is divided into four sections: patents, copyright, software, and other (University of Maryland, 2005).

Key Words and Phrases.

One dominant noun used within the policy was *University* and was defined within the document as the University of Maryland College Park. Interestingly, this document was not dominated by the institution, but rather was relatively evenly shared between employees at 313 references to common code, *Employee*, and 305 to the institution (*University*). While the institution is referred to as the University throughout the document, the constituents are referred to with six different terms (see Table 10).

Table 10. Common Words and Codes From IP Policy – University of Maryland.

Common Words	**Definition**	**#**	**Common Code**
University	"The University of Maryland, College Park" (University System of Maryland, 2005, p. 3)	305	*University*
Total Number of Occurrences of Common Code, University =			**305**
Students	"Persons enrolled in the University and acting within the course of their academic work, including, but not limited to, undergraduates, graduate and professional students, non-degree students, and not-for-credit students" (University System of Maryland, 2005, p. 3) Used in conjunction with personnel and employee and subject to the policy implying students are also employees.	91	*Employee*
Student Employee	"A Student who is also a University employee acting within the Scope of Employment" (University Sysem of Maryland, 2005, p. 3)	1	
Creator	Not defined within the document. Merriam-Webster's online dictionary: "a person who makes something new" (Creator, 2015, para. 1)	73	

Table 10. cont.

Common Words	**Definition**	**#**	**Common Code**
Inventor	Not defined within the document. Your Dictionary's online dictionary: "a person who comes up with an idea for something new" (Inventor, n.d., para. 1)	46	*Employee*
Personnel	"All University employees, full-time and part-time, including Student Employees, acting within their Scope of Employment, and other persons holding visiting or post-doctoral appointments or positions" (University System of Maryland, 2005, p. 2)	97	
Scope of Employment	"All activities related to the employment responsibilities of non-faculty Personnel and all University activities related to the field or discipline of the appointment of faculty Personnel (including the general obligation of faculty Personnel to teach, to do creative work, to conduct research, and to participate in matters related to University governance and administration) for which Personnel receive compensation from the University, where compensation is any consideration, monetary or otherwise, including but not limited to title and the ability to use University resources" (University System of Maryland, 2005, p. 3) Conditions of employment and thereby constituents of the policy.	5	
***Total Number of Occurrences of Common Code, Employee* =**			**313**
Resource(s)	Not defined within the document. Merriam Webster's online dictionary: "a source of supply or support" (Resource, 2015, para. 4)	53	*Money*
Income	Not defined within the document. Merriam Webster's online dictionary: "money that is earned from work, investments, business, etc" (Income, 2015, para. 1)	4	

Table 10. cont.

Common Words	**Definition**	**#**	**Common Code**
Revenue	"Consideration paid in cash or equity by a third party in exchange for specific intellectual property rights. Revenue does not include research support in any form (e.g., sponsored research agreements, restricted grants, unrestricted grants, or equity), tuition income, and contract income received by the University including contract income received in lieu of tuition" (University System of Maryland, 2005, p. 2)	56	*Money*
Compensation	Not defined within the document. Merriam Webster's online dictionary: "payment given for doing a job" (Compensation, 2015, para. 3)	7	
Commercializa-tion	Not defined within the document. Merriam-Webster's online dictionary: " : to use (something) as an opportunity to earn money" (Commercialize, 2015, para. 1) "*business* : to make (something) available to customers" (Commercialize, 2015, para. 2)	38	
Royalty	Not defined within the document. Merriam-Webster's online dictionary: "an amount of money that is paid to the original creator of a product, book, or piece of music based on how many copies have been sold" (Royalty, 2015, para. 2)	9	
Own/ Ownership	Not defined within the document. Merriam Webster's online dictionary: "belonging to oneself or itself" (Own, 2015, para. 1) Possession to leverage money	74	
Total Number of Occurrences of Common Code, Money =			**241**

Table 10. cont.

Common Words	Definition	#	Common Code
Rights	Not defined within the document and no appropriate definition provided. According to The Free Dictionary by Farlex (online), "plural of right, which is the collection of entitlements which a person may have and which are protected by the government and the courts, or under an agreement (contract)." (Rights, 2003-2016, para. 1)	29	*Rights*
Total Number of Occurrences of Common Code, Rights =			**29**
Intellectual Property	"The intangible value developed by human creativity that is protected by the legal mechanisms of patents, trademarks, copyrights, service marks, trade secrets, mask works, computer programs and software and plant variety protection certificates and the physical embodiments of such human creativity" (University System of Maryland, 2005, p. 2) Product of creative work.	77	*Product*
Work	Not defined within the document. Merriam-Webster's online dictionary: "a job or activity that you do regularly especially in order to earn money" (Work, 2015, para. 1)	55	
Invention	Not defined within the document. Merriam Webster's online dictionary: "something invented: . . . a product of the imagination" (Invention, 2015, para. 3)	74	
Patent	Not defined within the document. Merriam-Webster's online dictionary: "making exclusive or proprietary claims or pretensions" (Patent, 2015, para. 5)	38	
Total Number of Occurrences of Common Code, Product =			**244**

Miami University, Ohio

Distribution of Policy and Placement of Text.

The Miami University IP policy exists within a larger policy document. After reading Miami University's intellectual property policy three times for comprehension and coding the common language, it is clear that the institution claims all intellectual property of faculty, staff, and students where significant University resources are utilized. Copyright however, remains with the author unless it is copyrightable materials for an online class. The policy of Miami University was only two pages of small print and dense paragraphs which contained only three definitions. This artifact began with a statement of purpose, focusing on encouraging knowledge creation. The headings of the document indicate a concern for copyright and patents, but no other forms of intellectual property. Subsequent headings and content chart the creation of intellectual property from discovery to disclosure to patent application. The policy is provost administered (Miami University, 2015).

Key Terms and Phrases.

While the policy defines significant university resources and royalties, the vast majority of terms used within the policy are not defined within the policy. The policy offers an acknowledgement that the policy is modeled after University of New Mexico's policy with the permission of the University of New Mexico. This is the only policy within the sample to make direct reference to another policy from another institution. Of further note is that these institutions are not in close proximity. It indicates an activity of seeking out policies from other institutions in order to create their own policy rather than

creating policy as many policy authors indicate as a form of institutional creation from a unique needs basis. Table 11 shows common words and codes from this IP policy.

Table 11. Common Words and Codes From IP Policy – Miami University, Ohio.

Common Words	**Definitions**	**#**	**Common Codes**
University	Miami University	79	*University*
Total Number of Occurrences of Common Code, University =			**79**
Faculty	Not defined within the document. Merriam-Webster's online dictionary: "group of teachers in a school or college" (Faculty, 2015, para. 1)	28	
Staff	Not defined with the document. Merriam-Webster's online dictionary: "a group of people who work for an organization or business" (Staff, 2015, para. 1)	8	
Student	Not defined within the document. Merriam-Webster's online dictionary: "a person who attends a school, college, or university" (Student, 2015, para. 1) As the policy does not specify as a condition of employment, the expectation is one of significant use of institutional resources, leaving this word without a structure for easy common coding	8	*Employee*
Inventor	Not defined within the document. Your Dictionary's online dictionary: "a person who comes up with an idea for something new" (Inventor, n.d., para. 1)	11	
Creator	Not defined within the document. Merriam-Webster's online dictionary: "a person who makes something new" (Creator, 2015, para. 1)	4	
Total Number of Occurrences of Common Code, Employee =			**59**

Table 11. cont.

Common Words	**Definitions**	**#**	**Common Codes**
Intellectual Property	Not defined within the document. Merriam Webster's online dictionary definition: "property (as an idea, invention, or process) that derives from the work of the mind or intellect; *also* : an application, right, or registration relating to this" (Intellectual Property, 2015, para. 2)	5	*Product*
Invention	Not defined within the document. Merriam Webster's online dictionary: "something invented: a product of the imagination" (Invention, 2015, para. 3)	19	
Discovery	Not defined within the document. Merriam-Webster's online dictionary: "the act of finding or learning something for the first time" (Discovery, 2015, para. 1)	7	
Patent	Not defined within the document. Merriam-Webster's online dictionary: "making exclusive or proprietary claims or pretensions" (Patent, 2015, para. 5)	21	
Development	Not defined within the document. Merriam Webster's online dictionary: "the act or process of creating something over a period of time" (Development, 2015, para. 2)	1	
Total Number of Occurrences of Common Code, Product =			**53**
Significant University Resources	Defined within the document as: "classroom materials were developed with the use of any substantial Miami University-purchased hardware/software, . . . or if the classroom materials were developed during leave time . . .specifically for the development of the classroom materials, or if the classroom materials were developed with substantial assistance from Miami University's information technology personnel" (Miami University, 2015, Section 15. 6. B, para. 7). Purchased items for cost recovery	3	*Money*

Table 11. cont.

Common Words	Definitions	#	Common Codes
Net Royalties	Defined within the document as: "gross royalties, minus the cost incurred in obtaining the patent, the cost of utilizing a patent management firm, and any litigation expenses" (Miami University, 2015, Section 15.6.C.5, para. 1).	10	*Money*
Total Number of Occurrences of Common Code, Money =			**13**

University of Michigan

Distribution of Policy and Placement of Text.

The policy for University of Michigan exists within a larger policy between resource utilization and conflict of interest. The policy is governed by a technology transfer office reporting to the vice president of research. The policy was read three times for comprehension, then significant and frequent words were counted and coded. The University of Michigan intellectual property policy is a four page document (University of Michigan, 2015) in which inventors associated with the University are offered a choice in conversation with the institution indicating a clear plan and understanding of ownership before anything is developed. The policy document begins with a statement of adherence to the mission statement of the University. This framing statement is followed by a statement of disclosure and consultation. The University claims no copyright. Other intellectual property rights provisions must be discussed before any institutional funds or resources are utilized. This poses an interesting indication of intent. The policy implies that employees and inventors understand they may discover or invent intellectual

property; also that all constituents are aware of the policy before they begin a process of discovery. This also indicates that constituents discover nothing by serendipity, but rather with a specific plan in place and the expectation of institutional ownership. Inventors may choose to license rights to an external organization for development. The University may agree to license with a business in which the inventor/employee is a primary interest holder. The University may assign all rights to the inventor. This presentation of three options also implies that there are no other choices or configurations and no exceptions. These decisions are made before any exploration of the invention is pursued.

Key Terms and Phrases.

Further exploration of this policy also revealed that no terms are defined within the document. The document relies completely on reader common understanding. Heavy reliance on reader common in conjunction with the three prong choice of the document raises interesting questions about the cultivation of common understanding and compliance before the fact. Finally, the policy was concluded with a footnote section stating that when the policy is revised all previous agreements are also affected. Table 12 shows common words and codes found in the University of Michigan's IP policy.

Table 12. Common Words and Codes From IP Policy – University of Michigan.

Common Words	**Definitions**	**#**	**Common Codes**
University	University of Michigan	59	*University*
***Total Number of Occurrences of Common Code*, University =**			**59**
Faculty	Not defined within the document. Merriam-Webster's online dictionary: "group of teachers in a school or college" (Faculty, 2015, para. 1)	6	*Employee*

Table 12. cont.

Common Words	**Definitions**	**#**	**Common Codes**
Staff	Not defined with the document. Merriam-Webster's online dictionary: "a group of people who work for an organization or business" (Staff, 2015, para. 1)	2	*Employee*
Inventor	Not defined within the document. Your Dictionary's online dictionary: "a person who comes up with an idea for something new" (Inventor, n.d., para. 1)	29	
Employee	Not defined within the document. Merriam-Webster's online dictionary: "a person who works for another person or for a company for wages or a salary" (Employee, 2015, para. 1)	5	
Developer	Not defined within the document. Merriam Webster's online dictionary: "a person or company that creates computer software" (Developer, 2015, para. 2)	2	
Author	Not defined within the document. Merriam Webster's online dictionary: "a person who starts or creates something (such as a plan or idea)" (Author, 2015, para. 2)	2	
Total Number of Occurrences of Common Code, Employee =			**46**
Intellectual Property	Not defined within the document. Merriam Webster's online dictionary definition: "property (as an idea, invention, or process) that derives from the work of the mind or intellect; *also* : an application, right, or registration relating to this" (Intellectual Property, 2015, para 2)	22	*Product*
Technology Transfer	"Licensing of Intellectual Property rights to parties outside the University" (University of Michigan, 2015, Section I, para. 2)	10	
Patent	Not defined within the document. Merriam-Webster's online dictionary: "making exclusive or proprietary claims or pretensions" (Patent, 2015, para. 5)	9	

Table 12. cont.

Common Words	Definitions	#	Common Codes
Copyright	Not defined within the document. Merriam Webster's online dictionary: "the legal right to be the only one to reproduce, publish, and sell a book, musical recording, etc., for a certain period of time" (Copyright, 2015, para. 1)	1	*Product*
Total Number of Occurrences of Common Code, Product =			**42**
Rights	Not defined within the document and no appropriate definition provided. According to The Free Dictionary by Farlex (online), "plural of right, which is the collection of entitlements which a person may have and which are protected by the government and the courts, or under an agreement (contract)." (Rights, 2003-2016, para. 1)	1	*Rights*
Total Number of Occurrences of Common Code, Rights =			**1**
Commercializa-tion	Not defined within the document. Merriam-Webster's online dictionary: " : to use (something) as an opportunity to earn money" (Commercialize, 2015, para. 1) "*business* : to make (something) available to customers" (Commercialize, 2015, para. 2)	6	*Money*
Royalty(ies)	Not defined within the document. Merriam-Webster's online dictionary: "an amount of money that is paid to the original creator of a product, book, or piece of music based on how many copies have been sold" (Royalty, 2015, para. 2)	4	*Money*
Equity	Not defined within the document. Merriam Webster's online dictionary: "a share in a company : a share of a company's stock" (Equity, 2015, para. 3)	6	
Revenue	Not defined within the document. Merriam Webster's online dictionary: "money that is made by or paid to a business or an organization" (Revenue, 2015, para. 1)	12	
Total Number of Occurrences of Common Code, Money =			**28**

University of Washington

Distribution of Policy and Placement of Text.

The University of Washington IP policy exists within a larger context of executive orders by the president. This particular policy is Executive Order #36 (University of Washington, 2015b). It is largely a narrative document including bulleted sections as lists of inclusion or processes. It contained no preamble or introduction to frame the policy within a broader purpose or institutional construct. The policy is managed by the treasury office and the provost. All disputes are resolved by the provost. The IP committee is provost appointed meeting only as necessary. The policy was read three times for comprehension. Word counts were conducted along with definition searches.

Key Words and Phrases.

The University of Washington's intellectual property policy is a 14 page document offering no definitions and claiming all intellectual property both as a condition of employment and as the result of significant use of university resources. After reading this policy three times, outlining the structure, and tallying frequently used terms, it is clear that this document relies heavily on reader understanding. It is unlikely constituents would seek definitions for terms within the document, but rather rely on their own interpretation and common cultural understanding of the policy (see Table 13).

Table 13. Common Words and Codes From IP Policy – University of Washington.

Common Words	**Definitions**	**#**	**Common Codes**
University	University of Washington	170	*University*
Total Number of Occurrences of Common Code, University =			**170**
Faculty	Not defined within the document. Merriam-Webster's online dictionary: "group of teachers in a school or college" (Faculty, 2015, para. 1)	22	*Employee*
Staff	Not defined with the document. Merriam-Webster's online dictionary: "a group of people who work for an organization or business" (Staff, 2015, para. 1)	15	
Student	Not defined within the document. Merriam-Webster's online dictionary: "a person who attends a school, college, or university" (Student, 2015, para. 1) Employee within the context of the document, as a condition of employment.	12	
Employee	Not defined within the document. Merriam-Webster's online dictionary: "a person who works for another person or for a company for wages or a salary" (Employee, 2015, para. 1)	27	
Inventor	Not defined within the document. Your Dictionary's online dictionary: "A person who comes up with an idea for something new" (Inventor, n.d., para. 1)	7	
Author	Not defined within the document. Merriam Webster's online dictionary: "a person who starts or creates something (such as a plan or idea)" (Author, 2015, para. 2)	25	
Producer	Not defined within the document. Merriam Webster's online dictionary: "someone or something that grows or makes particular goods or products" (Producer, 2015, para. 2)	8	
Total Number of Occurrences of Common Code, Employee =			**116**

Table 13. cont.

Common Words	**Definitions**	**#**	**Common Codes**
Patent	Not defined within the document. Merriam-Webster's online dictionary: "making exclusive or proprietary claims or pretensions" (Patent, 2015, para. 5)	11	*Product*
Invention	Not defined within the document. Merriam Webster's online dictionary: "something invented: . . . a product of the imagination" (Invention, 2015, para. 3)	29	
Intellectual Property	Not defined within the document. Merriam Webster's online dictionary definition: "property (as an idea, invention, or process) that derives from the work of the mind or intellect; *also* : an application, right, or registration relating to this" (Intellectual Property, 2015, para. 2)	33	
Technology Transfer	"the transfer of intellectual property rights between the University and companies or other entities outside the University" (University of Washington, 2015a, para. 1)	40	
Work	Not defined within the document. Merriam-Webster's online dictionary: "a job or activity that you do regularly especially in order to earn money" (Work, 2015, para. 1)	5	
Discovery	Not defined within the document. Merriam-Webster's online dictionary: "the act of finding or learning something for the first time" (Discovery, 2015, para. 1)	2	
Technology	Not defined within the document. Merriam Webster's online dictionary: "the use of science in industry, engineering, etc., to invent useful things or to solve problems" (Technology, 2015, para. 1)	1	

Table 13. cont.

Common Words	Definitions	#	Common Codes
Copyrightable Materials	1) "Video and audio recordings, tapes, and cassettes." 2) "Film, film strips, and other visual aids." 3) "Books, texts, study guides, and similar published materials." 4) "Computer programs and software . . ." 5) "Musical or dramatic compositions." 6) "Internet-based productions and multimedia products." 7) "Other copyrightable materials." (University of Washington, 2015b, Section 2.C.)	7	*Product*
Total Number of Occurrences of Common Code, Product =			**128**
Rights	Not defined within the document and no appropriate definition provided. According to The Free Dictionary by Farlex (online), "plural of right, which is the collection of entitlements which a person may have and which are protected by the government and the courts, or under an agreement (contract)." (Rights, 2003-2016, para. 1)	17	*Rights*
Total Number of Occurrences of Common Code, Rights =			**17**
Commercializa-tion	Not defined within the document. Merriam-Webster's online dictionary: " : to use (something) as an opportunity to earn money" (Commercialize, 2015, para. 1) *business* : to make (something) available to customers" (Commercialize, 2015, para. 2)	4	*Money*
Royalty(ies)	Not defined within the document. Merriam-Webster's online dictionary: "an amount of money that is paid to the original creator of a product, book, or piece of music based on how many copies have been sold" (Royalty, 2015, para. 2)	13	

Table 13. cont.

Common Words	Definitions	#	Common Codes
Income	Not defined within the document. Merriam Webster's online dictionary: "money that is earned from work, investments, business, etc." (Income, 2015, para. 1)	7	*Money*
Venture	Not defined in the document. Merriam Webster's online dictionary: "to start to do something new or different that usually involves risk" (Venture, 2015, para. 2)	12	
Equity	Not defined within the document. Merriam Webster's online dictionary: "a share in a company : a share of a company's stock" (Equity, 2015, para. 3)	14	
Total Number of Occurrences of Common Code, Money =			**50**

Baruch College (CUNY)

Distribution of Policy and Placement of Text.

The City of New York's Bernard Baruch College claims all intellectual property as a condition of employment or where significant university resources have been used. This 11 page policy (City University of New York, 2008) begins with a statement of purpose to serve the public good and disseminate inventions to the public. The policy is a standalone document not contained within a larger document, but housed on the institution's website. The policy document is presented in an outline form and concluded with definitions of many of the common terms used within the document.

Interestingly, this policy utilizes an inclusive term; "member of the university" to discuss employees and students. Decisions are made by the Chancellor, the executive of the institution. Several committees govern the functions of intellectual property. A

primary committee functions overseeing policy execution. This committee is appointed by faculty senate and the Chancellor of the institution. Other committees such as a copyright committee, patent and technology committee, and trade secrets committee all report to the intellectual property committee. This hierarchy of committees and subcommittees demonstrates an intricate system of specific area expertise and workload dispersal. Disputes are resolved internally with the Chancellor. This policy contains a firm statement of expectation of disclosure and policy adherence. An entire section on the distribution of income from intellectual property dictates an equally shared revenue between creator and institution (City University of New York, 2008).

Key Words and Phrases.

This policy also included an interesting use of capitalization indicating proper nouns such as Members, Intellectual Property, and Creator. Capitalization of these terms indicates a reference to specific items or persons, rather than a vague name placeholder. Table 14 shows common words and codes in City University of New York's IP policy.

Table 14. Common Words and Codes From IP Policy – Baruch College (CUNY).

Common Words	**Definitions**	**#**	**Common Codes**
University	Not defined within the document but considered to indicate Baruch College.	135	*University*
Total Number of Occurrences of Common Code, University =			**135**
Creator	"Shall mean a Member of the University whose creative activity results in the development of Intellectual Property. As used in this policy, the term "Creator" also includes groups of researchers, authors or inventors whose joint efforts produce Intellectual Property" (City University of New York, 2008, p. 9).	38	*Employee*

Table 14. Common Words and Codes From IP Policy – Baruch College (CUNY).

Common Words	**Definitions**	**#**	**Common Codes**
Employee	Not defined within the document. Merriam-Webster's online dictionary: "a person who works for another person or for a company for wages or a salary" (Employee, 2015, para. 1)	1	*Employee*
Faculty	Not defined within the document. Merriam-Webster's online dictionary: "group of teachers in a school or college" (Faculty, 2015, para. 1)	3	
Member of the University	Defined within the document as "full-time and part-time faculty, staff, and graduate students engaged in faculty-directed research, whether paid or unpaid, as well as individuals compensated by grant funds made available to the University by or through the Research Foundation. Any other person who develops Intellectual Property while making extraordinary use of University Resources shall also be deemed a Member of the University, unless there is an agreement providing that such person shall not be subject to this policy" (City University of New York, 2008, p. 9).	30	
Student	Not defined within the document. Merriam-Webster's online dictionary: "a person who attends a school, college, or university" (Student, 2015, para. 1)	3	
Total Number of Occurrences of Common Code, Employee =			**75**
Intellectual Property	Defined within the policy as "all forms of intellectual property, including but not limited to Inventions, Copyrightable Works, Trade Secrets and Know-How, and Tangible Research Property, but excluding Trademarks" (City University of New York, 2008, p. 9).	73	*Product*

Table 14. Common Words and Codes From IP Policy – Baruch College (CUNY).

Common Words	**Definitions**	**#**	**Common Codes**
Commissioned Work	Defined within the policy as "work commissioned by the University in writing from a Member of the University, outside the scope of his or her employment" (City University of New York, 2008, p. 9).	4	*Product*
Copyrightable Work	Defined within the policy as "an original work of authorship, including any Scholarly or Pedagogical Work, which has been fixed in any tangible medium of expression from which it can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device, and may include, but is not limited to, books, journals, musical works, dramatic works, multimedia products, computer programs or codes, videos, films, sound recordings, pictoral and graphical works and sculpture" (City University of New York, 2008, p. 9).	9	
Invention	Defined within the policy as "a process, method, machine, manufacture, discovery, device, plant, composition of matter or other invention that reasonably appears to qualify for protection under the United States patent law, whether or not actually patentable. 'Invention' shall also include computer programs and codes, but only to the extent they are patentable" (City University of New York, 2008, p. 9).	8	
Total Number of Occurrences of Common Code, Product =			**94**
Commercializa-tion	Not defined within the document. Merriam-Webster's online dictionary: " : to use (something) as an opportunity to earn money" (Commercialize, 2015, para. 1) "*business* : to make (something) available to customers" (Commercialize, 2015, para. 2)	13	*Money*

Table 14. Common Words and Codes From IP Policy – Baruch College (CUNY).

Common Words	**Definitions**	**#**	**Common Codes**
Own/ Ownership	Not defined within the document. Merriam Webster's online dictionary: "belonging to oneself or itself" (Own, 2015, para. 1)	18	*Money*
Royalty	Not defined within the document. Merriam-Webster's online dictionary: "an amount of money that is paid to the original creator of a product, book, or piece of music based on how many copies have been sold" (Royalty, 2015, para. 2)	7	
Total Number of Occurrences of Common Code, Money =			**38**
Rights	Not defined within the document and no appropriate definition provided. According to The Free Dictionary by Farlex (online), "plural of right, which is the collection of entitlements which a person may have and which are protected by the government and the courts, or under an agreement (contract)" (Rights, 2003-2016, para. 1)	12	*Rights*
Total Number of Occurrences of Common Code, Rights =			**12**

Hegemonic Analysis

Common elements of these policies were that all were searchable and available online. Each institution's internet homepage provided a search field. Every institutional webpage contained policy documents falling under the searchable words "intellectual property policy." This vehicle of dissemination clearly falls within the confines of technologization of policy. Placing policies online requires another mechanism for locating, acquiring, and understanding the policy. The online dissemination points to another mechanism such as an email, a conversation, a mediated information presentation

system as the employees must pull the information from the system rather than relying on an information push system where information is provided to the individual followed by a compliance seeking element. In some policy situations, employees are asked to view a series of informational videos and take a quiz. This process is tied to their continued employment. However, none of the institutions in this sample utilized a compliance gaining system such as videos and testing. Each policy relied on an employee seeking information regarding the policy and process of intellectual property.

Policies were all PDF documents located through a hyperlink online. This indicated documents must be created and scanned to be placed online while also ensuring documents cannot be altered online. Policy appearance varied from font size and typeface to an outlined format to more of a memorandum format. Some printed policies lead with branded institutional elements such as color schemes and logos. Others appeared simple documents containing little that would identify them with their parent institution.

Each policy except one implies further conversation post invention. Once intellectual property has been created and disclosed the process of technology transfer requires some research, feasibility study, as well as contractual agreements specific to the individuals and invention involved. However, one policy indicated that that conversation and contract begins the process.

The majority of the policies, while containing similar language, varied greatly in structure and contextual elements. Four policies were located within a broader document such as a handbook, while one policy was segmented and scattered over several links, the remainder were single documents linked on the institution website. All policies contained language establishing the institution as the dominant figure within the policy by

frequency, sentence structure, and controlling interest. In each policy, it was evident that the institution controlled relationships and flow of information and outcomes. Each policy utilized dominant/subordinate language and titles. Three institutions claimed ownership of all intellectual property, four universities claimed intellectual property as a condition of employment. Policy language in both situations indicated a risk of termination of employment for a failure to comply. Conversely, the rewards for policy compliance and intellectual property creation appeared minimal, garnering partial ownership and remuneration in all cases (Tables 15 and 16).

Table 15. Claims to Intellectual Property by Universities in Study.

Name of Institution	**Location**	**Funding**	**# Students**
University of Houston	Houston, TX	Public	37,000
Claims all intellectual property.			
University of Arizona	Tucson, AZ	Public	38,767
Claims all intellectual property as a condition of employment or where significant resources have been used.			
Temple University	Philadelphia, PA	Public	38,507
Claims all intellectual property as a condition of employment and/or where significant resources have been used.			
University of North Carolina at Chapel Hill	Chapel Hill, NC	Public	28,916
Claims all intellectual property			
University of Oklahoma	Norman, OK	Public	25,881
Claims all intellectual property			
Northeastern University	Boston, MA	Public	27,537
Claims all intellectual property as a condition of employment.			
University of Maryland	College Park, MD	Public	37,195
Claims all intellectual property as a condition of employment.			
Miami University	Oxford, OH	Public	16,884
Claims all intellectual property where significant institutional resources are used.			

Table 15. cont.

Name of Institution	Location	Funding	# Students
University of Michigan	Ann Arbor, MI	Public	41,674
Offers three choices to employees.			
University of Washington	Seattle, WA	Public	45,943
Claims all intellectual property as a condition of employment.			
Baruch College (City University of NY)	New York, NY	Public	18,090
Claims all intellectual property as a condition of employment and where significant institutional resources are used.			

Table 16. Strength of Claims to Intellectual Property.

Institutions Claiming All IP	Institutions Claiming a Degree of IP	Institutions With Variants	Institutions Claiming No IP
University of Houston	University of Arizona as a condition of employment or with significant resource utilization	University of Michigan as a three plan choice before idea cultivation	
University of North Carolina at Chapel Hill	Northeastern University as a condition of employment		
University of Oklahoma	University of Maryland as a condition of employment		
	Miami University where significant resources are used		
	University of Washington as a condition of employment		
	Temple University as a condition of employment or where significant resources are used		
	Baruch College as a condition of employment or where significant resources are used		

A curious commonality among every policy within the sample was the neglect of a definition of "rights." Similarly, the Merriam Webster's Online Dictionary contains a similar omission, defining rights as a direction or political leaning. Further searches found a more appropriate definition including legal rights. Further examination of definitions of legal rights revealed four levels of legal rights. This indicates a complexity of terminology ignored by the policy documents leaving it for the reader to determine.

As a matter of interest, common words found in all documents analyzed were counted and shown by common code in Table 17.

Table 17. Number of Common Codes Found in All Policies Combined.

Common Codes (Selected Common Words) Hierarchy by Frequency	**Number of Occurrences**
University (Institution, Board, University System)	1,735
Product (Intellectual Property, Works, Inventions)	1,327
Employee (Author, Creator, Inventor, Student, Person, Personnel, Staff, Faculty, Investigator, Discoverer, etc.)	1,171
Money/Rights (Resources, Income, Revenue, Assets, Equity)	612

CHAPTER V

FINDINGS

Adhering to Fairclough's three planks of analysis, language, definitions and use illuminate several interesting elements common to all the policies analyzed. First, the policies draw clear lines between management and employee. Each policy established a hierarchy from which the policy was delivered and administered. The policies also established the employees as required to adhere to the policy. Only four policies offered parameters for employees with definitions. The remainder assumed that subject readers would understand their role, their title, and thereby the appropriate actions. Only one policy offered a course of action for feedback or conversation. All other policies, by their nature, were single direction directives from the administration.

After reading each policy three times for comprehension then conducting word count for dominant language, a pattern emerged. Word counts for each revealed an institutional language emphasis. The primary noun was the institution followed by the employee or inventor. The IP or invention was third and in a position of the least frequent in appearance was revenue. In five cases a detailed table of revenue distribution appeared within the policy document. As the commercialization of the innovation appears to be of low priority and the institution and employee relationship and proclamation of ownership paramount, this produces a paradox. If revenue is not the primary result of commercialization interests, then what is? Pseudonyms for the institutions were rare

using primarily university or institution. Conversely, synonyms for employees included the greatest range.

The vast majority of terms were left undefined. Utilizing a common dictionary produced utilitarian definitions; however the definitions in most situations left much to be interpreted within the context of the policy. Combining terms and understanding aided in this endeavor producing a linked understanding. For example, an inventor by definition creates an innovation. The definition says nothing about employment or commercialization. Conversely, most of the policies stated that inventions were the property of the institution by virtue of the inventor's employment. This is a multilayered understanding which first dictates that the employee must see themselves as an inventor or the inventor must see themselves as an employee. Language play such as this fails to address a hierarchy of title understanding. An inventor may seek to teach or an employee may seek to invent. These are very separate iterations of personal understanding and problematic for institutions and their employees.

Some terms could not be defined by a common online dictionary. Terms such as rights and technology transfer required further, more specialized investigations to retrieve definitions. Rights in the common use dictionary were a series of directions; turn right, or a proper noun referring to political leanings. A legal dictionary was required to find a definition that fit within the context of the policies. However, it must be noted that the legal reference provided 12 separate understandings of rights. Technology transfer is an industry specific term relating to the practice of bringing developed innovations to market through the institutional office of intellectual property management. Technology transfer also refers to the commercialization of institutionally owned innovations. This conflates

another definition found in common use dictionaries and again, produces a complicated, multilayered definition.

The context and dissemination of the policies through the internet and each policy's placement within a broader context also reveals much about the creation of the culture and relationships involved with these policies. As most policies claimed all IP or claimed IP as a condition of employment, the placement of the policy delivers a message about the employee's role and consequences. Within broader policies, the IP policies fell between policies on promotion, tenure, resource use, and discipline for conflict of interest. The message is clear that all IP created by employees is the property of the institution. If the employee believes otherwise, the burden of proof falls on the employee. Similarly, failure to adhere to the policy will result in punitive correction or dismissal. Within the IP policies, most began with an introduction or preamble relating the policy to the institution's mission. Most outlined the obligation of higher education to create and disseminate knowledge. It is clear that the policies all perceived IP as a marketable product or invention. Patents, copyrights, and software appeared separately within the policies. Publication of findings was prohibited until the disclosure and IP management decisions had been made. This also poses a problem. In an academic world, each faculty bares the expectation of publication. The policies offer little in terms of differentiation between IP discovery with the mandate of disclosure and the vast majority of publications baring copyright. It would seem the judgment of disclosure rests initially with the faculty. Faculty may publish research leading to a discovery not realizing that the discovery is subject to the IP policy. Conversely, faculty may hold off publication seeking disclosure and decision only to be delayed in the publication process with the

institution deciding they have no interest in the discovery. In the knowledge economy, these policies do not allow for this discrepancy.

Similarly, the policies demonstrated an understanding of students as employees. One policy even stated that innovations produced as the result of coursework are the property of the institution as without the coursework the innovation would not have occurred. Faculty must demonstrate that an innovation was created outside the parameters of employment. How are students to demonstrate a similar proof? Five policies were set within faculty handbooks leaving it unclear how a student may understand the policy. While the policies are available online, the language is unclear regarding students. Students may be employed in a great many capacities from transportation to dining services or research. Some forms of employment may lend themselves to the creation of IP, others however, do not seem fertile ground for IP innovations. Also, placement of the IP policies may indicate the perception of employees as assets. Where the stipulation of significant use of resources specifies, in some cases students pursuing an education may create relationships with faculty and the use of this faculty to pursue an innovation can be considered significant use of resources.

The Bayh/Dole act of 1980, as law, may produce the most interesting quandaries. As ignorance of the law can be no excuse, employees are expected to seek and understand policies as they relate to law as well as comply. But the act itself uses language such as “may”, not “shall” or “will”. This indicates that institutions may choose to claim no IP leaving the vague implication that this is less of a law and more of an allowance of policy.

The hegemonic elements of the policies are evident. Similar language is used in each policy. In one case, another institution is credited with the policy. The common structures of the policies indicate a common culture of ownership. The placement of the policies indicates an understanding of a power distance, how to create that power distance, how to maintain that power distance, and how to enforce policies. Institutions failed to offer unique definitions or terms, relying heavily if not totally on common understanding as those definitions change in light of a dawning knowledge economy.

Moreover, the creation and delineation within the policies of the power structure clearly indicates an inclination toward control. Many policies stated that the final decision remained with the provost and that the committee merely made recommendations. Three policies offered a course of action for disputes but only one offered an avenue for feedback. This indicates a clear top down delivery of information and enforcement of policy. All policies outlined the process of IP. This in one situation meant that a contract must be sought before any innovation or research could even begin. The majority of the policies stated that upon discovery, the employee must disclose the discovery to the IP power structure. The decisions from this point on rested with the power structure indicating that the power structure would research and make recommendations. If further development was not sought by the institution, then the employee could seek development on their own.

CHAPTER VI

CONCLUSIONS

The discipline of policy analysis must include new concepts of critical discourse analysis in order to more effectively revisit and understand policy implications. Similarly, the field of communication must embrace an implied power structure produced by technologization. Technologization of policy affords a more abstract view of the discourse and relationship produced. More importantly, the critical discourse analysis of technologized IP policies produces many interesting questions regarding process imbalances, power distance, and the bourgeoning knowledge economy. Fairclough's three plank analysis has allowed a deeper understanding of these publicly available policies, relationships, and innovation within the broader context of higher education.

Through this research it is clear that the culture of higher education remains an industrial model. The top down decision making process, empowering the administration while defining the employee maintains a power distance relationship of power and subservience. This is an industrial model where employees produce a product of value which is sold. However, in this case, what is the product? The product could be knowledge, packaged within courses or research, and disseminated through classes or publication. However, the IP policies imply that the product is innovation. The introductory statements, definitions, contexts, and processes point to the invention as the product of higher education. This disallows any advancement toward a knowledge

economy or richer understanding of what is product in an increasingly productless environment. The creative product in a new paradigm would be an idea, a concept. This concept would be shared and in the sharing produce value. However, the disclosure mechanism of all the policies produces a paradox. As higher education employees have historically used research presentation to pilot concepts and test ideas, the mandate to first disclose and produce no publication until the administration decides the fate of the innovation may discourage innovation and inhibit idea development.

The omission of definitions, relying on common use understanding of terms also provides an unstable foundation or infertile soil for the knowledge economy. Institutions providing no definitions of necessary terms such as intellectual property, rights, or technology transfer indicates a shifting perception of production and innovation. Claiming IP as a condition of employment indicates that anything produced by an employee is by default the property of the institution unless otherwise proven by the employee. This demonstrates an omission of an employee's free time and indicates that an employee remains an employee even when not at work, and thereby all production belongs to the institution. Similarly, language such as where significant institutional resources are used implies a cost benefit analysis and fear of loss mentality on the part of the administration. There is an assumption of institutional investment. One institution defined this language, but only vaguely. This indicates that where there is an expenditure, no matter how slight, there should also be a revenue. This does not follow through however, as language and phrases focusing on revenue were the least frequent in appearance and often subject to the administrative decision to pursue an idea.

For these reasons, it appears as though higher education may abdicate its role as innovation creation engine and instead continue to provide the industrial model role of producing skilled employees. While this may be profitable for the institutions for a while, the lack of vision toward the new knowledge economy will inevitably cripple the institution rendering them only able to produce employees, not skilled employees as the new skill set must include an understanding of the knowledge economy and its functions.

Higher education has historically been the source of idea revolutions as well as cultural mechanisms. Higher education has been able to commodify new technology in the form of a skill base in order to produce accomplished students ready for employment in new fields. In the knowledge economy, the skill base is not so easily taught or delivered through curriculum. Higher education's propensity for hierarchy, policy, and increasing control of creativity may be counterproductive to the next stages of the knowledge economy. The developments necessary may come from more nimble, less power structure and process heavy environments, embracing the rapid cross pollination of ideas.

Each policy contained a statement of intent. This statement discussed how the policy was intended to incentivize invention and discovery. Policy scholars assert that policies are created to change, manage, or create behaviors. With these two concepts held in tandem, it would indicate that policies discuss the rewards and conditions of invention and discovery. However, the policies focus on disclosure and ownership, not creativity or commercialization. Also, decidedly with a punitive perspective as the policies appear between tenure and promotion and conflict of interest policy sections. The context would indicate that the policy is more policing than incentivizing.

The question remains if the policy produces what it intends. Based on national averages, it is clear these policies are not working. The policies are administration dominant, employee subordinate and driven by verbs of ownership with little mention of incentives or motivation. Examining context, language, dissemination, and definitions, if the policies intend to create, change, or manage behavior toward invention and discovery there is a profound disconnect. The elements examined do not demonstrate such a policy, but rather quite the opposite, that the institutions demand disclosure and ownership of what might be created or discovered. In this light, it is evident that these policies fail in their indicated intent.

Returning to the research questions, what is the intellectual property framework in the United States and in higher education? Examining the 11 policies from the top public entrepreneurial programs, it is clear that the policies use similar language, claims, priorities, and structures. This indicates that each institution relies on other institutions for language validation. This is a communication at the highest level, at the institutional administration level creating a framework unassailable from lower levels. The framework appears to be firmly established. However, on the cusp of the knowledge economy higher education could explore two paths, to maintain the industrial model of knowledge dissemination for the purposes of skilled worker cultivation or to alter the framework to include intangible knowledge economy models and goods. In either case, the framework appears to be one of innovation as an outgrowth of academic function, as a byproduct of employment, and facilitated through the use of facility resources. However the framework as established is not easily altered and cannot react easily to new structures, ideas, or creativity. The framework is an immovable one, and establishment mentality

and construct firmly rooted and controlled at the highest levels with little or no input from constituents.

What role does higher education play in the intellectual property discussion? The policies of these institutions were quite similar in language and construct. This indicates that this is not so much a conversation as a set practice, perhaps an immoveable practice. The policies largely neglected to define terms, including legal terms, which indicates that the institutions either believe them to be common use terms, or that by not defining them, the definitions are free to change as concepts evolve. The ambiguity serves only the administrations. As the policies are determined by the administration, it is not likely that subjects of the policy would be allowed to determine definitions relevant to their particular case or creation. The framework and nature of the policy creation clearly indicates that it is the administration that is allowed to define terms within situations thereby answering the question; this policy is not a conversation or discussion, but rather an unlevel playing field where the rules change, but only as the administration allows.

How do intellectual property ownership policies alter relationships and productivity within higher education? The vast majority of institutions claimed intellectual property of employees and students as either a constraint of employment or where significant resources had been used. This clearly indicates a power structure relationship of employer and employee, or resources holder and resource user. This power distance is amplified in policies where the inventor must prove an innovation was created without institutional aid and outside the realm of normal duties of employment. This relationship, one of disclose or face the consequences, is one of control. Consider if a faculty member created something, unsure if it was commercializable, they disclose the

innovation. The majority of the policies indicated a six month consideration time in which no more work on the invention can be done. This work slow down does by its nature decrease productivity. This forced disclosure for project validation also creates a system where work may be undervalued at an early stage of development.

How does the rhetoric of these policies demonstrate relationships? Each policy clearly identified the institution with singular monikers whereas employees were identified by several terms. Ownership of innovation or intellectual property was clearly stated as a condition of employment, also implying that violation of the policy may result in the termination of employment. Similarly, many policies claimed intellectual property where significant resources were used, implying that to use resources for any other reason lies outside the realm of permissible use. The placement of policies between promotion polices and conflict of interest and discipline policies also clearly indicates consequences for actions which fall outside policy. Perhaps more interesting is that in no way was tenure discussed. Tenure in higher education indicates a level of academic freedom. However, if tenure is not a consideration for innovation and ownership then it is not advantageous for the employee. The levels of academic distinction appear to be flattened by this policy, removing the advantages of advanced rank and tenure securities.

Overall the policies validate institutional power, claim ownership of employee intellectual property, and pose very real consequences for a failure to comply. However, perhaps more interestingly is that these policies each frame their existence within altruist institutional intentions which the policies themselves fail to present, uphold, incentivize, or actualize. This represents either an institutional disconnect or a failed policy creation function. This research does not include statistics on IP success ratios or faculty

understanding of the policies, nor of motivations for invention in the face of these policies. Other research has done this work. It is clear however, that these policies create a structure in which invention destabilizes tenure benefits, creates a top-down mentality, demands disclosure at early stage development and punishes a failure to do so. The policies indicate a clear disconnect that they are indeed not altruistic incentives for innovation, but rather mildly veiled control and revenue measures.

Recommendations

Policy creation can be a complicated task. Policies are put in place for a variety of reasons. These reasons ought to be clear from the outset. Conflicting messages of altruism, legal foundations, revenue maximization, and appropriate employment controls do not aid in understanding policy. Policies created through a grassroots approach utilizing representatives from all levels of employment creates a policy easily understood with institution wide validation. In all policies in this research committees for policy creation surrounding intellectual property were created by request of the provost, members by appointment. A solicitation or invitation for involvement may create a culture of communal policy creation and validation negating a power distance relationship construct and increasing involvement as well as policy understanding.

More pragmatically, the placement of policies on websites produces an arena for failure. Employees may not understand their work is even subject to the policy. More effective communication regarding policies as well as inclusion in their creation would avoid misunderstanding and misapplication of policy. Within the process of IP consideration, most institutions failed to disclose the manner in which an innovation would be considered. It was stated that the decision rested with the provost in most cases

and with a committee in those that remained. The process of commercialization also was not included, and it must be stated that these policies generate no confidence in an institution's ability to commercialize the broad field of potential innovations effectively. All of these concerns could be abated with the simple inclusion of a feedback mechanism. Only one institution included such a mechanism, but it contained no information on how the feedback would be used. A policy that does not invite regular feedback cannot be altered easily should the market demand it. Within the field of higher education, it would stand to reason that these individuals, charged with advancing knowledge, should be the realm of rapid innovation. However, it has been industry that has been first to market relying on creative communal approaches to IP rather than top-down vaguely stated policies with a punitive approach. Higher education needs urgently to reconsider the creation of these policies, reframe them within an inclusive mechanism of consideration and constituent contributions. This industrial model of power distance and control only serves to slow the advance of creation and innovation while supplanting hard fought privileges of tenure and research. It would appear that the fear of the potential loss of some innovation has fueled a system of premature disclosure, inordinate controls, less than optimal cultivation, and vague terminology to maintain control. No crop can grow in the constant shadow of the gardener's gaze.

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